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21st CENTURY TEACHING STRATEGIES AND TEACHING PERFORMANCE AMONG SOCIAL STUDIES TEACHERS IN CALAMBA CITY PRIVATE SCHOOLS

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ABSTRACT

This study was intended to determine the relationship between 21st Century Teaching Strategies and Teaching Performance among Social Studies teachers in Calamba City private schools. It aimed to explore the utilization of various 21st Century Teaching Strategies, including Gen A Teaching Strategies, Evidence Based/High Impact and Kagan Learning Structure. The study did not only provide a comprehensive overview of the current practices and performance levels but also examined the correlations between different teaching strategies and their impact on teaching performance. The implementation of the 21st century teaching strategies among Social Studies teachers in terms of Gen A Teaching Strategies was Fully Implemented (3.50). The implementation of 21st century teaching strategies among Social Studies teachers in terms of active learning, cooperative learning, formative assessment, differentiated instructions, and classroom discussion was Fully Implemented (3.55). The implementation of 21st century teaching strategies among Social Studies teachers in terms of round table, quiz - quiz trade, timed-pair share, fan n share, and numbered heads together was Fully Implemented (3.51). Teaching performance level among Social Studies teachers in Calamba City private schools in terms of content knowledge and pedagogy was Very Good (3.56). The teaching performance level among Social Studies teachers in terms of learning environment was Very Good (3.75). Moreover, a significant correlation was found between the teaching performance of Social Studies teachers and 21st-century teaching strategies. The probability values of 0.000, which is less than the significance level of .05. An enhancement program for teaching strategies of Social Studies teachers in Calamba City private schools was proposed.

Keywords: *21st century teaching strategies, teaching performance, Gen A teaching strategies, evidence based/high impact learning structure, Kagan Learning Structure*

INTRODUCTION

Teaching had long been esteemed as a profession crucial to shaping future generations. Education, an ever-evolving field, demanded that educators be innovative and adaptable to meet changing student needs. The 21st century introduced new teaching methods to enhance knowledge transfer and student engagement, highlighting the importance of modern approaches to maintain relevance and effectiveness (University of the People, 2024).

In response to rapid societal changes, 21st-century teaching methods evolved significantly. Teachers emphasized technology, critical thinking, creativity, and teamwork, focusing on student-centered learning through group projects, inquiry-based tasks, and problem-solving. Digital tools and online resources revolutionized education, while flipped classrooms and personalized learning catered to individual needs, allowing students to progress at their own pace. Professional development was crucial for implementing these strategies, greatly impacting educators' effectiveness and student success (Ranjan, 2023).

This highlighted the need for private social studies teachers to integrate 21st-century methodologies. Understanding their challenges and opportunities was essential for identifying necessary professional development. Addressing this gap provided valuable insights for educators and policymakers, advancing educational practices in the 21st century (Kim, 2019).

The teaching profession played a key role in developing individuals with integrity, knowledge, and capabilities, long recognized for its societal impact. Since the early 21st century, teaching methods evolved, prompting teachers to adapt to the needs of tech-savvy students. Employing 21st-century strategies was crucial for creating dynamic, successful learning environments that catered to diverse student needs (Mugabo, 2020).

Given students' intrinsic association with digital technologies, conventional teaching approaches were insufficient in the 21st century. As more individuals became proficient with digital tools from a young age, expectations changed. Educators had to adapt by integrating technology into the classroom, a task that required more than just adding tech; it necessitated professional development programs to equip teachers with the skills needed to enhance learning outcomes (Yeboah, 2020).

There was a strong correlation between adopting modern teaching methods in the 21st century and teaching excellence. Educators who used technology and innovative methods enhanced learning experiences, but many-faced challenges due to lack of familiarity, underscoring the need for focused professional development (Munna, 2021). This was especially true in 21st-century social studies education within private schools in

Calamba City, where research on improved teacher performance had been lacking despite the potential for innovative methods to revolutionize education (Al-Ghasab, 2022).

Addressing this research gap was crucial for enhancing understanding of effective teaching practices and impacting teacher preparation programs and curriculum design. Examining how social studies teachers in private schools utilized modern teaching techniques in the 21st century revealed obstacles, advancements, and their impact on student development. This research aimed to identify strategies for supporting teachers, enhancing graduate quality, and preparing students for the complexities of contemporary society (Podolsky, 2019). It was crucial to bridge the gap between traditional teaching methods and the demands of the 21st century. Focusing on social studies teachers in private schools, the study explored the challenges of adopting modern teaching methods and their benefits for student performance and teacher effectiveness.

Specifically, this study addresses the research gap concerning 21st-century teaching strategies in social studies education within private schools in Calamba City. It examines how these strategies are implemented by social studies teachers, evaluates their impact on student performance, and identifies the associated challenges. The findings aim to enhance education quality by recommending advancements in professional development, teaching methodologies, and educational policies (Mallilin, 2021). Given the dynamic landscape of 21st-century education, the study also investigates the correlation between teacher effectiveness and these contemporary methods. Its goal is to promote effective teaching practices that foster conducive learning environments and align with evolving educational needs (Ononiwu, 2023).

Research Questions

This study was intended to determine the relationship between 21st Century Teaching Strategies and Teaching Performance among Social Studies Teachers in the Private Schools of Calamba City, Laguna.

Specifically, it sought answers to the following questions:

1. What is the level of implementation of the 21st Century teaching strategies among Social Studies teachers in Calamba City private schools in terms of:
   1.1 Gen A Teaching Strategies,
   1.2 Evidence Based-High Impact, and
   1.3 Kagan Learning Structure?

2. What is the teaching performance level among Social Studies teachers in Calamba City
   private schools in terms of:
   2.1 Content Knowledge and Pedagogy,
   2.2 Learning Environment,
   2.3 Diversity of Learners,

2.4 Curriculum Planning,
2.5 Assessment and Reporting, and
2.6 Community Linkages and Professional Engagement?

3. Is there a significant relationship between the level of implementation of 21st Century Teaching Strategies and teaching performance level of Social Studies teachers in Calamba City private schools?

4. Based on the findings of the study, what enhancement program for Social Studies teachers in Calamba City Private Schools may be proposed?

METHODOLOGY

This chapter presents the methodology of the study including research design, respondents of the study, sampling technique, research instrument, validation of instrument and research procedure.

Research Design

The descriptive-correlational design, as defined by research experts, was a methodological approach used to describe the variables of interest and examine the relationships that naturally occurred between them. This design was particularly suited for studies aiming to explore associations between variables without manipulating them, thus providing insights into existing patterns and connections within a given context. In the context of this study, the descriptive-correlational design enabled researchers to systematically describe the extent of 21st-century Teaching Strategies and Teaching Performance among Social Studies teachers in Calamba City Private Schools. By employing this design, the study not only provided a comprehensive overview of the current practices and performance levels but also examined the correlations between different teaching strategies.

This method was taken into great consideration because, according to Creswell (2018), as cited in Walters, (2020) descriptive correlation research focuses on describing and understanding relationships between variables. Walters also emphasized that this method involves detailed analysis and interpretation of existing conditions, and often includes comparisons, contrasts, and the exploration of relationships between variables. A descriptive correlation study should be unbiased, aiming to collect factual evidence and information to provide a comprehensive understanding of the subject. Writing a descriptive correlation study can be challenging due to its reliance on unbiased data collection and analysis, but it is a valuable approach commonly used in various fields to analyze relationships between different phenomena.

The choice of the descriptive-correlational design aligned with the study's objectives and direction by allowing researchers to explore the relationship between 21st-century teaching strategies and teaching performance among Social Studies teachers.

Through the systematic description of variables and examination of correlations, the study aimed to identify the extent to which 21st-century Teaching Strategies were implemented and their association with teaching performance in the context of Calamba City Private Schools. By understanding these relationships, the study sought to inform strategies for enhancing teaching practices, improving student outcomes, and promoting effective instructional approaches tailored to the needs of 21st-century learners. Thus, the descriptive-correlational design served as a suitable methodological framework for achieving the study's objectives and advancing knowledge in the field of education.

Research Locale

The study was conducted in Calamba City, Laguna, Philippines with the selected basic education institution operating in the said city. The selected Basic Education Institutions are Saint Benilde International School, Little Jesus Learning Center Canlubang and Philippine Women's University (Calamba).

Population and Sampling

The population for this study comprised social studies teachers and their students in Calamba City Private Schools. Sampling was conducted using stratified random sampling, a method that was relatively straightforward to implement as it only required a single random selection and minimal prior knowledge of the population. This approach ensured strong internal and external validity in the research, reducing the likelihood of sampling bias and selection bias (Hall, 2020).

The research population included three Basic Education Institutions in Calamba City, consisting of social studies teachers and their students for the School Year 2023-2024. Specifically, it involved sixteen (16) social studies teachers and one hundred ten (110) students, totaling 126 respondents. The study used G Power to determine the number of respondents, which was 126, with an effect size of 0.31 and a confidence level of 95%.

Respondents of the Study

The study involved Social Studies teachers and their students from private schools in Calamba City, Laguna, as respondents. This study employed a stratified simple random sampling technique, focusing on Social Studies teachers and their students to evaluate their teaching strategies and performance. The inclusion of both teachers and students aimed to provide a more comprehensive understanding of the teaching process, including the impact of teaching strategies on student outcomes.

Instrument

The research instrument consisted of rigorously developed survey questionnaires tailored precisely to correspond with the objectives and research questions specified in Chapter 1 of the study. Each component of the instrument aligned with a particular feature

of the Statement of the Problem, ensuring a thorough examination of the study's main areas of focus.

Part 1 of the instrument, a researcher-made questionnaire, was designed based on the first research question. It specifically evaluated the degree to which Social Studies teachers in Calamba City Private Schools utilized 21st-century teaching strategies. This section included topics relevant to several teaching tactics used in the 21st century, including Gen A Teaching Strategies, evidence-based, high-impact, and Kagan approaches. Teachers and students were requested to specify the frequency at which they utilized these strategies in their teaching methodologies.

Part 2 of the instrument consisted of an adapted questionnaire from the DepEd Order No. 42 s, 2017 entitled "National Adoption and Implementation of the Philippine Professional Standards for Teachers. This part focused on measuring teaching performance among Social Studies teachers, specifically addressing the second research question. It covered teaching performance indicators mentioned in the Statement of the Problem, such as content knowledge pedagogy, learning environment, diversity of learners, curriculum planning, assessment and reporting, community linkages, and professional engagement.

Teachers were required to evaluate their effectiveness in each of these categories based on their own perceptions and experiences. By organizing the research instrument in this way, each section directly related to a certain component of the research questions, making it easier to systematically and thoroughly evaluate the main topics of the study. This methodology guaranteed that the gathered data specifically targeted the research objectives stated in Chapter 01, allowing the researcher to derive significant conclusions and insights regarding the correlation between 21st-century teaching strategies and teaching performance among Social Studies teachers in Calamba City Private Schools.

Validation of the Instrument

The questionnaires underwent a rigorous validation process involving both internal and external validators, including three experts from within the institution and three external experts in research. Their feedback on relevance and clarity was carefully considered, leading to necessary revisions. After incorporating essential changes based on their input, the finalized questionnaires were meticulously prepared for data collection. The Content Validity Ratio (CVR) scores were 1.0 and 0.99, indicating high validity. Additionally, the Cronbach’s alpha coefficient, which assessed reliability, yielded a satisfactory score of 0.70. A pilot test with 20 respondents further confirmed the questionnaire's internal consistency. The researcher had developed the instrument independently, and the final draft had been ready for pilot testing at Asian Computer College in Calamba City, Laguna.

Data Gathering Procedure

In the pre-data gathering phase, meticulous steps were taken to ensure the ethical and methodological integrity of the study. This involved obtaining necessary permissions

from relevant authorities, such as school administrators and local education boards, to conduct research within Calamba City Private Schools. Following this, the researcher embarked on the development and validation of survey questionnaires tailored to assess the identified variables and objectives of the study. These questionnaires underwent rigorous scrutiny through expert validation involving both internal and external validators, aimed at enhancing their reliability and validity.

Moreover, the informed consent process was diligently carried out, ensuring that all participating Social Studies teachers were fully aware of the study's purpose, their rights as participants, and the voluntary nature of their involvement. This ethical foundation was crucial in fostering trust and cooperation among participants and upholding the principles of research integrity throughout the study.

Moving to the data-gathering phase, the finalized survey questionnaires were disseminated among the targeted sample of Social Studies teachers within Calamba City Private Schools. Researchers either personally administered the surveys during scheduled visits to each school or coordinated with school administrators for the distribution process. This phase required meticulous coordination and adherence to protocols to ensure that data collection proceeded smoothly and efficiently. Once data collection was complete, the responses from the survey questionnaires were carefully compiled and tabulated in a systematic manner, laying the groundwork for subsequent data analysis.

Additionally, all completed survey forms were securely stored to protect the confidentiality of participants' responses and maintain the integrity of the data. Throughout these phases, transparency, professionalism, and ethical conduct remained paramount, reflecting the commitment of the research team to uphold the highest standards of research practice.

RESULTS

Research Question 1. What is the level of implementation of the 21st Century teaching strategies among Social Studies teachers in Calamba City private schools in terms of:

1.1 Gen A Teaching Strategies

Table 1.1

Level of Implementation of the 21st Century Teaching Strategies among Social Studies Teachers in terms of Gen A Teaching Strategies

Indicators	Teachers		Students		Composite	
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI
1. Integration of Technology	3.44	FI	3.49	FI	3.47	FI

2. Personalization and Differentiation	3.44	FI	3.46	FI	3.45	FI
3. Collaboration and Communication	3.63	FI	3.49	FI	3.56	FI
4. Multimodal and Interactive Learning	3.56	FI	3.52	FI	3.54	FI
5. Real-World Relevance and Application.	3.50	FI	3.50	FI	3.50	FI
General Composite Assessment	**3.51**	**FI**	**3.49**	**FI**	**3.50**	**FI**

Legend: 3.25-4.00 Strongly Agree - Fully Implemented (FI) 1.75-2.49 Disagree - Partially Implemented (PI)
2.50-3.24 Agree - Implemented (I) 1.00-1.74 Strongly Disagree - Not Implemented (NI)

1.2. Evidence Based-High Impact
Table 1.2

Level of Implementation of the 21st Century Teaching Strategies among Social Studies Teachers in Calamba City Private Schools in terms of Evidence Base/High Impact Teaching Strategies

Indicators	Teachers		Students		Composite	
	X	**VI**	***X***	**VI**	***X***	**VI**
1. Active Learning	3.53	FI	3.54	FI	3.54	FI
2. Cooperative Learning	3.53	FI	3.49	FI	3.51	FI
3. Formative Assessment	3.58	FI	3.51	FI	3.55	FI
4. Differentiated Instructions	3.45	FI	3.48	FI	3.47	FI
5. Classroom Discussion	3.83	FI	3.52	FI	3.68	FI
General Composite Assessment	**3.59**	**FI**	**3.51**	**FI**	**3.55**	**FI**

Legend: 3.25-4.00 Strongly Agree - Fully Implemented (FI) 1.75-2.49 Disagree - Partially Implemented (PI)
2.50-3.24 Agree - Implemented (I) 1.00-1.74 Strongly Disagree - Not Implemented (NI

1.3 Kagan Learning Structure
Table 1.3

Level of Implementation of the 21st Century Teaching Strategies among Social Studies Teachers in Calamba City Private Schools in terms of Kagan Learning Structure

Indicators	Teachers		Students		Composite	
	X	**VI**	***X***	**VI**	***X***	**VI**
1. Round Table	3.75	FI	3.54	FI	3.65	FI
2. Quiz – Quiz Trade	3.50	FI	3.52	FI	3.51	FI
3. Timed-Pair Share	3.78	FI	3.49	FI	3.64	FI
4. Fan N Share	3.75	FI	3.50	FI	3.63	FI
5. Numbered Heads Together	3.75	FI	3.50	FI	3.63	FI
General Composite Assessment	**3.71**	**FI**	**3.51**	**FI**	**3.61**	**FI**

Legend: 3.25-4.00 Strongly Agree - Fully Implemented (FI) 1.75-2.49 Disagree - Partially Implemented (PI)
2.50-3.24 Agree - Implemented (I) 1.00-1.74 Strongly Disagree - Not Implemented (NI)

Research Question 2. What is the teaching performance level among Social Studies teachers in Calamba City private schools in terms of:

2.1 Content Knowledge and Pedagogy
Table 2.1

Teaching Performance Level among Social Studies Teachers in Calamba City Private Schools in terms of Content Knowledge and Pedagogy

Indicators	Teachers		Students		Composite	
	X	VI	X	VI	X	VI
1. Using effective information and communication technology in teaching.	3.81	VG	3.54	VG	3.68	VG
2. Using varied teaching strategies for the 21st century learners.	3.75	VG	3.43	VG	3.59	VG
3. Updating content knowledge through latest research findings and principles in teaching.	3.81	VG	3.48	VG	3.65	VG
4. Developing contextualized and localized instructional materials.	3.69	VG	3.50	VG	3.60	VG
5. Conducting and writing research papers	3.25	VG	3.37	VG	3.31	VG
General Composite Assessment	**3.66**	**VG**	**3.46**	**VG**	**3.56**	**VG**

Legend: 3.25 - 4.00 Strongly Agree – Very Good (VG) 1.75 - 2.49 Disagree – Fair (F)
2.50 - 3.24 Agree – Good (G) 1.00 - 1.74 Strongly Disagree - Poor (P)

2.2 Learning Environment
Table 2.2

Teaching Performance Level among Social Studies Teachers in Calamba City Private Schools in terms of Learning Environment

Indicators	Teachers		Students		Composite	
	X	VI	X	VI	X	VI
1. Maintaining learner's proper discipline in the class.	3.88	VG	3.61	VG	3.75	VG
2. Increasing learners' participation through motivational activities	3.88	VG	3.49	VG	3.69	VG
3. Promoting fairness, respect, and care among learners	4.00	VG	3.59	VG	3.80	VG
4. Handling learners' misbehaviors.	3.88	VG	3.53	VG	3.71	VG
5. Building a harmonious relationship among learners	4.00	VG	3.61	VG	3.81	VG
General Composite Assessment	**3.93**	**VG**	**3.57**	**VG**	**3.75**	**VG**

Legend: 3.25 - 4.00 Strongly Agree – Very Good (VG) 1.75 - 2.49 Disagree – Fair (F)
2.50 - 3.24 Agree – Good (G) 1.00 - 1.74 Strongly Disagree - Poor (P)

2.3 Diversity of Learners
Table 2.3

Teaching Performance Level among Social Studies Teachers in Calamba City Private Schools in terms of Diversity of Learners

Indicators	Teachers		Students		Composite	
	X	VI	X	VI	X	VI
1. Using different teaching strategies responsive to varied learners.	3.75	VG	3.45	VG	3.60	VG
2. Giving the right approach for learners with giftedness and difficulties.	3.81	VG	3.48	VG	3.65	VG
3. Handling learners with special needs.	3.44	VG	3.45	VG	3.45	VG
4. Developing appropriate strategies inclusive for indigenous learners.	3.69	VG	3.42	VG	3.56	VG
5. Handling learners in difficult circumstances like disaster, chronic illness, etc.	3.81	VG	3.46	VG	3.64	VG
General Composite Assessment	**3.70**	**VG**	**3.45**	**VG**	**3.58**	**VG**

Legend: 3.25 - 4.00 Strongly Agree – Very Good (VG) 1.75 - 2.49 Disagree – Fair (F)
2.50 - 3.24 Agree – Good (G) 1.00 - 1.74 Strongly Disagree - Poor (P)

2.4 Curriculum Planning
Table 2.4

Teaching Performance Level among Social Studies Teachers in Calamba City Private Schools in terms of Curriculum Planning

Indicators	Teachers		Students		Composite	
	X	VI	X	VI	X	VI
1. Using variety of resources such as technology to attain learning objectives.	3.81	VG	3.50	VG	3.66	VG
2. Updating and learning the current trends in education curriculum.	3.80	VG	3.55	VG	3.68	VG
3. Collaborating with other professionals to enrich knowledge and learning practice.	3.80	VG	3.44	VG	3.62	VG
4. Aligning teaching methods and assessment tools to learning objectives.	3.87	VG	3.54	VG	3.71	VG
5. Developing effective lesson plans.	3.80	VG	3.47	VG	3.64	VG
General Composite Assessment	**3.78**	**VG**	**3.50**	**VG**	**3.64**	**VG**

Legend: 3.25 - 4.00 Strongly Agree – Very Good (VG) 1.75 - 2.49 Disagree – Fair (F)
2.50 - 3.24 Agree – Good (G) 1.00 - 1.74 Strongly Disagree - Poor (P)

2.5 Assessment and Reporting
Table 2.5

Teaching Performance Level among Social Studies Teachers in Calamba City Private Schools in terms of Assessment and Reporting

Indicators	Teachers		Students		Composite	
	X	VI	X	VI	X	VI
1. Using a variety of assessment tools appropriate for varied learners.	3.75	VG	3.55	VG	3.65	VG
2. Performing test validity, reliability, and item analysis for quality assessment	3.75	VG	3.55	VG	3.65	VG
3. Monitoring and evaluating students' progress and achievement.	3.81	VG	3.51	VG	3.66	VG
4. Using assessment data to improve classroom practice and learning.	3.81	VG	3.55	VG	3.68	VG
5. Effective feed-backing on learners' performance	3.81	VG	3.46	VG	3.64	VG
General Composite Assessment	**3.79**	**VG**	**3.53**	**VG**	**3.66**	**VG**

Legend: 3.25 - 4.00 Strongly Agree – Very Good (VG) 1.75 - 2.49 Disagree – Fair (F)
2.50 - 3.24 Agree – Good (G) 1.00 - 1.74 Strongly Disagree - Poor (P)

2.6 Community Linkages and Professional Engagement
Table 2.6

Teaching Performance Level among Social Studies Teachers in Calamba City Private Schools in terms of Community Linkages and Professional Engagement

Indicators	Teachers		Students		Composite	
	X	VI	X	VI	X	VI
1. Involving parents in their child's education.	3.75	VG	3.38	VG	3.57	VG
2. Linking with government agencies to promote learners' welfare.	3.25	VG	3.47	VG	3.36	VG
3. Contextualizing the lessons in the subject being taught.	3.81	VG	3.47	VG	3.64	VG
4. Learning best practices for a good relationship among school, home, and community.	3.75	VG	3.51	VG	3.63	VG
5. Learning the Code of Ethics for Professional Teachers.	3.88	VG	3.50	VG	3.69	VG
General Composite Assessment	**3.69**	**VG**	**3.47**	**VG**	**3.58**	**VG**

Legend: 3.25 - 4.00 Strongly Agree – Very Good (VG) 1.75 - 2.49 Disagree – Fair (F)
2.50 - 3.24 Agree – Good (G) 1.00 - 1.74 Strongly Disagree - Poor (P)

Research Question 3. Is there a significant relationship between 21st Century Teaching Strategies and teaching performance of Social Studies teachers in Calamba City private schools?

Table 3

Test of Significant Relationship between the 21st Century Teaching Strategies and Teaching Performance of Social Studies Teacher in Calamba City Private Schools

21st Century Teaching Strategies	Teaching Performance of Social Studies Teacher	r value	p value	Remarks	Decision
Generation Alpha	Knowledge Content	.724**	.000	Significant	Reject ho
	Learning Environment	.641**	.000	Significant	Reject ho
	Diversity of Learners	.677**	.000	Significant	Reject ho
	Curriculum Planning	.677**	.000	Significant	Reject ho
	Assessment and Reporting	.700**	.000	Significant	Reject ho
	Community Linkages	.687**	.000	Significant	Reject ho
Evidence Based-High impact	Knowledge Content	.772**	.000	Significant	Reject ho
	Learning Environment	.665**	.000	Significant	Reject ho
	Diversity of Learners	.665**	.000	Significant	Reject ho
	Curriculum Planning	.625**	.000	Significant	Reject ho
	Assessment and Reporting	.705**	.000	Significant	Reject ho
	Community Linkages	.698**	.000	Significant	Reject ho
Kagan Learning Structure	Knowledge Content	.785**	.000	Significant	Reject ho
	Learning Environment	.716**	.000	Significant	Reject ho
	Diversity of Learners	.704**	.000	Significant	Reject ho
	Curriculum Planning	.686**	.000	Significant	Reject ho
	Assessment and Reporting	.754**	.000	Significant	Reject ho
	Community Linkages	.753**	.000	Significant	Reject ho

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed

DISCUSSION

1.1 Gen A Teaching Strategies

Table 1.1

Level of Implementation of the 21st Century Teaching Strategies among Social Studies Teachers in terms of Gen A Teaching Strategies

The 21st Century teaching strategies among Social Studies Teachers in terms of Gen A Teaching Strategies was **Fully Implemented (3.50).** "Collaboration and Communication" which yielded the highest mean score of 3.56 and was interpreted as **Fully Implemented.** However, the indicator "Personalization and Differentiation" yielded the lowest mean scores of 3.45 and was verbally interpreted as **Fully Implemented.**

It implies that teachers are actively addressing students' changing needs through their teaching approaches, recognizing that these demands include critical thinking, problem-solving, digital literacy, and global awareness. This can suggest a dedication to ongoing development and remaining up to date with the finest techniques in teaching. Rather to treating students as passive consumers of knowledge, the emphasis is probably on developing an interesting and dynamic learning environment where they participate actively in their education.

Accordingly, Sewell (2023) mentioned that a substantial change in educational practices and priorities was indicated by the news that social studies professors would be fully implementing 21st-century teaching strategies. By adopting these cutting-edge strategies, teachers radically altered the educational process for their pupils rather than just updating their lesson plans. The complete application of these tactics demonstrated a dedication to fairness and inclusivity in the classroom, going beyond academic preparation. Teachers could better support students with different learning styles and requirements by utilizing technology and a variety of teaching approaches. This guaranteed that all students, regardless of background or ability, had access to high-quality education. Essentially, social studies instructors who fully adopted 21st-century teaching techniques embarked on a revolutionary journey toward more inclusive, dynamic, and student-centered learning environments.

1.2. Evidence Based-High Impact

The 21st Century Teaching Strategies among Social Studies Teachers in terms of Evidence Base/High Impact Teaching Strategies was **Fully Implemented (3.55)** “Classroom Discussion” which yielded the highest mean score of 3.68 was interpreted as **Fully Implemented.** However, the indicator “Active Learning” yielded the lowest mean scores of 3.42 and was verbally interpreted as **Fully Implemented.**

It suggests that this interaction creates a climate in which dissenting viewpoints are valued and even encouraged since they deepen conversations on difficult subjects. The tone for classroom conversations is established by teachers who value courteous communication. Students are more inclined to act respectfully toward their peers when they see their teachers acting that way. This encourages tolerance and open-mindedness by creating a space where people with different viewpoints can voice them without worrying about being mocked or judged.

In the study by Mallilin (2021), students' critical thinking abilities were developed through the effective use of various tactics such as inquiry-based learning and cooperative group projects. This created an environment where different points of view were valued as important contributions to conversations and understanding, rather than merely tolerated. Teachers set the tone for interactions in the classroom by emphasizing polite discourse, which encouraged students to voice their thoughts without worrying about being judged. Additionally, these teaching methods frequently fostered collaboration, helping students understand the value of different viewpoints and benefit from each other. Ultimately, by nurturing these abilities, teachers not only improved

academic learning but also empowered students to become engaged, courteous members of a democratic society capable of earnestly engaging with opposing views and making valuable contributions to their communities.

1.3 Kagan Learning Structure

The 21st Century Teaching Strategies among Social Studies Teachers in terms of Kagan Learning Structure was **Fully Implemented (3.61).** "Time Paired Share" which yielded the highest mean score of 3.71 and was interpreted as **Fully Implemented.** However, the indicator "Quiz-Quiz Trade" yielded the lowest mean scores of 3.51 and was verbally interpreted as **Fully Implemented.**

It implies that in establishing a classroom culture based on mutual respect and understanding can be achieved through encouraging attentiveness and appreciation for the contributions of peers. This fosters a culture of open communication and teamwork among the pupils. Active listening encourages a greater comprehension of the subject matter being covered. A deeper learning experience results when students genuinely interact with the contributions of their peers. This increases the likelihood that they will understand various viewpoints, ideas, and concepts. Students who actively listen to others are able to comprehend the perspectives and experiences of others, which promotes empathy. Additionally, it gives children the confidence and self-esteem they need by empowering them to feel heard and validated.

In LaMorte (2022), students gained essential skills that they could use both inside and outside of the classroom as they actively practiced listening. Additionally, encouraging active listening made students more engaged in class discussions and fostered a lively atmosphere where various perspectives were discussed and examined. Finally, allowing children to comprehend and value several points of view while feeling heard and validated promoted empathy and empowerment. In conclusion, encouraging active listening developed social and emotional competencies that were essential for success in a variety of spheres of life, in addition to improving academic learning.

Research Question 2. What is the teaching performance level among Social Studies teachers in Calamba City private schools in terms of:

2.1 Content Knowledge and Pedagogy

The teaching performance level among Social Studies Teachers as to Content Knowledge and Pedagogy was **Very Good (3.56).** The indicator "Using effective information and communication technology in teaching" obtained the highest mean score of 3.68 and was interpreted as **Very Good.** However, the indicator "Conducting and writing research papers" yielded the lowest mean scores of 3.31 and was verbally interpreted as **Very Good.**

It indicates it is advantageous to use information and communication technology (ICT) into instructional strategies. The high mean indicates that ICT improves educational outcomes when used wisely. Higher levels of student engagement and interaction with the curriculum is probably fostered by effective ICT use. This could be accomplished through virtual simulations, internet forums, interactive multimedia content, etc. A more productive and efficient learning environment for both teachers and students may also result from effective ICT integration. Using technology may make tasks like grading, giving feedback, and obtaining information more efficient.

In relation to Clavarall (2022), this accomplishment showed how well ICT integration worked and its positive impact on various facets of education. Teachers who used ICT effectively experienced increased student involvement, interaction, and satisfaction with the educational process. Furthermore, it indicated that education became more flexible, accessible, and personalized for each student. Additionally, by streamlining tasks such as grading and access to resources, efficient ICT integration boosted productivity and efficiency for both educators and students. Moreover, prioritizing ICT in the classroom equipped students with critical thinking and digital literacy skills, which are essential for navigating the challenges of the digital age.

2.2 Learning Environment

The teaching performance level among Social Studies Teachers as to Learning Environment was Very Good (3.75). The indicator “Building a harmonious relationship among learners” attained the highest mean score of 3.81 and was interpreted as Very Good. However, the indicator “Increasing learners’ participation through motivational activities” attained the lowest mean scores of 3.69 and was verbally interpreted as Very Good.

It implies that educators in this field are skilled at successfully imparting their subject matter. They probably employ a variety of instructional techniques, materials, and approaches to get kids interested in learning. A "very good" learning environment suggests that students are motivated, at ease, and encouraged while they pursue their education. Students are encouraged to participate, work together, and think critically in this encouraging environment. Higher levels of student engagement and accomplishment are frequently correlated with a supportive learning environment. When students perceive that their learning environment is encouraging and stimulating, they are more likely to pay attention, participate actively in class, and be driven to learn.

In accordance with Kagan (2024), a high degree of teaching effectiveness could only be attained by educators working together, continuing their professional development, and being open to modifying their lesson plans to better suit the needs of a varied student body. The statement subtly acknowledged the work of the school administration, teachers, and support personnel in creating a conducive learning environment by praising the quality of Social Studies teachers in this area. It underscored the significance of prioritizing the learning environment and the caliber of instruction in

educational institutions. This was evidence of the commitment of teachers and the transformational potential of effective teaching methods in shaping students' futures.

2.3 Diversity of Learners

The teaching performance level among Social Studies Teachers as to **Diversity of Learners** was **Very Good (3.58)**. The indicator “Giving the right approach for learners with giftedness and difficulties” gained the highest mean score of 3.65 and was interpreted as **Very Good.** However, the indicator “Handling learners with special needs” garnered the lowest mean scores of 3.45 and was verbally interpreted as **Very Good.**

It implies that these educators are skilled at modifying their lesson plans, resources, and strategies to suit the needs of pupils with different learning preferences, backgrounds, and skill levels. In order to create an inclusive learning environment where all students can succeed despite their differences, this is essential. It also speaks well of the instructors' dedication to meeting the educational demands of a varied student body and their professional abilities.

In line with Alvarez (2020), classrooms became more and more like microcosms of the global community in which we lived, with students from diverse socioeconomic, linguistic, and cultural backgrounds. In addition to improving learning outcomes, teachers who were adept at navigating this diversity also helped children develop a sense of inclusivity and respect for one another. Proficiency in diversity management required not only subject matter expertise but also a deep understanding of instructional approaches tailored to various learning capacities and styles. It also required empathy, cultural awareness, and the ability to establish a safe, welcoming environment where every child felt valued and encouraged to participate. While acknowledging this achievement, it was important to remember that maintaining a high standard of performance in diversity management was an ongoing effort.

2.4 Curriculum Planning

The teaching performance level among Social Studies Teachers as to Curriculum Planning was **Very Good** (3.64). The indicator “Aligning teaching methods and assessment tools to learning objectives” obtained the highest mean score of 3.71 and was interpreted as **Very Good.** However, the indicator “Collaborating with other professionals to enrich knowledge and learning practice” garnered the lowest mean scores of 3.62 and was verbally interpreted as **Very Good.**

It implies that high performers are able to instruct learners in the subject in an efficient manner. They probably have the ability to make difficult ideas understandable, involve pupils in educational activities, and foster a supportive learning atmosphere. A high degree of teaching performance indicates that educators are successfully coordinating their lessons with the curriculum's aims and objectives. They are skilled in creating classes that address these learning objectives and have a thorough understanding of what pupils should learn. Effective teachers are frequently more flexible.

Based on changing educational standards, new trends, or the needs of their students, they can modify their pedagogical approaches. This flexibility guarantees that the curriculum will always be current and sensitive to the demands of the students.

As stated in Brau (2020), adhering to a set curriculum, social studies teachers were skilled in creating courses that aligned with the goals of the curriculum, ensuring that every teaching opportunity significantly advanced student's overall growth. Furthermore, a performance level this impressive suggested a dynamic approach to instruction. Instead of being restricted by memorization techniques, these teachers were adaptable and creative, customizing their lessons to meet the requirements and styles of a wide range of students.

The flexibility in the curriculum ensured that it remained interesting and current, fostering a culture of inquiry and discovery in the classroom. This accomplishment spoke volumes about the high professional standards of Social Studies teachers, showcasing their dedication to lifelong learning and growth beyond the curriculum's confines. By continuously adapting and innovating, these educators created more engaging educational experiences for their students, nurturing curiosity and enhancing overall learning outcomes.

2.5 Assessment and Reporting

The teaching performance level among Social Studies Teachers as to Assessment and Reporting was **Very Good** (3.66). The indicator "Using assessment data to improve classroom practice and learning" acquired the highest mean score of 3.68 and was interpreted as **Very Good.** However, the indicator "Effective feed-backing on learners' performance" yielded the lowest mean scores of 3.64 and was verbally interpreted as **Very Good.**

Table 2.5

It suggests that social studies instructors in private schools in Calamba City are using methods, techniques, and strategies that work well to improve student learning and engagement. It implies that the teachers have set up explicit and open processes for informing pupils and their parents/guardians of their evaluation outcomes. By doing this, it is made sure that everyone who could be affected by the students' success is aware of it.

Conforming to Almagro (2023), the component of reporting that built a connection between the classroom and the community at large was equally important. Reporting procedures that were clear and educational encouraged parents, stakeholders, and students to participate fully in the educational process. Teachers fostered a culture of collaboration and support, allowing constructive dialogue and enabling informed decision-making by ensuring that assessment outcomes were communicated clearly. The phrase spoke to greater societal objectives in addition to the direct ramifications for the educational context. The foundation of societal advancement, equity, and empowerment was education. Teachers who performed at a very high level demonstrated a shared

commitment to the development of human capital, which paved the way for the creation of informed, competent, and politically involved citizens. It emphasized how important institutional support, ongoing professional growth, and policy frameworks were.

2.6 Community Linkages and Professional Engagement

The teaching performance level among Social Studies teachers as to Community Linkages and Professional Engagement was **Very Good** (3.58). The indicator “Learning the Code of Ethics for Professional Teachers” yielded the highest mean score of 3.69 and was interpreted as **Very Good.** However, the indicator “Linking with government agencies to promote learners’ welfare” attained the lowest mean scores of 3.36 and was verbally interpreted as **Very Good.**

It indicates that social studies instructors in private schools in Calamba City interact with the community in an active way to enhance their students' educational experiences. This could include working with neighborhood organizations, having speakers come in, planning field trips, or introducing regional topics into the curriculum. By fostering a sense of relevance and connectedness, these initiatives help students find greater meaning in their education. High levels of community connections suggest that pupils are being encouraged to develop civic engagement and awareness. Through the integration of classroom instruction with real-world concerns and community activities, educators facilitate students' growth in understanding and awareness of their civic responsibilities. Increased civic involvement and participation in neighborhood projects and decision-making processes may result from this.

As claimed by Kim (2019), the focus on professional engagement drew attention to how crucial innovation, teamwork, and ongoing learning were to the field of education. In today's globalized world, social studies educators who actively participated in professional development activities, interacted with their peers, and contributed to educational debates were better able to meet the changing demands of their students and address challenging issues. Within the educational community, professional engagement fostered a culture of lifelong learning and development, in addition to enhancing teaching effectiveness. Beyond its direct impact on education, the statement spoke to broader issues of social cohesion, community building, and democratic engagement. Education was not confined to the classroom; it also served to empower individuals and promote positive social change.

Research Question 3. Is there a significant relationship between 21st Century Teaching Strategies and teaching performance of Social Studies teachers in Calamba City private schools?

A significant relationship was present between 21st Century teaching strategies and teaching performance of Social Studies teacher. As shown in the probability values were all 0.000 which was less than the level of significance at .05, thus the null hypothesis was rejected. There was moderate to high positive correlation 21st Century teaching strategies and teaching performance as shown in the r values between .600 to .800.

It indicates that there is an extensive relation between the 21st Century Teaching Strategies and Teaching Performance. This also indicated that the more, the 21st Century Teaching Strategies, the better the Teaching Performance.

It emphasizes how instructional techniques in social studies education need to change. It gave attention to how crucial it was to incorporate contemporary teaching strategies that prioritize digital literacy, teamwork, critical thinking, and problem-solving. Teachers must modify their methods of education to meet the needs of the 21st-century learning environment.

Based on Ononiwu (2023), by adopting cutting-edge pedagogies like inquiry-based learning, project-based learning, and technology integration, educators cultivated critical thinking, teamwork, and adaptability, in addition to delivering knowledge. This demonstrated the transformative potential of pedagogical approaches that transcended conventional didactic techniques. Furthermore, the link pointed to a mutually beneficial relationship between the adoption of modern teaching methods and the effectiveness of education. Teachers were in a better position to engage students and promote deeper comprehension when they used 21st-century tactics to create dynamic and interactive learning environments. Consequently, this led to improved teaching effectiveness as measured by various criteria, including student achievement, classroom engagement, and the development of critical thinking skill.

Conclusions

The following conclusions are reached in light of the study's aforementioned findings:

1. That the Social Studies Teachers use 21st Century teaching Strategies in their classroom is to modify instructional strategies to fit the changing requirements and preferred methods of learning of every generation. This accomplishment shows a dedication to teaching kids digital literacy, critical thinking, and global citizenship so they have the tools they need to prosper in a world that is becoming more interconnected by the day.

2. That teachers who have been using 21st-century teaching methodologies have noticed a considerable rise in student engagement. Students' interest and passion for learning about historical events, civilizations, and societal challenges have been piqued by engaging in activities like multimedia presentations, online research projects, and cooperative debates. Teachers have seen notable gains in their students' critical thinking abilities by incorporating interactive learning environments and technological resources into their teaching. Students now routinely analyze original sources, weigh many points of view, and synthesize data

from a variety of digital sources, which encourages deeper comprehension and analysis.

3. That teachers in private schools usually use interactive teaching strategies to encourage pupils to participate actively in their education. They include debates, group discussions, and practical exercises to promote the development of communication, teamwork, and critical thinking abilities. At their classes, many social studies teachers at private schools place a high value on inclusivity and diversity. They employ inclusive teaching strategies, which include utilizing a variety of teaching resources, appreciating and respecting the unique experiences and viewpoints of their students, and providing chances for every student to participate and thrive.

4. That the association between a social studies teacher's success in the classroom and 21st-century teaching methodologies is significant since it reveals a significant shift in educational paradigms. This relationship highlights the critical significance that cutting-edge pedagogical strategies have in creating successful learning environments in the field of social studies education.

Recommendations

The researcher suggests the following in light of the above-mentioned findings and conclusions:

1. Technology Integration Specialists or Educational Technology Coordinators may promote the use of online resources and tools that facilitate interactive education. These may be collaborative projects utilizing educational apps and platforms, virtual reality field trips, or online simulations of historical events. They may stress the value of relating what is learned in the classroom to current affairs and concerns in the real world. In order to promote critical thinking abilities and global citizenship, they may also encourage pupils to examine current events through a historical or global perspective.

2. Administrators and Professional Development Coordinators may acknowledge social studies teachers who demonstrate a solid grasp of their subject and efficient teaching strategies. They may provide enrichment workshops with these knowledgeable teachers as the leaders, with an emphasis on the sharing of knowledge, tactics, and resources among peers. Also, they may plan workshops that address a range of social studies topics, such as political systems, concepts of geography, historical events, and cultural practices. Every module may go deeply into the material while offering useful teaching strategies and interesting resources. Moreover, they may incorporate practical exercises and case studies to demonstrate efficient teaching techniques in

the workshops. Lastly, they may urge participants to engage in dialogue, brainstorm, and work together to create creative strategies for instructing difficult subjects.

3. Librarians or Media Specialists may provide educators with a range of primary and secondary resources pertaining to the selected subjects. These may be documents from the past, videos, books, or articles. They may also encourage a climate in the classroom where students are at ease sharing their thoughts and having meaningful conversations. Additionally, they may stress the value of providing constructive criticism and engaging in active listening.

4. Professional Development Coordinators or Curriculum Specialists may organize workshops for professional development that will teach educators about the fundamentals and advantages of authentic assessment. With this, they may give students examples of assessment tasks that require them to use their social studies knowledge, such as research projects, role-playing games, and discussions. They have to make sure that the learning objectives and assessments are in line with each other. They should work together with educators to create assessment assignments that gauge students' aptitude for critically thinking in real-world situations, analyzing historical events, and assessing sources. To track students' progress and give timely feedback, teachers should receive training on the use of formative assessment tools like exit tickets, quizzes, and class discussions.

5. Community Engagement Coordinators may start a needs assessment and community mapping exercise to find historical places, cultural icons, and local resources that can improve the Social Studies curriculum. They have to involve parents, community members, educators, and students in this process to make sure that all points of view are taken into account. Also, they may invite guest lecturers or presenters for Social Studies classrooms from the local community, local historians, cultural specialists, and government leaders. These people have direct information, personal experiences, and insightful opinions about the history, culture, and current events of the community.

Compliance with Ethical Standards

The researcher ensured that the ethical consideration was appropriately observed in all aspects of the research process. The objectives of the inquest were conveyed comprehensively to the school heads and teachers. School heads and teachers were acquainted through the letter with the task they would be extending for the success of the study. It also emphasized they would not be obliged to contribute to the survey, especially if it is against their will. The collected questionnaires will be handled accordingly to ensure the confidentiality of the information and safeguard the identities of the respondents. Likewise, the works of different bodies in this study were recognized and referenced.

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ACCEPTABILITY AND MARKETABILITY OF POWDERED GUYABANO LEAVES AND DRIED CARROTS AS INGREDIENTS IN BISCUITS (CARROBANO BISCUITS)

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ABSTRACT

This study attempted to determine the acceptability and marketability of powdered guyabano leaves and dried carrots as ingredients in biscuits in different proportions (5g, 10, 15g) at Sanchez Mira School of Arts and Trades and Barangay Lemu Norte, Enrile, Cagayan during the school year 2019-2020. Experimental and descriptive methods of research were used with the survey questionnaire as the main gathering instrument. The study used the Nine-Point Hedonic rating scale and Five-point Likert rating scale. The statistical tools used were weighted mean and ANOVA. A sensory evaluation was conducted with 90 respondents comprising baking students, food experts, and consumers. The 5 g proportion came as Extremely Acceptable among the three groups of respondents. Physicochemical analysis Carrobano biscuits have a moderate content of carbohydrates, moisture, protein, fiber, fat, ash, and Ph resulting in a healthier snack. For the marketability 5g and 10g were rated as Very High Potential, because the production of the materials meets the demands of market supply and consumers. There were no significant differences in the evaluation of the respondents on the acceptability of carrobano biscuits in three different proportions in terms of aroma and color, for 5g and 15g proportions, there were no significant differences except in terms of texture. There was a significant difference for the 10 g proportion in the evaluation of the respondents in terms of appearance and taste. For marketability, there were no significant differences in the evaluation of the respondents in terms of consumer demand and production cost.

Keywords: *Powdered Guyabano Leaves, Dried Carrots, Sensory evaluation, Physicochemical Analysis, Carrobano Biscuits.*

INTRODUCTION

Nowadays, people are focusing on herbal plants especially those which are common in the environment. The use of herbal medicine is an integral part of the Philippine culture. Within this culture, various plants and vegetables have been popularly studied to determine their medicinal properties. The development of nutritious food products provides everyone with specific health benefits. Everyone wants to live a healthy lifestyle. Discovering and introducing new products with the use of herbal medicine is thus, necessary. In addition to this, the researcher wanted to investigate other native plants which could help prevent health problems. For this reason, the researcher aimed to produce a new food product from Guyabano (Anona muricata linn) and Carrot (Daucus carota).

According to Morton (2018), guyabano (anona muricata linn) fruit is a green, pear-shaped fruit covered with soft spines. The matured guyabano or soursop fruit weighs 2 to 5 kilograms. Guyabano fruits are ovoid and large with thin skin and soft edible whitish pulp that is fleshly and fibrous. The size ranges from 10 to 30 cm long and up to 15 centimeters width. The Guyabano fruit has a distinct sour citrus taste and sweet-sour flavor that tastes like pineapple and strawberry.

Another ingredient which was used in the study is carrots. As defined by Bjarnadottir (2019), “carrot” comes from the Greek word “Karoton”. Carrots are perhaps best known for their rich supply of the antioxidant nutrients that was actually named for them: beta-carotene and vitamin A which help to slow down the development of heart disease and plays a protective role against some diseases. Some health professionals say that one should eat dark green or deep orange fruits and vegetables at least every other day. Most of the fruits and vegetables can be eaten raw. Like carrots, this simple fruit has vitamin A which is essential for our eye, carotene and some trace minerals are found on the surface of the fruit.

However, these delicious root vegetables are the vitamin source not only of beta-carotene but also of a wide variety of antioxidants and other health-supporting nutrients. According to Banjo (2018), the areas of antioxidant benefits, cardiovascular benefits, vision health benefits, and anti-cancer benefits are the best researched areas of health research with respect to the dietary intake of carrots. In addition, carrots and guyabano leaves can kill cancer cells.

Fabiyi, et. al. (2015) stated that a lack of adequate information about the nutritional value and health benefits of carrots may not allow people to see the need of carrot intake. One needs to have knowledge of the food value of carrots to be well nourished and be in good health. Carrot contains elements that keep us healthy in many ways. Therefore, there is a need for both children and adults to consume carrots every day and the government’s awareness campaign about the usefulness of carrots will contribute immensely to people’s health. Integrating nutrition education into the curriculum of primary, secondary, and tertiary institutions will also promote healthy lifestyles and good dietary habits.

Mishra (2019) stated that biscuits are becoming a more important part of a diet. It is one of the low-cost processed foods, which is most widely consumed. Apart from the good taste, these foods with substantial energy having wholesome and nutritious quality are available at a reasonable price. It has a certain advantage, easy to use at home, even during travel, easily available in a massive variety of shapes, and appeals to all ages.

The growing consumer demand for food with nutritional and sensory quality as well as the functional claim has called for research to develop new products that include the nutritional and functional of the product, but it also considers consumer acceptance.

In this study, Guyabano and Carrots were used as ingredients in biscuits. Biscuits are derived from the Latin words *Bis* (meaning twice) and *Coctus* (cooked or baked) according to Kandan (2019). The word “Biscotti” is also a generic term for cookies in Italian. It is unleavened and has a hard and thin texture because of its low water content.

The researcher was motivated and interested to further explore and develop the combination of guyabano powder leaves and carrots in order to make natural and nutritious snacks like biscuits since adding these ingredients can turn the biscuits into a vibrant green-orange color which can be more appetizing. It can also boost the nutritional value of the biscuits as it supplies essential vitamins and minerals. In addition, this research was conducted to contribute to the growth of experimental food products that can be popularly served and appreciated on the table by locals, both children and adults, because of their nutritive value.

Research Questions

This study attempted to determine the acceptability and marketability of powdered guyabano leaves and dried carrots as ingredients in biscuits (Carrobano Biscuits) in different proportions at Sanchez Mira School of Arts and Trades and Barangay Lemu Norte, Enrile, Cagayan during the school year 2019- 2020.

More specifically, this study sought answers to the following questions:

1. How did the baking students, consumers, and food experts evaluate the acceptability of powdered guyabano leaves and dried carrots as ingredients in biscuits with proportions of 5 grams, 10 grams, and 15 grams in terms of the following criteria?
    - 1.1. Appearance
    - 1.2. aroma
    - 1.3. taste
    - 1.4. texture
    - 1.5. Color

2. Were there significant differences in the evaluations of the three groups of respondents on the prepared three different sets in grams of powdered guyabano leaves and dried carrots as ingredients of biscuits based on the given criteria?

3. What was the physicochemical analysis of Carrobano Biscuits?

    3.1. Carbohydrates
    3.2. Ph
    3.3 Water/ Moisture

4. What was the level of marketability of the Carrobano Biscuits with the different proportions as perceived by the different groups of respondents in terms of:
    4.1. consumer demand;
    4.2. supply availability; and
    4.3. production cost?

5. Were there significant differences in the evaluation of the different groups of respondents on the level of marketability of guyabano powdered leaves and dried carrots as ingredients in making biscuits with 5 g, 10 g, and 15 g proportions?

6. What were the comments and suggestions of the three groups of respondents to further improve the production of biscuits with powdered guyabano leaves and dried carrots?

METHODOLOGY

The experimental method was used in this study to determine the acceptability of produced biscuits using guyabano powdered leaves and dried carrots as ingredients to arrive at a more precise end result. According to Dragger (2018), experimental research includes manipulating a factor in under controlled conditions hence, considered as objective, systematic, and controlled investigation to predict and control phenomena and examine probability and cause among selected variables. As per variety, experimental design is a powerful design for testing hypotheses of causal relationships or effects among variables. The study also utilized a descriptive method of research, which according to Drager, always considers any data observable by the researcher. This was also used to determine the level of satisfaction of respondents with the finished product. Sources of Data

This study was conducted in Brgy. Lemu Norte, Enrile, Cagayan, and Sanchez Mira School of Arts and Trades, Sanchez Mira, Cagayan, during the school year 2019-2020. The data of this study were obtained from 90 respondents, particularly, 30 baking students, 30 consumers, and 30 food experts.

Data Gathering Procedure

Permission was first sought from the Barangay captain and the school principal as well. The researcher prepared a letter addressed to the barangay captain and the school principal stating her purpose and objectives. Upon the approval of the request, a taste test was conducted. Questionnaire checklists were prepared and distributed to respondents. The finished products were subjected to sensory evaluation. The

respondents were properly oriented on what and how to evaluate the product using the questionnaire. They were also asked to taste the samples. Data on the appearance, aroma, color, taste, and texture of each treatment were collected and decoded subject to statistical analysis. The researcher personally collected the questionnaires tabulated and analyzed the data and interpreted the results.

Data Gathering Instrument

A survey questionnaire checklist was used to collect data for this study. This was validated and checked by ten experts. The checklist was used to elicit evaluation from the 90 respondents on the acceptability and marketability of biscuits with powdered guyabano leaves and dried carrots. It was also used to determine the degree of satisfaction in terms of the given variables likewise to gain comments and suggestions for further improvements. The 9-point Hedonic Scale was used to evaluate the acceptability of the finished product, while the Five-Point Likert scale was used to determine its marketability.

Statistical Treatment of Data

The following statistical tools were used to analyze the data that were gathered.

Weighted Mean. This was used to determine the level of acceptability and marketability of the carrobano biscuits in terms of appearance, aroma, taste, texture, and color.

9-Point Hedonic Scale

Range	Rating Score	Descriptive Rating
8.50 - 9.00	9	Extremely Agreeable (EA)
7.50 - 8.49	8	Very Agreeable (VA)
6.50 - 7.49	7	Moderately Agreeable (MA)
5.50 - 6.49	6	Slightly Agreeable (SA)
4.50 - 5.49	5	Fairly Agreeable (FA)
3.50 - 4.49	4	Slightly Disagreeable (SD)
2.50 - 3.49	3	Moderately Disagreeable (MD)
1.50 - 2.49	2	Very Disagreeable (VD)
1.00 - 1.49	1	Extremely Disagreeable (ED)

The Five-Point Likert's scale was used to determine the marketability of the finished product.

Five-Point Likert's Scale

Scale	Range	Verbal Description
5	4.50 – 5.00	Very High Potential (VHP)
4	3.50 – 4.49	Highly Potential (HP)

3	2.50 – 3.49	Moderate Potential (MP)
2	1.50 – 2.49	Low Potential (LP)
1	1.00 – 1.49	Very Low Potential (VLP)

Analysis of Variance (ANOVA). This was used to determine if there was a significant difference in the evaluation of the three groups of respondents on the acceptability and marketability of powdered guyabano leaves and dried carrots with 5 g, 10 g, and 15 g proportions.

RESULTS AND DISCUSSION

Respondents' Evaluation on the Acceptability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with Proportions of 5 g, 10 g, and 15 g for each of the Ingredients.

The evaluations of the three groups of respondents on the acceptability of baked biscuits with proportions of 5 grams, 10 grams, and 15 grams in terms of their appearance, aroma, color, taste, and texture are shown in Tables 1-9.

Table 1
Respondents' Evaluations on the Acceptability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with 5 g Proportion

Criteria	Respondents					
	Baking Students		Food Experts		Consumers	
	OWM	VI	OWM	VI	OWM	VI
a. Appearance	8.43	VA	8.73	EA	8.58	EA
b. Aroma	8.75	EA	8.87	EA	8.81	EA
c. Taste	8.63	EA	8.94	EA	8.79	EA
d. Texture	8.45	VA	8.61	EA	8.50	EA
e. Color	8.68	EA	8.65	EA	8.61	EA
Grand Weighted Mean	**8.59**	**EA**	**8.76**	**EA**	**8.66**	**EA**

Note: OWM – Overall Weighted Mean

The data revealed that generally, baking students, food experts, and consumer respondents rated the biscuits as **Extremely Agreeable (EA)** as indicated by its grand weighted mean ratings of 8.59, 8.76, and 8.66, respectively.

Moreover, the food experts and consumer respondents rated all the criteria as **Extremely Agreeable (EA).** The findings imply that the three groups of groups of respondents are particularly satisfied with the biscuit's taste and aroma.

Table 2
Respondents' Evaluations on the Acceptability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with 10 g Proportion

Criteria	Respondents					
	Baking Students		Food Experts		Consumers	
	OWM	VI	OWM	VI	OWM	VI
a. Appearance	8.22	VA	8.69	EA	8.47	VA
b.						
c. Aroma	8.49	VA	8.50	EA	8.53	EA
d. Taste	8.39	VA	8.63	EA	8.49	VA
e. Texture	8.39	VA	8.57	EA	8.43	VA
f. Color	8.47	VA	8.59	EA	8.49	VA
Grand Weighted Mean	**8.39**	**VA**	**8.60**	**EA**	**8.48**	**VA**

The data in Table 2 revealed that the baking students and consumer respondents rated the biscuits as **Very Agreeable (VA)** as evidenced by its grand weighted mean ratings of 8.39 and 8.48, respectively, while the food expert respondents' evaluation was 8.60, verbally interpreted as **Extremely Agreeable (EA).**

More specifically, the baking student respondents rated all the criteria as **Very Agreeable (VA),** while the consumer respondents rated the appearance, taste, texture, and color as **Very Agreeable (VA)** and aroma as **Extremely Agreeable (EA).**

On the other hand, the food experts rated all the criteria as **Extremely Agreeable (EA)** which means that the respondents are satisfied with the 10 g proportion.

Table 3
Respondents' Evaluations on the Acceptability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with 15 g Proportion

Criteria	Respondents					
	Baking Students		Food Experts		Consumers	
	OWM	VI	OWM	VI	OWM	VI
a. Appearance	8.38	VA	8.61	EA	8.53	EA
b. Aroma	8.18	VA	8.12	VA	8.19	VA
c. Taste	8.07	VA	8.15	VA	8.11	VA
d. Texture	8.14	VA	8.56	EA	8.27	VA
e. Color	8.33	VA	8.39	VA	8.33	VA
Grand Weighted Mean	**8.22**	**VA**	**8.37**	**VA**	**8.29**	**VA**

As can be observed in Table 3, the three groups of respondents evaluated the biscuits with 15 g proportion with grand weighted mean ratings of 8.22, 8.37, and 8.29, respectively, verbally interpreted as **Very Agreeable (VA).**

In terms of appearance, the food experts and consumer respondents agreed that it was **Extremely Agreeable (EA).** The aroma, taste, and color were generally rated as **Very Agreeable (VA),** while texture was evaluated as **Very Agreeable (VA)** by baking students and consumer respondents, and **Extremely Agreeable (EA)** by the food expert respondents.

These data imply that the product with 15 g proportion although acceptable, can still be further improved to meet the satisfaction of respondents.

Summary of Respondents' Evaluations on the Acceptability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with 5 grams, 10 grams, and 15 grams Proportion.

Table 4
Summary of the Respondents' Evaluations of the Acceptability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with 5 g, 10 g and 15 g Proportions

Proportions	Respondents					
	Baking Students		Food Experts		Consumers	
	OWM	VI	OWM	OWM	VI	OWM
5 g	8.59	EA	8.76	EA	8.66	EA
10 g	8.39	VA	8.60	EA	8.48	VA
15 g	8.22	VA	8.37	VA	8.29	VA
Grand Weighted Mean	**8.40**	**VA**	**8.58**	**EA**	**8.48**	**VA**

Summary. Table 4 presents the summary of the overall grand weighted mean on the respondents' evaluations on the acceptability of powdered guyabano leaves and dried carrots as ingredients in biscuits with 5 g, 10 g, and 15 g proportions.

The data revealed that the baking students and consumer respondents rated the acceptability of the biscuits as **Very Agreeable (VA)** as evidenced by the grand weighted mean ratings of 8.40 and 8.48, while the food expert respondents evaluated it with a grand weighted rating of 8.58, verbally interpreted as **Extremely Agreeable (EA).**

More specifically, the three groups of respondents rated the 5 g proportion as **Extremely Agreeable (EA),** while for the 10 g proportion, both the baking students and consumer respondents rated it as **Very Agreeable (VA)**. On the other hand, the food expert respondents rated the 10 g proportion as **Extremely Agreeable (EA).** For the 15 g proportion, the three groups of respondents rated it as **Very Agreeable (VA).**

It can be deduced that the three groups of respondents preferred the biscuits with the 5 g proportion since it obtained the highest grand weighted mean rating as compared with the other proportions.

Test of Significant Differences in the Evaluations of the Three Groups of Respondents on the Powdered Guyabano Leaves and Dried Carrots as Ingredients of Biscuits with 5 g, 10 g and 15 g Proportions

The computed results of the difference in the evaluation of the baking students, food experts, and consumer respondents on the acceptability of powdered guyabano powdered leaves and dried carrots with 5 g, 10 g, and 15 g proportions are as shown in Tables 5-9.

Table 5 shows the test of significant difference in the respondents' evaluations on the acceptability of powdered guyabano powdered leaves and dried carrots with 5 grams, 10 grams, and 15 grams proportions in terms of appearance.

Table 5
Analysis of Variance on Respondents' Evaluations on the Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits Regarding to Appearance

P	Source of Variation	df	SS	MS	$F_{computed}$ Value	$F_{critical}$ Value (α=5%)	Decision	Interpretation
5g	Between Groups	2	1.41	0.71	2.79	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	22.03	0.25				
10g	Between Groups	2	3.27	1.64	5.60	3.10	Reject the Ho	Significant
	Within Groups	87	25.39	0.29				
15g	Between Groups	2	0.83	0.42	1.08	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	33.50	0.39				

Legend: P – Proportion df – Degrees of Freedom SS – Sum of Square-
MS – Mean Squares Ho – Null Hypothesis

It means that there are no significant differences in the evaluations of the three groups of respondents on the 5 g and 15 g proportions except in 10 g proportion, in terms of appearance. This implies that the three groups of respondents have the same assessment on the biscuits with 5 g and 15 g proportion, but they differ in the biscuits with the 10 g proportion.

Table 6 shows the test of significant difference in the respondents' evaluations on the acceptability of powdered guyabano powdered leaves and dried carrots with 5 g, 10 g, and 15 g proportions in terms of aroma.

Table 6
Analysis of Variance of Respondents' Evaluations on the Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits Regarding to Aroma

P	Source of Variation	df	SS	MS	$F_{computed}$ Value	$F_{critical}$ Value (α=5%)	Decision	Interpretation
5g	Between Groups	2	0.22	0.11	1.58	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	5.97	0.07				
10g	Between Groups	2	0.03	0.02	0.06	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	23.50	0.27				
15g	Between Groups	2	0.09	0.05	0.08	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	52.51	0.60				

It can be observed in Table 6 that the computed F values of 1.58, 0.06 and 0.08 are smaller than the critical F value of 3.10. At the 5% level of significance, the statistical decision is not to reject the null hypothesis. It indicates that there are no significant differences in the evaluations of the three groups of respondents on the three different proportions of powdered guyabano leaves and dried carrots as ingredients in biscuits regarding aroma.

This implies that the three groups have similar perceptions on the biscuits with powdered guyabano leaves and dried carrots in terms of aroma.

Table 7 shows the test of significant difference in the respondents' evaluations on the acceptability of powdered guyabano powdered leaves and dried carrots with 5 g, 10 g, and 15 g proportions in terms of taste.

Table 7
Analysis of Variance of Respondents' Evaluations on the Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits Regarding to Taste

P	Source of Variation	df	SS	MS	$F_{computed}$ Value	$F_{critical}$ Value (α=5%)	Decision	Interpretation
5g	Between Groups	2	1.47	0.74	2.45	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	26.15	0.30				
10g	Between Groups	2	2.17	1.09	3.81	3.10	Reject the Ho	Significant
	Within Groups	87	24.83	0.29				
15g	Between Groups	2	0.11	0.06	0.08	3.10		Not Significant

	Within Groups	87	59.42	0.68			Fail to Reject the Ho	

As clearly shown in Table 7, the computed F values of 2.45 for the 5 g proportion and 0.08 for the 15 g proportion are lower than the critical F value of 3.10. At the 5% level of significance, the statistical decision is not to reject the null hypothesis. As for the 10 g proportion, the computed F value of 3.81 is greater than the critical F value, hence, the decision is to reject the null hypothesis. It means that there are no significant differences in the evaluations of the three groups of respondents on the 5 g and 15 g powdered guyabano leaves and dried carrots as ingredients in biscuits except for the 10 g proportion.

It can be inferred that the three groups of respondents have the same impression on the 5 g and 15 g proportions except on the 10 g proportion.

Table 8 shows the test of significant difference in the respondents' evaluations on the acceptability of powdered guyabano powdered leaves and dried carrots with 5 g, 10 g, and 15 g proportions in terms of aroma.

Table 8
Analysis of Variance of Respondents' Evaluations on the Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits Regarding to Texture

P	Source of Variation	df	SS	MS	$F_{computed}$ Value	$F_{critical}$ Value (α=5%)	Decision	Interpretation
5g	Between Groups	2	0.40	0.20	0.63	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	27.51	0.32				
10g	Between Groups	2	0.55	0.28	1.16	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	20.64	0.24				
15g	Between Groups	2	2.78	1.39	4.01	3.10	Reject the Ho	Significant

It can be gleaned from Table 24 that the computed F values of 0.63 for the 5 g proportion and 1.16 for the 10 g proportion are below the critical F value of 3.10. At the 5% level of significance, the statistical decision is not to reject the null hypothesis. As for the 15 g proportion, the computed F value of 4.01 is greater than the critical F value, hence, the decision is to reject the null hypothesis. It shows that there are no significant differences in the evaluations of the three groups of respondents on the 5 g and 10 g powdered guyabano leaves and dried carrots as ingredients in biscuits regarding texture except on the 10 g proportion.

This implies that the respondents have similar views of the biscuits with 5 g and 10 g proportions because of the amount of powdered guyabano leaves and dried carrots in each except on the biscuits with 15 g proportions.

Table 9 shows the test of significant difference in the respondents' evaluations on the acceptability of powdered guyabano leaves and dried carrots with 5 g, 10 g, and 15 g proportions in terms of color.

Table 9
Analysis of Variance of Respondents' Evaluations on the Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits Regarding to Color

P	Source of Variation	df	SS	MS	$F_{computed}$ Value	$F_{critical}$ Value (α=5%)	Decision	Interpretation
5g	Between Groups	2	0.08	0.04	0.33	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	10.80	0.12				
10g	Between Groups	2	0.27	0.13	0.68	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	17.08	0.20				
15g	Between Groups	2	0.06	0.03	0.08	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	36.70	0.42				

Table 9 shows that the computed F values of 0.33, 0.68 and 0. 08 are lower than the critical F value of 3.10. At the 5% level of significance, the statistical decision is not to reject the null hypothesis. It means that there is no significant difference in the evaluations of the three groups of respondents on the three different proportions of powdered guyabano leaves and dried carrots as ingredients in biscuits regarding color.

This implies that the three groups of respondents agreed that the color of the biscuits with 5 g and 10 g proportion is acceptable.

Physicochemical Analysis of Powdered Guyabano Leaves and Dried Carrots as Biscuits (Carrobano Biscuits)

Carbohydrates provide fuel for the central nervous system and the main source of energy for working muscles, prevent protein from being used as energy source, and enable fat metabolism. According to Smathers (2016), carbohydrates are important for brain function. It influence on "mood memory as well as a quick energy source". In fact, the recommended daily amount of carbohydrates is based on the amount of carbs the brain needs to function.

In the same view, Davidson (2018) asserts that carbohydrates are probably the most abundant and widespread organic substances in nature and essential factor of all

living things. Carbohydrate serves as the energy sources and essential structural components in organisms.

Another important and most widely used measurement in the processing and testing of foods is the determination of moisture. The amount of moisture it contains is inversely related to the amount of dry matter in foods. It has direct economic importance to the process and the consumer. Nielsen (2017) stated that food moisture analysis is important since the method used to determine moisture may lead to varying results for moisture content, depending on the form of the water present in a food. The physical, chemical aspects of food which relates with the freshness and stability for the storage of the food for a long period of time and the moisture content determine the actual quality of the food before consumption and to the subsequent processing in the food sector by the food producers.

Foods can be acidic, alkaline or neutral. The rate a food deteriorates is determined by acidity. The potential for hydrogen (pH) range is from 0 to 14, with 7.0 being neutral. A strong acid will have a pH 1, and a strong alkali will have a high pH value.

Proteins are essential for the structure, function, and regulation of the body's tissue and organs. Proteins are made up of hundreds of smaller units called amino acid that are attached to one another by peptide bonds, forming a long chain.

Table 10
Physicochemical Analysis of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits

Sample Description	Crude Protein %	Crude Fiber %	Crude Fat %	Carbohydrate %	Moisture %	Ash %	Ph %
Carrobano Biscuits	8.52	1.76	15.82	17.6	2.50	0.90	6.43

It can be gleaned from Table 10, that the product has a moderate carbohydrate content of 17.6 which means it is good for all ages. It has a moisture content of 2.50 %, which implies that the lower the amount of moisture in food the lower the risk of food spoilage. The shelf life of the food material is determined by the moisture content in the food. Low moisture foods usually slow down the growth of microorganisms, hence, the need for analysis and control of food moisture. Moisture content influences the taste, weight, appearance, and shelf life of food products. The carrobano biscuit has 8.52% protein content in each gram of biscuits, 1.76% of fiber content, 15.82% of fat, and 0.90% of ash which means that the product is good for the health of the consumers.

The pH range is from 0 to 14, water has a neutral pH level. The carrobano biscuit has a pH % of 6.43 and it is less acidic since the result of the test made is below 7.0. It should be noted that the pH range of 7.0 is neutral, above 7.0 is alkaline, and below 7.0 is considered acidic.

Level of Marketability of Carrobano Biscuits with Different Proportions as Perceived by the Respondents

The computed results on the level of marketability of carrobano biscuits with different proportions as perceived by the baking students, food experts, and consumer respondents are shown in Tables 11-17.

Table 11
Respondents' Perceptions on the Marketability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with 5 g Proportion

	Respondents					
	Baking Students		Food Experts		Consumers	
	OWM	VI	OWM	VI	OWM	VI
a. Consumer Demand	4.75	VHP	4.93	VHP	4.85	VHP
b. Supply Availability	4.42	HP	4.82	VHP	4.61	VHP
c. Production Cost	4.60	VHP	4.84	VHP	4.70	VHP
Grand Weighted Mean	**4.59**	**VHP**	**4.86**	**VHP**	**4.72**	**VHP**

The data show that in terms of the marketability of biscuits with a 5 g proportion, the three groups of respondents rated the biscuits with grand weighted mean ratings of 4.59, 4.86, and 4.72, respectively, verbally interpreted as **Very High Potential (VHP).**

It can be observed that the food experts and consumer respondents rated all the criteria as **Very High Potential (VHP),** while the baking students rated the supply availability as **High Potential (HP).**

This means that in terms of consumer demand, supply availability, and production cost, the 5 g proportion has a high level of marketability.

Table 12
Respondents' Perceptions on the Marketability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with 10 g Proportion

	Respondents					
	Baking Students		Food Experts		Consumers	
	OWM	VI	OWM	VI	OWM	VI
a. Consumer Demand	4.64	VHP	4.72	VHP	4.68	VHP
b. Supply Availability	4.41	HP	4.71	VHP	4.55	VHP
c. Production Cost	4.60	VHP	4.75	VHP	4.69	VHP
Grand Weighted Mean	**4.55**	**VHP**	**4.73**	**VHP**	**4.64**	**VHP**

The table revealed that the baking students, food experts, and consumer respondents evaluated the biscuits with 10 grams as **Very High Potential (VHP)** with the ratings of 4.55, 4.73, and 4.64, respectively.

To be more specific, the food experts and consumer respondents gave the same evaluation to all criteria, while the baking students rated supply availability as **High Potential (HP).** It implies that the product can be sold once it is offered in the market.

Table 13
Summary of the Respondents' Perceptions on the Marketability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with 15 g Proportion

	Respondents					
	Baking Students		Food Experts		Consumers	
	OWM	VI	OWM	VI	OWM	VI
a. Consumer Demand	4.49	HP	4.55	VHP	4.51	VHP
b. Supply Availability	4.34	HP	4.71	VHP	4.49	HP
c. Production Cost	4.51	VHP	4.75	VHP	4.66	VHP
Grand Weighted Mean	**4.45**	**HP**	**4.67**	**VHP**	**4.55**	**VHP**

The data unveiled that in terms of marketability, the baking student respondents rated the biscuits with a grand weighted mean rating of 4.45, verbally interpreted as **High Potential (HP)** while the food experts and consumer respondents rated it with 4.67 and 4.55, respectively, verbally interpreted as **Very High Potential (VHP)**.

It only signifies that the carrobano biscuits with 15 g proportion can be sold in the market because of potential demand from the consumers who might be looking for affordable and nutritious snacks.

Summary. Table 14 shows the summary of the respondents' evaluation on the marketability powdered guyabano leaves and dried carrots as ingredients in biscuits with different proportions.

Table 14
Summary of the Respondents' Evaluations on the Marketability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits with Different Proportions

Proportions	Respondents					
	Baking Students		Food Experts		Consumers	
	OWM	VI	OWM	OWM	VI	OWM
5 Grams	4.59	VHP	4.86	VHP	4.72	VHP

10 Grams	4.55	VHP	4.73	VHP	4.64	VHP
15 Grams	4.45	HP	4.67	VHP	4.55	VHP
Grand Weighted Mean	**4.53**	**VHP**	**4.75**	**VHP**	**4.64**	**VHP**

The data show that in terms of marketability, the three groups of respondents rated the biscuits with different proportions with the grand weighted mean ratings of 4.53, 4.75, and 4.64, respectively, verbally interpreted as **Very High Potential (VHP)**.

It is presumed that the three groups of respondents believe that the 5 g proportion has the highest level of marketability. This may be due to its aroma, taste, and color which the respondents rated as **Extremely Agreeable (EA)**. A glance at Table 14 also shows that the 5 g proportion has the highest overall weighted mean ratings.

Test of Significant Differences in the Evaluation of the Three Groups of Respondents on the Level of Marketability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Making Biscuits with 5 g, 10 g, and 15 g Proportions

The test of significant difference in the evaluation of the three groups of respondents on the level of marketability of guyabano powdered leaves and dried carrots as ingredients in biscuits with 5 g, 10 g, and 15 g proportion in terms of consumer demand, supply availability, and production cost.

Table 15 shows the analysis of variance of respondents' evaluation on the marketability of powdered guyabano leaves and dried carrots as ingredients in biscuits regarding consumer demand.

Table 15
Analysis of Variance of Respondents' Evaluations on the Marketability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits Regarding Consumer Demand

P	Source of Variation	df	SS	MS	$F_{computed}$ Value	$F_{critical}$ Value (α=5%)	Decision	Interpretation
5g	Between Groups	2	0.49	0.25	2.77	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	7.71	0.09				
10g	Between Groups	2	0.10	0.05	0.28	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	14.85	0.17				
15g	Between Groups	2	0.06	0.03	0.11	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	22.43	0.26				

Table 15 shows that the computed F values of 2.77, 0.28, and 0.11 are less than the critical F value of 3.10. At the 5% level of significance, the statistical decision is not to reject the null hypothesis. Thus, there are no significant differences in the evaluations of the three groups of respondents on the marketability of powdered guyabano leaves and dried carrots with 5 g, 10 g, and 15 g proportions as ingredients in biscuits as to consumer demand.

This means that the three groups of respondents agree that the biscuits' level of marketability is high in terms of consumer demand.

Table 16 shows the analysis of variance of respondents' evaluation on the marketability of powdered guyabano leaves and dried carrots as ingredients in biscuits regarding supply availability.

Table 16
Analysis of Variance of Respondents' Evaluations on the Marketability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits Regarding Supply Availability

P	Source of Variation	df	SS	MS	$F_{computed}$ Value	$F_{critical}$ Value (α=5%)	Decision	Interpretation
5g	Between Groups	2	2.40	1.20	9.55	3.10	Reject the Ho	Significant
	Within Groups	87	10.93	0.13				
10g	Between Groups	2	1.47	0.74	3.23	3.10	Reject the Ho	Significant
	Within Groups	87	19.85	0.23				
15g	Between Groups	2	2.03	1.02	3.53	3.10	Reject the Ho	Significant
	Within Groups	87	25.09	0.29				

As revealed in Table 16, the computed F values of 9.55, 3.23 and 3.53 are higher than the critical F value of 3.10. At the 5% level of significance, the statistical decision is to reject the null hypothesis. It shows that there are significant differences in the evaluations of the three groups of respondents on the marketability of powdered guyabano leaves and dried carrots with 5 g, 10 g, and 15 g proportions as ingredients in biscuits.

This could mean that the three groups of respondents have different views on the level of marketability of the carrobano biscuits in terms of supply availability.

Table 17 shows the analysis of variance of respondents' evaluation on the marketability of powdered guybano leaves and dried carrots as ingredients in biscuits regarding production cost.

Table 17
Analysis of Variance of Respondents' Evaluations on the Marketability of Powdered Guyabano Leaves and Dried Carrots as Ingredients in Biscuits Regarding Production Cost

P	Source of Variation	df	SS	MS	$F_{computed}$ Value	$F_{critical}$ Value (α=5%)	Decision	Interpretation
5g	Between Groups	2	0.87	0.44	2.83	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	13.39	0.15				
10g	Between Groups	2	0.33	0.16	1.59	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	8.93	0.10				
15g	Between Groups	2	0.88	0.44	2.77	3.10	Fail to Reject the Ho	Not Significant
	Within Groups	87	13.80	0.16				

It can be viewed in Table 17 that the computed F values of 2.83, 1.59 and 2.77 are below the critical F value of 3.10. At the 5% level of significance, the statistical decision is not to reject the null hypothesis. It means that there are no significant differences in the evaluations of the three groups of respondents on the marketability of powdered guyabano leaves and dried carrots with 5 g, 10 g, and 15 g proportions as ingredients in biscuits as to production cost.

The data gathered showed that all three groups of respondents had similar evaluations of the products' marketability in terms of production cost.

Conclusions

1. The carrobano biscuits with a 5 g proportion is the most acceptable proportion in terms of appearance, aroma, taste, texture, and color as compared to other proportions.

2. There were no significant differences in the evaluation of the three groups of respondents on the acceptability of carrobano biscuits in three different proportions in terms of aroma and color. As for the 5 g and 15 g proportions, there were no significant differences in the evaluation of the three groups of respondents except in terms of texture. For the 10 g proportion, there was a significant difference in the evaluation of the respondents in terms of appearance and taste.
3. In terms of physicochemical analysis, the carrobano biscuits have a lesser risk of food spoilage and bacterial growth; it has a high carbohydrate content and moderate protein content which is essential for the structure, function, and regulation of tissues and organs of the body.

4. The carrobano biscuits with 5 g and 10 g proportions have a higher potential in the market as compared to the 15 g proportion.
5. There were no significant differences in the evaluation of the three groups of respondents on the level of marketability of carrobano biscuits in terms of consumer demand and production cost except in terms of supply availability.
6. The comments and suggestions of the three groups of respondents to further improve the product were as follows:

Comments:

- The carrobano biscuits taste very good especially the 5 g proportion as compared to the other proportions.
- The appearance, aroma, and color of the product are unique and it has a delicate smell.
- The ingredients are locally available and affordable.
- The carrobano biscuits are good because it is a nutritious snack.

Suggestions:

- Add more carrots to improve the green-orange color of the biscuits.
- Balance the taste of carrobano biscuits with a 15 g proportion so it will not overpower the other ingredients.
- The aroma of the carrobano biscuits could be improved by adding vanilla extract to lessen the smell of the guyabano powdered leaves in 15 g proportion.
- Other researchers should consider promoting carrobano biscuits as one of the baked products in the market.

Recommendations

1. The students, through the researcher, should craft a project proposal on the production of biscuits for possible research grants from the Department of Science and Technology and the Department of Agriculture.
2. The local government should promote the carrobano biscuits as one of the baked products in the local market.
3. Other researchers may undertake studies on different baked products utilizing other healthy ingredients.

Compliance with Ethical Standards

All respondents provided their informed consent after being properly informed about the nature and purpose of the study. Participants were made fully aware that they might leave the study at any time without facing any consequences. The respondents' identities were securely kept anonymous, and their welfare was protected at every stage of the study. The conduct of this study has not revealed any conflicts of interest, according to the authors. Strict precautions were taken to prevent plagiarism and to make sure that all contributions and sources were properly acknowledged. In addition, the data were

interpreted without bias and were only utilized for study, in accordance with the strictest ethical guidelines.

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A CORRELATIONAL STUDY ON THE EFFECTS OF INSTAGRAM INFLUENCER MARKETING ON PURCHASING INTENTIONS OF GRADE 12 ABM STUDENTS IN MANILA

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ABSTRACT

Many consumers rely on Instagram and other social media platforms for shopping, driven by influencers. However, research gaps exist in understanding physical attractiveness, product opinions, and follower counts. As a result, this study examined how Instagram influencers affect the purchasing intentions of Grade 12 ABM students in Manila. The study selected respondents familiar with consumer behavior, aligning closely with the study's topic, and employed a correlational quantitative design. The study surveyed 138 students through simple random sampling and descriptive and correlational analysis. The results highlight the influence of physical attractiveness on consumers' perceptions of products endorsed by Instagram influencers. The results also demonstrate a strong positive effect of influencer marketing on purchase intentions among Grade 12 ABM students, confirming aspects of the Elaboration Likelihood Model (ELM) related to follower count, product opinions, and visual appeal. Overall, the study affirmed that Instagram influencers significantly impact the purchasing intention of Grade 12 ABM students in Manila. Future researchers should use qualitative methods to explore students' purchasing intentions influenced by Instagram marketing, expanding their study to include various cities in Luzon and conducting comparative analyses across social media platforms to explore cultural influences.

Keywords: *Social media marketing, Social media, Instagram, Influencers, Purchasing Intention*

INTRODUCTION

The use of social media has been extensively studied in recent years; in some, it is used for marketing purposes to promote brand-related content (Jami Pour et al., 2021). Ever since the pandemic struck, social media use has been a necessity in our everyday lives. A study from Dollarhide (2023) states that people use social media for browsing the news, passing their time, and connecting with friends, and many marketers have taken advantage of this trend to market their products and create a new strategy in the marketing industry called social media marketing. Instagram has grown from a mere socializing social media platform to a useful tool for marketing intentions throughout the years (Pick, 2021). Due to the application's popularity, many brands took this as an opportunity to utilize the mobile application to increase their social media presence and engagement (Belanche et al., 2020). With the rising number of social media users' day by day, some users use this as their platform to give their feedback on certain products, they are called "social media influencers" (Hani et al., 2022). Through this, they can generate profit by being paid by the brands that wish for them to give their review on their items. As people continue to follow the lives of these influencers through their content, their purchasing intentions might be influenced as the influencers promote their products.

The surge in influencer marketing has prompted numerous research endeavors into the matter. However, a thorough scientific grasp of the subject still needs to be improved. Several reasons contribute to this gap in understanding. First, various researchers studied the purchasing intentions of social media users. However, these studies focus on a big age group in studying the purchasing intentions of social media users, disabling them to be specific in their research (Hani et al., 2018; Kim & Kim, 2023; Jami Pour et al., 2021). Second, prior researchers have yet to concentrate primarily on the purchasing intentions of social media users. Their focus has been split between purchasing intentions and various other variables, such as mental well-being (Staniewski & Awruk, 2022), brand loyalty (Balakrishnan et al., 2014), and brand attitude (Abzari et al., 2014), preventing them from entirely concentrating on the purchasing intentions of social media users. Third, the researchers noticed that limited studies concerning social media influencers contain the following variables: physical attractiveness, opinions on a product, and number of followers. Fourth, previous studies have also failed to determine whether Instagram influencers positively or negatively impact consumers' purchasing intentions (Masuda et al., 2022; Farivar & Wang, 2022; Sun et al., 2021). Lastly, a similar study pointed out that social media influencers contributed to consumers' impulsive buying behavior, negatively impacting consumers as they cannot decide comprehensively regarding the products they are about to purchase (Zafar et al., 2023).

In order to address the problems highlighted in the previous studies, a comprehensive study that is patterned to existing literature and in accordance with this study's objective is needed to address the specific gaps and problems that were identified by this paper.

With that, the study aimed to determine the effect of Instagram influencers as a form of social media marketing on the purchasing intentions of Grade 12 ABM students in a private university in Manila.

Research Questions

In relation to the theory being utilized in this study, the general objective of this study is to determine the effect of Instagram influencers as a form of social media marketing on the purchasing intentions of Grade 12 ABM students in a private university in Manila. In order to address the general objective and specific objectives of this study that are patterned within the theoretical framework, specifically the theory of persuasion or Elaboration Likelihood Model Theory, the paper sought to satisfy the formulated main question:
How do Instagram influencers as a form of social media marketing affect the purchasing intentions of Grade 12 students of the ABM strand in a private university in Manila?

Furthermore, the study was inclined to address the following Sub-questions:

1. Which variable concerning Instagram Influencers affects the purchasing intention of Grade 12 ABM students in a private university in Manila, focusing on physical attractiveness, opinions on a product, and number of followers?
2. How do the physical attractiveness, opinions on a product, and number of followers of Instagram influencers affect the purchasing intentions of Grade 12 ABM students in a private university in Manila?
3. Is there a difference in the effect of Instagram influencers on the purchasing intention of Grade 12 ABM students in a private university in Manila based on gender?
4. Is there a relationship between the physical attractiveness of Instagram influencers and the purchasing intentions of Grade 12 ABM students in a private university in Manila?
5. Is there a relationship between the opinions on a product of Instagram influencers and the purchasing intentions of Grade 12 ABM students in a private university in Manila?
6. Is there a relationship between the purchasing intentions of Grade 12 ABM students in a private university in Manila and the number of followers of an Instagram influencer?

METHODOLOGY

The study used a quantitative approach to gather data from respondents through survey forms. Such a method aided researchers in determining the effects of Instagram influencers as a social media marketing tool on the purchasing intentions of Grade 12 ABM students in a private university in Manila. Furthermore, the quantitative design enabled the researchers to unveil the relationships among variables, as Sreekumar (2023) pointed out. Specifically, the study adopted a correlational research design to gain a thorough and comprehensive understanding of the population or phenomenon under study, including identifying patterns and relationships that may exist among the variables

(Bhandari, 2022). The selection of this research design was attributed to its distinct advantages over other designs.

As the study determined the effects of Instagram influencers as a form of social media marketing on the purchasing intentions of Grade 12 ABM students in a private university in Manila, an accurate evaluation was required to explain better and understand the research objectives and problems. As a result, following the research design, ABM students from batch 2024 in a private university in Manila were chosen as the population of the respondents. This population comprised 213 students who were 18 years old or above 18. Considering the significant number of students, the researchers employed a probability sampling method to select the questionnaire respondents. Specifically, the researchers chose a simple random sampling method for this study. This approach entailed the selection of a random subset of a population, where each member has an equal chance of being chosen (Hayes, 2023).

The primary data collection for this study was through an online survey questionnaire that was disseminated through the use of Google forms. The survey comprised a comprehensive set of 24 self-developed questions, which underwent validation by an expert within the researchers' institution specifically from the ABM strand of a private university in Manila. Moreover, to ensure the survey's effectiveness in providing accurate and reliable data in examining the variables of this study, the researchers conducted a pilot test on a selected subset of respondents from the population.

The selected method for handling the ordinal data collected from an online questionnaire involved descriptive and correlational analysis. As Rawat (2021) elucidates, descriptive analysis aids in understanding data distribution, detecting potential errors and outliers, and uncovering relationships among variables, laying a strong groundwork for further statistical examination. The study applied descriptive statistics, specifically measures of central tendency and variability like mean and standard deviation, to each dataset. This allowed the researchers to grasp each dataset's central measure and diversity (Bhandari, 2023). The study also examined the minimum and maximum response values for each question, establishing their relationship to the variables presented in the study.

Additionally, this study incorporated correlational analysis further to explore the relationship between the variables under examination. Correlation analysis is a powerful tool for gauging the magnitude and direction of the linear association between two variables (Bhandari, 2023). Specifically, Spearman's Rank Correlation method was employed due to its effectiveness in measuring the strength and direction of association between two ranked variables (Gupta, 2023).

RESULTS

1. Independent Variables and Purchasing Intentions

Independent Variables	Mean	SD	r value	Description	R squared	p-value	Alpha	Decision	Remarks
Opinions on Products	3.07	0.51	0.772	Direct High Relation ship	.586 or 58.6%	.000	.05	Reject Ho	Significant
Number of Followers	3.01	0.54							
Physical Attractiveness	3.08	0.52							

Table 1. Independent Variables and Purchasing Intentions

The table above examined whether physical attractiveness, opinions on a product, and the number of followers of Instagram influencers influence the purchasing intentions of Grade 12 ABM students in a private university in Manila. According to the results, physical attractiveness emerged as the most influential variable in purchasing decisions, with the highest mean rating of 3.08 (s=.52), while the number of followers had the lowest rating at a mean of 3.01 (s=.54). Furthermore, the results indicated a strong positive correlation (r=.772) between the independent variables: opinions on products, number of followers, physical attractiveness, and purchasing intentions. Additionally, the study found statistically significant evidence ($p<.05$) to reject the null hypothesis, suggesting a meaningful relationship between the physical attractiveness, opinions on a product, number of followers of Instagram influencers, and the purchasing intentions of Grade 12 ABM students in a private university in Manila. These findings directly aligned with the study's second SOP, which investigated how physical attractiveness, opinions on a product, and the number of followers of Instagram influencers influence the purchasing intentions of Grade 12 ABM students in a private university in Manila.

2. Purchasing Intention and Gender

Variables	p-value	Alpha	Decision	Remarks
Purchasing Intention	.035	.05	Reject Ho	Significant

Table 2. Purchasing Intentions and Gender

The table presented an analysis of respondents' perceptions regarding the influence of Instagram influencers on the purchasing intentions of Grade 12 ABM students in a private

university in Manila, categorized by gender. The results revealed statistically significant evidence (p<.05), indicating a difference in how male and female respondents perceive the impact of Instagram influencers on purchasing intentions. These findings directly supported the study's third statement of the problem, which investigated potential differences in the effect of Instagram influencers on the purchasing intentions of Grade 12 ABM students in a private university in Manila based on gender. The statistical analysis results revealed significant variations in perception between men and women regarding this influence.

3. Physical Attractiveness and Purchasing Intentions

Variables	r-value	Description	p-value	Alpha	Decision	Remarks
Physical Attractiveness and Purchasing Intentions	.475	Direct Moderate Relationship	.000	.05	Reject Ho	Significant

Table 3. Physical Attractiveness and Purchasing Intentions

The table above examined the correlation between the physical attractiveness of Instagram influencers and the purchasing intentions of Grade 12 ABM students in a private university in Manila. The results revealed a direct moderate correlation between these variables (r = 0.475). These results directly addressed the fourth statement of the problem, which explored the relationship between Instagram influencers' physical attractiveness and the purchasing intentions of Grade 12 ABM students in a private university in Manila. The statistical analysis provided compelling evidence to reject null hypothesis 4 (p < 0.05), highlighting a meaningful association between the physical attractiveness of Instagram influencers and the purchasing intentions of Grade 12 ABM students in a private university in Manila.

4. Opinions on Products and Purchasing Intentions

Variables	r-value	Description	p-value	Alpha	Decision	Remarks
Opinions on products and Purchasing Intentions	.640	Direct Moderate Relationship	.000	.05	Reject Ho	Significant

Table 4. Opinions on Products and Purchasing Intentions

The table examined how the opinions of Instagram influencers about products relate to the purchasing intentions of Grade 12 ABM students in a private university in Manila. The results indicated a moderate correlation between these variables (r = 0.640). This finding directly corresponded to the fifth statement of the problem, which investigated the relationship between Instagram influencers' product opinions and the purchasing

intentions of Grade 12 ABM students in a private university in Manila. The statistical analysis provided compelling evidence to reject the null hypothesis ($p < 0.05$), emphasizing a significant relationship between Instagram influencers' product opinions and the purchasing intentions of these students.

5. Number of Followers and Purchasing Intentions

Variables	r-value	Description	p-value	Alpha	Decision	Remarks
Number of Followers and Purchasing Intentions	0.591	Direct Moderate Relationship	.000	.05	Reject Ho	Significant

Table 5. Number of Followers and Purchasing Intentions

Table 5 examined the relationship between the number of followers of Instagram influencers and the purchasing intentions of Grade 12 ABM students in a private university in Manila. The results showed a direct moderate correlation between these variables ($r = 0.591$). This result directly aligned with the sixth statement of the problem, which investigated the relationship between Grade 12 ABM students in a private university in Manila's purchasing intention and the number of followers of an Instagram influencer. The statistical analysis provided compelling evidence to reject the null hypothesis ($p < 0.05$), indicating a significant relationship between the number of followers of Instagram influencers and the purchasing intentions of Grade 12 ABM students in a private university in Manila.

DISCUSSION

As evidenced by respondents in Table 1, Instagram influencers significantly influenced their purchasing decisions, highlighting the impact these influencers have on their buying intentions. Therefore, physical attractiveness, opinions on a product, and the number of followers of Instagram influencers significantly impact the purchasing intentions of Grade 12 ABM students in a private university in Manila, accounting for approximately 58.6% of the variance.

The data presented in Table 1 highlighted physical attractiveness as the most influential variable shaping the purchasing intention of Grade 12 ABM students. This finding was consistent with Rodrigues (2021), who noted a strong correlation between respondents' perceptions of social media influencers' attractiveness and purchasing intentions. Furthermore, Bakhtvar and Piri (2022) emphasized the positive impact of physical attractiveness, especially among young consumers, using celebrity influencers to drive purchasing intentions.

Moreover, the data from Table 1 emphasized the significant influence of Instagram influencers on the purchasing decisions of Grade 12 ABM students in a private university in Manila, emphasizing their impact on buying intentions. This finding was backed up by the research of Patmawati and Sitompul (2022), who highlighted the effectiveness of influencer marketing on social media in capturing attention, raising awareness, and influencing followers. Husseino et al. (2022) also emphasized the profound influence of Instagram influencers on diverse online consumer purchasing intentions. Additionally, Toksari and Murutsoy (2019) demonstrated that influencer recommendations positively influence individual purchasing decisions, illustrating the impact of these influencers on consumer behavior and purchasing intentions.

The data in Table 2 highlighted variations in students' consumer behavior regarding purchasing products endorsed by social media influencers on Instagram, which differ based on gender. This finding aligned with the research conducted by Jeljeli et al. (2022), indicating that social influences positively impact both men and women, with a more pronounced effect observed among women. Similarly, Budacia et al. (2015) highlighted significant gender differences in how men and women interpret and respond to promotional messages and social influences in online marketing, emphasizing distinct patterns of engagement and perception between the two genders.

Additionally, Dalangin et al. (2021) suggested that female respondents tend to have a higher perception of social media influencers than male respondents, attributed partly to women's more frequent internet usage. This greater exposure to online content may lead women to develop stronger relationships with influencers and view their recommendations more favorably. Additionally, Nunes (2021) found that females exhibit greater trust perceptions (47.5%) compared to males (43.8%), indicating that women were more inclined to trust social media influencers when making purchasing decisions. Therefore, these findings highlighted the influence of gender on consumer perceptions and behaviors in the context of social media influencer marketing.

The result of Table 3 sheds light on how Instagram users were drawn to influencers they perceived as attractive, a factor that significantly influenced their popularity and fostered dedicated followers. This finding aligned with research conducted by (Kim & Park, 2023), which emphasized that influencers' attractiveness can stimulate followers' mimetic behavior and enhance their popularity and lifestyle. Similarly, studies by Ahmed & Mort (2016) and Branchik & Chowdhury (2017) suggested that consumers' positive attitudes toward desirable celebrities, influenced by their attractiveness, can impact purchase intentions.

Furthermore, Wiedmann and Mettenheim (2020) highlighted the importance of influencer trustworthiness and attractiveness as predictors of brand loyalty and purchasing intention. Additionally, Liu (2022) demonstrated that celebrity characteristics, particularly physical attractiveness, influence impulsive buying tendencies and purchase intentions, with purchase intention mediating in fostering consumers' impulsive purchases.

Table 4 on the other hand, highlighted the relationship between the product opinions of Instagram influencers and the purchasing intentions of Grade 12 ABM students in a private university in Manila, addressing the fifth problem statement and challenging null hypothesis 5. This result was backed up by research from AlFarraj et al. (2021), which states that when influencers are viewed as experts, consumers are more likely to trust their recommendations and endorsements, influencing their purchase intentions.

Moreover, Casais and Conde (2023) noted that peers often seek out influencers for opinions and advice, establishing them as credible and influential figures in consumer decision-making. Moreover, Abdinagoro et al. (2020) found that consumers prioritize influencer endorsements over customer reviews, influenced by the perceived opinion leadership of influencers in shaping their purchasing decisions. Additionally, Alkan and Ulas (2022) discovered that influencers' positive or negative opinions about a product or brand can significantly impact the trust consumers place in them.

Lastly, Table 5 highlighted a substantial relationship between the number of followers of Instagram influencers and the purchasing intentions of Grade 12 ABM students in a private university in Manila, effectively addressing the sixth problem statement and rejecting null hypothesis six. This finding aligned with research by Chen et al. (2023), indicating that despite users' awareness of fake followers, follower count significantly influences consumer perceptions of an influencer's influencing power. Similarly, Casais and Conde (2023) concluded in their research that the higher an influencer's follower count, the more likely consumers were to adopt their recommendations, demonstrating their influence and persuasive impact.

Pittman and Abell (2021) proposed that purchase intentions and positive sentiments toward a product are positively influenced when endorsed by influencers with a large follower base. Additionally, Tamara et al. (2021) emphasized that the number of followers is critical for influencers to influence purchasing intentions on social media platforms significantly. Therefore, the follower counts of Instagram influencers played a pivotal role in shaping the purchasing intentions of Grade 12 ABM students in a private university in Manila, underscoring the importance of influencer reach and popularity in consumer decision-making processes.

Conclusions

To conclude, multiple tables revealed a strong influence of Instagram influencer marketing on the purchasing intentions of Grade 12 ABM students in a private university in Manila. Across various tables, key findings included the significant impact of influencer attractiveness on consumer behavior, with physical attractiveness being a critical factor shaping purchasing decisions. Additionally, there were notable gender-based variations in how students respond to influencer marketing, highlighting distinct patterns of engagement between male and female respondents. The data also emphasized the importance of influencer opinions, physical attractiveness, and follower counts in driving consumer purchasing intentions, underscoring influencers' significant role in shaping

consumer behavior and decision-making processes within this demographic. Together, these results highlighted the substantial influence of Instagram influencer marketing on consumer purchasing behaviors among Grade 12 ABM students in a private university in Manila.

The researcher's investigation yielded crucial findings, leading to the following conclusions:

1. The study revealed that physical attractiveness was the most influential variable shaping consumers' perceptions and decisions about the products Instagram influencers endorse. This finding underscored how consumers associate attractive influencers with positive qualities such as desirability, success, and credibility, significantly impacting their purchasing decisions.
2. The study emphasized the effect of Instagram influencers on purchase intentions among Grade 12 ABM students in a private university in Manila. Survey results demonstrated a strong positive influence of influencer marketing, significantly increasing the likelihood of product purchases guided by these influencers.
3. The study revealed the importance of understanding gender differences in response to Instagram influencer marketing among Grade 12 ABM students in a private university in Manila. The study revealed distinct effects of gender on purchasing intentions, highlighting the need for tailored influencer strategies based on gender-specific preferences and perceptions.
4. The study confirmed the ELM's peripheral route theory, showing how follower count enhanced an influencer's credibility and trustworthiness. This information aligned with consumers relying on surface-level cues, like follower count, to make decisions.
5. The findings supported the ELM's peripheral cues, indicating that visual appeal and glamorous lifestyles portrayed by influencers influence students' purchasing decisions through the peripheral route of persuasion.
6. The study aligned with the ELM's central route, emphasizing consumers' trust in influencer opinions. This information reflected the thoughtful consideration of influencer content significantly shaping attitudes and behaviors toward products.

Recommendations

The study revealed the effectiveness of Instagram influencer marketing on the purchasing intention of Grade 12 ABM students. As a result, the following recommendations are presented:

1. Future researchers could recreate the study using a qualitative research design. This method would better understand other factors that affect Grade 12 students'

purchasing intentions. Researchers could gain deeper insights into how Instagram marketing shapes these students' decision-making processes when making purchases.

2. Future studies could broaden their scope beyond Manila to encompass students across various cities and regions in Luzon. Expanding the study's reach to a more diverse demographic might yield a broader consensus and more detailed results.

3. Future studies should compare influencer marketing effects across social media platforms beyond Instagram. Explore how influencer strategies differ on platforms like TikTok, YouTube, or Twitter, providing a comprehensive understanding of each platform's impact on Grade 12 ABM students' purchasing intentions.

4. Future researchers could investigate the longevity of Instagram influencers' impact on Grade 12 ABM students' purchasing decisions over time. Explore how this influence evolves and whether it maintains significance over extended periods.

5. Future Researchers should explore potential cultural or regional differences in how Grade 12 ABM students respond to influencer marketing. Investigate how cultural factors shape the influence of Instagram influencers among different demographics or regions.

Compliance with Ethical Standards

Protecting respondents and maintaining confidentiality were given particular attention, along with addressing their concerns about the survey. Here are the ethical considerations that were followed in the conduct of this study.

Voluntary Participation: Participation in this research was voluntary and optional, and no penalties or punishments were imposed upon respondents who opted not to participate. Respondents retained the right to withdraw from the study or discontinue participation at any point, even after it had begun, ensuring their informed consent throughout the research process.

Risks and Inconveniences: Personal information, such as name and gender identification, was requested from research respondents with guaranteed compliance with the Data Privacy Act of 2012. Participation in this research posed no significant risks physically, socially, or psychologically, and the questionnaire was impartial, ensuring the welfare of all respondents.

Provision for Injury or Related Illness: The participation of the respondents in the study was solely through an online survey. Hence, there was no provision for the risk of injury

or any illnesses, as the study was conducted through the use of Google Forms in the comfort of their own homes.

Conflict of Interest: To prevent bias in the study results, the researchers confirmed that they had no close personal relationships with any respondents, eliminating any sources of conflict of interest.

Data Management and Security Measures: The data gathered was stored in two different locations to have a backup plan for possible accidents like the disappearance of data. The primary storage for the data was on Google Drive.

Confidentiality: Respondents had the option to include or omit their names on the questionnaires and/or interview notes, as these materials were rendered anonymous through the assignment of code numbers. The respondent's complete name was not included in any questionnaires, and no details that could identify them were made public.

Disclosure of Publication Rights: The study's results may be presented at a conference or published in an academic journal. However, the respondents' identities are guaranteed to remain private and confidential.

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AEROBIC PHYSICAL ACTIVITY, PROTECTION MOTIVATION, AND PHYSICAL PERFORMANCE AMONG MIDDLE-AGED WOMEN

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ABSTRACT

In the middle-aged population, engaging in routine physical activity has been shown to enhance sleep quality, promote favourable mental health outcomes, and mitigate the likelihood of developing age-related illnesses. According to Dishman (2010), it has been observed that a significant proportion of middle-aged women who initiate exercise routines are prone to discontinuing their regimen, with a dropout rate of 50% within six months. As individuals age, a sedentary lifestyle may develop. The individual's physical capabilities and kinaesthetic abilities are subject to certain limitations. The research aimed to investigate the levels of aerobic physical activity, protection motivation, and physical performance in middle-aged women residing in Atimonan, Quezon. The study utilized descriptive research methodology. The research encompassed a sample of middle-aged individuals residing in Atimonan, Quezon. The study concluded that there was both a statistically insignificant and a significant correlation between the variables of aerobic physical activity and physical performance. A significant correlation was discovered between protection motivation and physical performance. It is advisable for prospective researchers to devise a physical fitness regimen tailored to middle-aged women. The survey may also encompass a diverse range of gender identities and age cohorts as participants.

Keywords: *Aerobic Physical Activity, Middle-aged Women, Protection Motivation, Physical Performance*

INTRODUCTION

Engagement in physical activity and exercise has been linked to various advantages throughout the lifespan of women in middle age, such as reduced susceptibility to cardiovascular disease, diabetes, cancer, hypertension, depression, and osteoporosis (Warburton et al., 2016). It has been discovered that engaging in regular physical activity during middle age improves sleep quality, fosters mental health outcomes, and lowers the risk of certain age-related disorders. Due to the accompanying advantages, individuals should engage in frequent moderate-to-vigorous intensity aerobic physical activity (MVPA), such as walking, jogging, or cycling, according to the World Health Organization's "Global Recommendations on Physical Activity for Health." For adults to experience significant health benefits, the 2008 Guidelines recommend a minimum of 150 minutes of moderate-intensity physical activity per week, 75 minutes of vigorous-intensity physical activity per week, or a comparable combination of moderate- and vigorous-intensity physical activity (Foodconsumer.org, 2011). Despite the mounting evidence supporting the advantages of exercise and aerobic physical activity, statistics indicate that a significant proportion of the population, approximately 58%, remains inactive, as per the American College of Sports Medicine (ACSM) 1990 guidelines (United States Centers for Disease Control and Prevention, 1993). According to Dishman (2010), it has been observed that even among middle-aged individuals who initiate exercise, there is a high probability of 50% of women discontinuing the activity within a period of 6 months.

A useful cognitive framework for comprehending people's motivation to engage in protective behaviours, such as exercise and physical activity, is provided by Rogers' 1975 Protection Motivation model. According to the protective motive hypothesis, four characteristics can be used to predict a person's intention to engage in a particular behaviour, such as exercise or physical activity. The perceived seriousness of the threat, which relates to the detrimental effects of aerobic physical inactivity, is one of these variables. Other significant predictors include perceived susceptibility to the danger, perceived benefits or effectiveness of the preventive behaviours, such as the effectiveness of exercise in enhancing health, and perceived self-efficacy, or confidence in one's capacity to carry out the advised behaviour, such as confidence in performing enough exercise to reap the benefits to health.

According to the Mayo Clinic (2020), engaging in aerobic physical activity is identified as another crucial factor for middle-aged women to achieve successful aging and maintain a healthy lifestyle. Several intervention studies have effectively utilized behavioural techniques to impact participation in physical activity. Studies on interventions typically indicate a rise in the frequency of aerobic physical activity, which can range from 10 to 25% (Mcauley & Lox, 2015). Irrespective of an individual's age, weight, or athletic capacity, engaging in aerobic activity that is appropriately intense, frequent, and of adequate duration is beneficial for one's health. Irrespective of one's age, engaging in aerobic activity can yield numerous health advantage.

Considering the protective advantages of exercise and aerobic physical activity in middle age, it is plausible that an intervention centered on information and aimed at enhancing protection motivation constructs could effectively influence the exercise and aerobic physical activity intentions of middle-aged individuals, leading to an initial change in behaviour (Gaston & Prapavessis, 2019).

In conclusion, as per the findings of a study conducted by Courneya (2015), there exists a significant correlation between perceived severity and both activity level and intention to exercise. Despite the existence of indirect evidence from previous studies of Biddle & Nigg (2016), there is a dearth of research that has directly examined the concept of protection motivation in the context of exercise and aerobic physical activity among middle-aged women. Additionally, it has been emphasized by Mcauley and Lox (2015) that the most reliable epidemiological estimates indicate that a minority of individuals between the ages of 18 and 65 engage in physical activity at an adequate level of intensity, frequency, and duration to achieve favourable health outcomes associated with exercise. Specifically, less than 20% of this population meets the recommended exercise guidelines. Regrettably, it is estimated that a sedentary lifestyle is prevalent among 30 to 59% of the middle-aged population. It is imperative to undertake this investigation specifically for middle-aged women, given that they are the demographic that participates in structured exercise or aerobic physical regimens but often discontinues such activities prior to reaping any associated health advantages. The attrition rate in exercise programs is a well-documented phenomenon, with statistics indicating that approximately 50% of participants discontinue their involvement within the initial six-month period.

The researcher wished to determine the level of aerobic physical activity, extent of protection motivation, and physical performance of sedentary, middle-aged adults through assessing the relationship of the variables being used in the study.

Research Questions

This study attempted to determine aerobic physical activity, protection motivation, and physical performance among middle-aged women in Atimonan, Quezon.

Specifically, it aimed to answer the following problem statements:

1. How do the respondents describe their level of aerobic physical activity in terms of:
    1.1 Frequency
    1.2 Intensity
    1.3 Duration
2. What is the extent of protection motivation among middle-aged women in terms of:
    2.1 Perceived Severity
    2.2 Perceived Vulnerability
    2.3 Perceived Benefits or Response Efficacy
    2.4 Self-Efficacy
3. How do the respondents perceive their physical performance as to:
    3.1 Body Movements
    3.2 Improve Functioning
    3.3 Enhanced Sound Mind

3.4 Good Body Mechanics

4. Is there any significant relationship between aerobic physical activity and the physical performance of middle-aged women?
5. Is there a significant relationship between the protection motivation and the physical performance of the respondents?

METHODOLOGY

In this study, the descriptive-correlational method of research was employed by the researcher to collect data pertaining to the current state of the investigation, as noted by Downs and Ulbrecht (2016). The researcher intended to determine the aerobic physical activity, protection motivation, and physical performance of middle-aged women and to ascertain if there is a significant relationship between the variables being used in the study. The researcher employed a purposive sampling method to select participants for the study. In this case, the researcher selected middle-aged adults in Atimonan, Quezon. It consisted of thirty (30) middle-aged adults from Brgy. Tagbakin, thirty (30) middle-aged adults from Brgy. Sapaan and forty (40) middle-aged adults from Brgy. San Isidro with a total number of one hundred (100) respondents. They are chosen since the study focus on the middle-aged women in the age bracket of 50 to 60 years.

The researcher employed the modified type of questionnaire (Corbin et al., 2019) to gather information on aerobic physical activity, protection motivation, and physical performance among the middle-aged people. The questionnaire is used as the main data gathering instrument for this study and it consisted of three parts. The first part contains the fill in response that pertains to the respondents' information about their name, age, gender, and address. The second part of the questionnaire is the survey indicating the questions relating to the level of aerobic physical activity includes intensity, frequency, and duration. The third part comprises the extent of protection motivation that deals with the perceived severity, perceived vulnerability, perceived benefits, and self-efficacy. The last part is the physical performance of the respondents in terms of body movements, improve functioning, enhance sound mind, and good body mechanics.

The questionnaire is written in English. The item in the questionnaire is rated into Likert-scale type. Upon receiving approval from the research adviser and undergoing evaluation by multiple panels of experts to ensure content quality, the researcher proceeded to conduct a study on the relationship between aerobic physical activity, protection motivation, and physical performance among middle-aged women in Atimonan, Quezon. This study utilized quantitative research methodologies. The proposed duration for the research timeline is between one and two months.

The researcher formulated a questionnaire as the main instrument. The data that gathered in this research study are from individual people, the middle-aged. The collection of data is subject to the level of aerobic physical activity, extent of protection motivation, and physical performance of middle-aged adults. After implementation, the researcher will compile all the instruments and gather all the needed data.

After checking, the middle-aged women's responses were summarized by the researcher and forwarded to his statistician for statistical treatment. After the results from the statistician, an analysis of data will be done.

RESULTS

Table 1. *Level of Aerobic Physical Activity in terms of Frequency*

Indicators	Mean	SD	Verbal Interpretation
1. Aerobic Physical Activity (E.G. Swimming, Jogging, Aerobics, Basketball, Or Workout)	2.37	1.522	1-2days/week
2. Walking/Cycling, Including Walking To Work, Shopping, Or For Pleasure.	3.33	1.551	1 days/week
3. Housework (Cleaning Floors, Washing Dishes, Cooking)	4.44	1.113	4-5 days/week
4. Caring For Relatives Who Need Help (Has Chronic Illness) Or Nursing For Children	3.44	1.641	1 days/week
5. Farming Or Gardening	3.12	1.584	3 days/week
Overall Mean	3.34	1.482	3 days/week

Legend: 4.50 - 5.00 Almost everyday; 3.50 - 4.49 4-5 days/week; 2.50 - 3.49 3 days/week; 1.50 - 2.49 1-2 days/week ; 1.00 - 1.49 Never

Table 2. *Level of Aerobic Physical Activity in terms of Intensity*

Indicators	Mean	SD	Verbal Interpretation
1. Running, jogging, swimming, Zumba, or Bicycling	2.31	1.22	Light
2. Heavy housework (e.g. digging, refitting a kitchen/bathroom)	3.33	1.48	Moderate
3. Heavy manual (e.g. moving heavy furniture, cleaning windows)	2.92	1.34	Moderate
4. Walking to and from work, and all other walking done for recreation, sport, and exercise, or leisure.	2.88	1.47	Moderate
5. Farming	2.84	1.48	Moderate
Overall Mean	2.86	1.40	Moderate

Legend: *4.50 - 5.00 Very Hard; 3.50 - 4.49 Hard; 2.50 - 3.49 Moderate; 1.50 - 2.49 Light; 1.00 - 1.4 Very Light*

Table 3. *Level of Aerobic Physical Activity in terms of Duration*

Indicators	Mean	SD	Verbal Interpretation
1. Running, jogging, swimming, Zumba, or Bicycling	2.50	1.42	60 – 90 minutes
2. Heavy housework (e.g. digging, refitting a kitchen/bathroom)	2.28	1.33	30 – 60 minutes
3. Heavy manual (e.g. moving heavy furniture, cleaning windows)	2.15	1.31	30 – 60 minutes
4. Walking to and from work, and all other walking done for recreation, sport, and exercise, or leisure.	3.60	1.42	60 – 90 minutes
5. Farming	2.50	1.49	60 – 90 minutes
Overall Mean	2.61	1.40	60 – 90 minutes

Legend: *4.50 - 5.00 More than 120 minutes; 3.50 - 4.49 90-120 minutes; 2.50 - 3.49 60-90 minutes; 1.50 - 2.49 30-60 minutes; 1.00 - 1.49 Less than 30 minutes*

Table 4. *Extent of Protection Motivation in terms of Perceived Severity*

Indicators	Mean	SD	Verbal Interpretation
1. Getting heart disease by not doing physical activity would be a very bad thing to happen to me.	2.80	0.93	Agree
2. Not engaging in physical activity will lead me to sedentary lifestyle.	2.68	0.85	Agree
3. I am at risk of having osteoporosis and other bone/muscle problems due to physical inactivity.	2.37	0.91	Disagree
4. It feels a little stiff or sore whenever I perform physical activity.	2.46	0.80	Agree
5. The disease caused by physical inactivity is a bigger threat to me than to most people.	2.66	0.90	Agree
Overall Mean	2.59	0.88	Agree

Legend: *3.50 - 4.00 Strongly Agree; 2.50 - 3.49 Agree; 1.50 - 2.49 Disagree; 1.00 - 1.49 Strongly Disagree*

Table 5. *The extent of Protection Motivation in terms of Perceived Vulnerability*

Indicators	Mean	SD	Verbal Interpretation
1. I fear of falling while doing physical activity.	2.64	0.86	Agree
2. If I don't get physical activity, I would be at risk for serious health problem.	2.83	0.85	Agree
3. I am too exhausted in doing physical activity.	2.53	0.75	Agree
4. I can't notice any improvement in fitness.	2.32	0.82	Disagree
5. I don't have secure environment to be physically active.	2.47	0.86	Disagree
Overall Mean	2.56	0.83	Agree

Legend: 3.50 - 4.00 Strongly Agree; 2.50 - 3.49 Agree; 1.50 - 2.49 Disagree; 1.00 - 1.49 Strongly Disagree

Table 6. *The extent of Protection Motivation in terms of Perceived Benefits or Response Efficacy*

Indicators	Mean	SD	Verbal Interpretation
1. Physical activity will help me get physically fit.	3.40	0.67	Agree
2. Physical activity will reduce my chances of getting serious health problems.	3.20	0.78	Agree
3. I will live longer if I am physically active.	3.38	0.69	Agree
4. Physical activity improves my mental health.	3.38	0.74	Agree
5. Physical activity helps me sleep better at night.	3.29	0.66	Agree
Overall Mean	3.33	0.71	Agree

Legend: 3.50 - 4.00 Strongly Agree; 2.50 - 3.49 Agree; 1.50 - 2.49 Disagree; 1.00 - 1.49 Strongly Disagree

Table 7. *Extent of Protection Motivation in terms of Self-Efficacy*

Indicators	Mean	SD	Verbal Interpretation
1. Physical activity helps me to have a more positive outlook in life.	3.33	0.62	Agree
2. Physical activity makes me feel better in general.	3.30	0.69	Agree

3. Physical activity improves my balance and flexibility.	3.33	0.67	Agree
4. Physical activity lets me keep in contact with friends.	3.18	0.66	Agree
5. Physical activity is fun for me.	3.28	0.81	Agree
Overall Mean	3.28	0.69	Agree

Legend: 3.50 - 4.00 Strongly Agree; 2.50 - 3.49 Agree; 1.50 - 2.49 Disagree; 1.00 - 1.49 Strongly Disagree

Table 8. *Perception of Physical Performance as to Body Movement*

Indicators	Mean	SD	Verbal Interpretation
1. Physical activity increases my muscle strength.	3.34	0.61	Agree
2. Physical activity increases my level of physical fitness.	3.35	0.61	Agree
3. Muscle tone is improved with physical activity.	3.34	0.67	Agree
4. Physical activity helps me decrease fatigue.	3.06	0.66	Agree
5. My physical endurance is improved by doing physical activity.	3.20	0.62	Agree
Overall Mean	3.26	0.63	Agree

Legend: 3.50 - 4.00 Strongly Agree; 2.50 - 3.49 Agree; 1.50 - 2.49 Disagree; 1.00 - 1.49 Strongly Disagree

Table 9. *Perception on Physical Performance as to Improve Functioning*

Indicators	Mean	SD	Verbal Interpretation
1. Physical activity improves my stamina.	3.25	0.67	Agree
2. Physical activity improves the functioning of my cardiovascular system.	3.20	0.67	Agree
3. Physical activity allows me to carry out normal activities without becoming tired.	3.19	0.66	Agree
4. Physical activity improves my quality of work.	3.19	0.69	Agree
5. Physical activity improves overall body functioning for me.	3.38	0.62	Agree
Overall Mean	3.24	0.66	Agree

Legend: 3.50 - 4.00 Strongly Agree; 2.50 - 3.49 Agree; 1.50 - 2.49 Disagree; 1.00 - 1.49 Strongly Disagree

Table 10. *Perception on Physical Performance as to Enhanced Sound Mind*

Indicators	Mean	SD	Verbal Interpretation
1. Physical activity helps me sleep better at night.	3.29	0.67	Agree
2. Physical activity improves my self-concept.	3.24	0.59	Agree
3. Physical activity increases my mental alertness.	3.14	0.67	Agree
4. Physical activity helps me cope with stress.	3.19	0.71	Agree
5. Physical activity sharpens my mind.	3.12	0.71	Agree
Overall Mean	3.20	0.67	Agree

Legend: 3.50 - 4.00 Strongly Agree; 2.50 - 3.49 Agree; 1.50 - 2.49 Disagree; 1.00 - 1.49 Strongly Disagree

Table 11. *Perception of Physical Performance as to Good Body Mechanics*

Indicators	Mean	SD	Verbal Interpretation
1. Physical activity improves my flexibility.	3.32	0.66	Agree
2. Physical activity helps reduce the risk of injury e.g. fall.	3.08	0.66	Agree
3. Physical activity delays the onset of major disability.	2.95	0.78	Agree
4. Physical activity helps strengthen my bone structure.	3.19	0.72	Agree
5. Physical activity improves my balance.	3.31	0.68	Agree
Overall Mean	3.17	0.70	Agree

Legend: *3.50 - 4.00 Strongly Agree; 2.50 - 3.49 Agree; 1.50 - 2.49 Disagree; 1.00 - 1.49 Strongly Disagree*

Table 12. *Relationship between Aerobic Physical Activity and Physical Performance*

Aerobic Physical Activity	Physical Performance of Middle-aged Women			
	Body Movements	Improve Functioning	Enhanced Sound Mind	Good Body Mechanics
Frequency	0.237*	0.132	0.266**	0.280**
Intensity	0.177	0.213*	0.321**	0.232*
Duration	0.202*	0.076	0.166	0.130

***Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). Coefficients: .90 to 1.00 (-.90 to -1.00) Very high positive (negative) correlation; .70 to .90 (-.70 to -.90) High positive (negative) correlation; .50 to .70 (-.50 to -.70) Moderate positive (negative) correlation; .30 to .50 (-.30 to -.50) Low positive (negative) correlation; and .00 to .30 (.00 to -.30) Negligible correlation*

Table 13. *Relationship between Protection Motivation and Physical Performance*

Protection Motivation	Physical Performance			
	Body Movements	Improve Functioning	Enhanced Sound Mind	Good Body Mechanics
Perceived Severity	0.410**	0.338**	0.515**	0.449**
Perceived Vulnerability	0.214*	0.184	0.289**	0.296**
Perceived Benefits or Response Efficacy	0.703**	0.699**	0.762**	0.709**
Self-Efficacy	0.688**	0.599**	0.665**	0.614**

***Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). Coefficients: .90 to 1.00 (-.90 to -1.00) Very high positive (negative) correlation; .70 to .90 (-.70 to -.90) High positive (negative) correlation; .50 to .70 (-.50 to -.70) Moderate positive (negative) correlation; .30 to .50 (-.30 to -.50) Low positive (negative) correlation; and .00 to .30 (.00 to -.30) Negligible correlation*

DISCUSSION

Table 1 shows the middle-aged women's level of aerobic physical activity as to frequency. The following are the descriptors of frequency: never, 1-2 days/week-rarely, 3 days/week-sometimes, 4-5 days/week-frequent, and almost every day or very frequent. The respondents obtained the highest mean of 4.44 with a 1.113 standard deviation, which was interpreted as 4 – 5 days/week on the 3rd indicator. Given that most of the respondents are housewives, they frequently engaged mostly in housework (Cleaning Floors, Washing Dishes, Cooking). On the other hand, indicator 1, Aerobic Physical Activity (e.g., swimming, jogging, aerobics, basketball, or workout), obtained the lowest mean of 2.37 with 1.522, which was interpreted as 1 -2 days/week. The middle-aged women are rarely performing aerobic physical activity since their residence is in a barrio and probably their location doesn't have a proper amenity. On average, the respondents performed the indicated aerobic physical activities for 3 days/week. It means that they engage in aerobic physical activity sometimes. However, to gain maximum benefits from aerobic physical activity, 3-5 days a week is best. Aerobic exercise has short-term psychological and physiological benefits, thus it's important to exercise often to maintain these advantages. According to research from the Centers for Disease Control, the Michigan Department of Community Health examined data from the 1996 and 1998

BRFSS and discovered that just 1 in 18 adults who identified walking as their primary form of exercise were getting enough exercise (Cooper, 2011).

Table 2 presents the middle-aged women's level of aerobic physical activity as to intensity. The respondents perceived the highest mean of 3.33 on indicator 2 (Heavy housework) with a standard deviation of 1.48 and an interpretation of moderate. On the other hand, the lowest mean of 2.31 with a 1.22 standard deviation and interpretation of light is on indicator 1 (Running, jogging, swimming, Zumba, or Bicycling). The overall mean was 2.86. This implies that the respondents performed moderate levels of aerobic physical activities. Empirical evidence suggests that engaging in high-intensity exercise may lead to an increase in stress levels rather than a reduction. Therefore, it is recommended to refrain from exceeding 80% of one's maximum heart rate. Optimal results can be achieved by engaging in moderate-intensity exercise, which typically involves maintaining a heart rate of approximately 60% of one's maximum capacity, considering individual age and circumstances. According to Cooper (2011), empirical evidence suggests that exercising at 50–60% of one's maximum heart rate yields similar advantageous outcomes as exercising at an intensity of 80% of one's maximum heart rate.

Table 3 presents the middle-aged women's levels of aerobic physical activity as to duration. Most of the indicators were described within 60-90 minutes with an overall mean of 2.61. It is depicted that the respondents' duration in aerobic physical activity is within 60-90 minutes. The following are the descriptors of duration: less than 30 minutes-not achieved, 30-60 minutes-slightly achieved, 60-90 minutes-moderately achieved, 90-120 minutes-achieved, and more than 120 minutes- highly achieved. Additionally, respondents believed that indication 4 had the highest mean of 3.60, the smallest standard deviation of 1.42, and the longest interpretation range of 60 to 90 minutes (Walking to and from work, and all other walking done for recreation, sport, exercise, or leisure). Since several of the respondents live close to the school where their kids go, especially during the week, they only moderately met the duration goal. Indicator 3 obtained the lowest mean of 2.15 with a 1.31 standard deviation and an interpretation of 30 to 60 minutes (Heavy manual). They barely met this criterion, perhaps because there aren't many middle-aged males participating in this activity for them. It is advised that middle-aged women who exercise get a minimum of 150 minutes of moderate aerobic activity, 75 minutes of strenuous aerobic activity, or a combination of both levels each week. It is advised to spread out this exercise over the course of a week, per the instructions. Higher levels of physical activity are linked to better health outcomes. Physical activity of any intensity is helpful. Short bursts of physical activity spread throughout the day might add up to positive health effects (Laskowski, 2021).

The data presented in Table 4 shows the middle-aged women's extent of protection motivation in terms of perceived severity. Assessment has an overall mean of 2.59 and indicator 1 "Getting heart disease by not doing physical activity would be a very bad thing to happen to me" has the highest mean of 2.80 with a standard deviation of 0.93 and interpretation of agree which implies that the respondents agreed that there was a protection motivation among middle-aged women in terms of perceived severity. The

respondents protect themselves from the severity of threats associated with physical inactivity, which is why they are motivated to perform aerobic physical activity. Meanwhile, the lowest mean of 2.80 with a standard deviation of 0.93 and interpretation of agreement obtained by indicator 3 (I am at risk of having osteoporosis and other bone/muscle problems due to physical inactivity). Typically, some instances are viewed as more dangerous than others (such as a myocardial infarction brought on by inactivity) (a pound too much body weight for an intermediate time). The greater the health danger, the more probable it is that a motivation will arise, and a suggested activity will be adopted (Courneya, 2015).

The data presented in Table 5 shows a summary of middle-aged women's extent of protection motivation in terms of perceived vulnerability. The respondents perceived the highest mean of 2.83 with 0.85 standard deviation on the second indicator which tells that if middle-aged women don't get physical activity, they would be at risk for serious health problems. Meanwhile, indicator 4 has the lowest mean of 2.32 which says that the respondents disagreed that they can't notice any improvement in fitness. They may disagree because they are not consistent in performing aerobic physical activity. Moreover, most indicators fall under Agree Level which indicates that the middle-aged women agreed that they are protected from risks since they are engaged in aerobic physical activity.

Table 6 presents the extent of protection motivation in terms of perceived benefits. The respondents' perceived the highest mean of 3.40 on indicator 1 (Physical activity will help me get physically fit.) with a standard deviation of 0.67. However, indicator 2 obtained the lowest mean of 3.20 (Physical activity will reduce my chances of getting serious health problems). This shows that they agreed with the benefits of aerobic physical activity because it improves their mental health, helps them to be physically fit, and sleep better at night. According to Kotecki and Thomas (2017), scholarly investigations have concurred that engaging in exercise and physical activity can be advantageous for individuals of all ages and can facilitate the enhancement of their overall health and daily routine.

Table 7 shows the middle-aged women's extent of protection motivation in terms of self-efficacy. The respondents perceived the highest mean of 3.33 on the 1st and 3rd indicators which shows that the respondents agreed that physical activity helps them to have a more positive outlook in life and it improves their balance and flexibility. On the other hand, indicator 4 (Physical activity lets me keep in contact with friends.) obtained the lowest mean of 3.18. This indicates that they are too far from their friends since they live in a barrio. All indicators fall under the Agree category with an overall mean of 3.28. It means that they have self-efficacy when they perform such activities since it improves their balance and flexibility, makes them feel better in general, and have a positive outlook in life. According to Kotecki and Thomas (2017), physical activity can exert a favorable influence on both our physical appearance and our self-perception of it. Robust and sturdy musculature enables improved body alignment and a distinct elegance in locomotion. The maintenance of muscular fitness is a crucial factor in promoting a positive perception of one's physical appearance.

Table 8 presents middle-aged women's perception of their physical performance. The respondents perceived the highest mean of 3.35 on indicator 2 (Physical activity increases my level of physical fitness) with a standard deviation of 0.61 and an interpretation of agree. On the other hand, the lowest mean of 3.06 with a 0.66 standard deviation and interpretation of agree is on indicator 4 (Physical activity helps me decrease fatigue). The overall mean was 3.26. This describes that the respondents are physically performing since they agreed that they increase muscle strength, and physical fitness and improved their physical endurance.

Table 9 presents middle-aged women's perception of physical performance in terms of improved functioning. All indicators fall under the Agree category with an overall mean of 3.24. It is depicted that the respondents have physical performance since it shows that it improves their body function in general. Furthermore, the respondents perceived the highest mean of 3.38 with a standard deviation of 0.62 and interpretation of agree on indicator 5 (Physical activity improves overall body functioning for me). Meanwhile, the lowest mean of 3.19 with 0.66 and 0.69 standard deviation and interpretation of agree was obtained by indicator 3 and 4 (Physical activity allows me to carry out normal activities without becoming tired and Physical activity improves my quality of work).

The data presented on table 10 shows the middle-aged women's perception of physical performance in terms of enhanced sound mind. Assessment has an overall mean of 3.20 and indicator 1 "Physical activity helps me sleep better at night" has the highest mean of 3.29 with a standard deviation of 0.67 and interpretation of agree which implies that the respondents agreed that they are physically performing because physical activity helps them cope with stress and sharpens their mind. Meanwhile, the lowest mean of 3.12 with a standard deviation of 0.71 and interpretation of agree obtained by indicator 5 (Physical activity sharpens my mind).

The data presented in Table 11 shows a summary of middle-aged women's perception of physical performance in terms of good body mechanics. The first indicator, which indicates that physical exercise enhances the respondents' flexibility, received the highest mean rating from the respondents—3.32 with a 0.66 standard deviation. The respondents believed that physical activity prevents the onset of significant disability, and indication 3 has the lowest mean of 2.95. Moreover, most indicators fall under Agree Level which indicates that the middle-aged women agreed that they are performing physically because they have achieved good body mechanics. The concept of body mechanics pertains to the synchronized functioning of the musculoskeletal system and the nervous system to uphold equilibrium, stance, and arrangement while carrying out activities such as mobilizing, relocating, and orienting patients. According to Perry et al., (2014), the implementation of appropriate body mechanics enables individuals to perform tasks with minimal exertion and reduces the likelihood of injuries for both patients and healthcare practitioners.

Table 12 presents that the following indicators for aerobic physical activity and physical performance of middle-aged women have a *very weak relationship*: frequency and improve functioning (r=0.132), intensity and body movement (r=0.177), duration and

improving functioning (r=0.076), and duration and good body mechanics (r=0.130). At 0.05 level of significance, the two variables *have no significant relationship* with each other. It just shows that middle-aged women are not physically performing since in aerobic physical activity, middle-aged women should perform at least 150 minutes a week to have a greater health benefit. On the other hand, the physical performance of middle-aged women obtained a *weak relationship*: frequency and body movements (r=0.237), frequency and enhanced Sound Mind(r=0.266), frequency and good body mechanics (r=0.280), intensity and improve functioning (r=0.213), intensity and enhanced sound mind (r=0.321), intensity and good body mechanics (r=0.232), and duration and body movements (r=0.202). At 0.05 level of significance, each variable had *a significant relationship* with each other. It implies that the respondents are physically performing because it is ideal to perform aerobic physical activity within 3 days/week and engaged in moderate intensity aerobic activity.

Table 13 shows that the computed r-value also indicated that protection motivation in terms of perceived severity, perceived benefits, and self-efficacy, have a significant relationship to each indicator for physical performance at 0.05 level of significance. However, even though the degree of relationship is weak, the computed r-value indicated that protection motivation in terms of perceived vulnerability had a significant relationship to each indicator for physical performance at 0.05 level of significance except for improved functioning. This shows that middle-aged women protect themselves from the severity of threats and risk which is why they are motivated to engage in aerobic physical activity that makes them physically performing.

Conclusions

The findings gathered in the study led to the formulation of the conclusion: (1) Since it was found out that there was insignificant and significant relationship existed between and among the variables of aerobic physical activity and physical performance, then the null hypothesis is partially sustained; and (2) Given that there was a significant relationship existed between and among the variables of protection motivation and physical performance, the null hypothesis is not sustained.

Recommendations

Based on the results and conclusions of the study, the following recommendations are hereby suggested: (1) For future researchers, they may create a fitness plan for middle-aged women. They may also involve other genders and age group as respondents; and (2) For the Local Health Officers, they can make the result of the study as a springboard in engaging middle-aged adults in aerobic physical activities where they can be productive and improve their fitness. This will also provide meaningful data for the

improvement of their municipality in terms of projects, programs, and activities that will be implemented in middle-aged women.

Compliance with Ethical Standards

The authors declare compliance in ethical standard. All respondents gave their informed consent for inclusion before they participated in the study. Their anonymity has been observed as well. No conflict or harm has been done in gathering data. Proper citation of related literature and studies are maintained. More importantly, there is no bias or prejudice in the findings and results of this study.

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ASSESSMENT OF LEAN SIX SIGMA IMPLEMENTATION IN ADDRESSING INTERNAL COST OF POOR QUALITY IN SELECTED ELECTRONICS COMPANY IN LAGUNA

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ABSTRACT

In today's competitive corporate environment, strong competition, technological advances, and changing customer preferences affect financial performance and strategic goals. Companies used to believe that great quality meant high manufacturing costs, so they cut expenses while retaining quality to be reasonable. However, this strategy accidentally created the Cost of Poor Quality (COPQ), which thus emphasizes the importance of quality costs. A recognized electronics manufacturing unit in Binan, Laguna, has been using Lean Six Sigma (LSS) in machining and in printed circuit board (PCB) assembly to provide complete customer solutions. The fact that PCB manufacturing scrap and rework rates remain high highlights the need for continued analysis and evidence-based quality management improvements. This research focused on a Binan, Laguna, electronics company. The study used a descriptive research methodology with a quantitative approach to assess Lean Six Sigma's implementation in addressing the internal cost of poor quality, including scrap and rework. The electronics company's Lean Six Sigma success factors were examined. Data-driven suggestions for improving the internal scrap and rework were presented. A well-structured and verified survey checklist, intercontinental Lean Six Sigma implementation studies across industries, and secondary data from the specified research location were used to collect and validate the data. The study’s analysis found only partial implementation of Lean and Six Sigma process controls, especially in scrap and rework, which thus required targeted interventions. Lean six-sigma process control methods, including value stream mapping, kanban systems, DMAIC (Define, Measure, Analyze, Improve, Control), and capability analysis, had low response scores. Training to improve staff skills and competency, supplier development and qualification, and supplier involvement in continuous

improvement initiatives effect implementation. Lean process control and Six Sigma deployment needed improvement, specifically the necessity for focused interventions to address internal challenges across the company. By analyzing these results, the application of the RESOLVE and ENHANCE frameworks was developed, and they served as a strategic response to the findings regarding the level of implementation of Lean Six Sigma and the factors affecting this implementation. The RESOLVE framework addressed the identified deficiencies in training and competency levels among employees. On the other hand, the ENHANCE framework targeted the improvement of supplier development and qualification processes while involving suppliers in continuous improvement activities.

Keywords: *Lean Six Sigma, Cost of Poor Quality, Scrap, Rework, Continuous Improvement*

INTRODUCTION

Companies attempted to reduce production expenses while maintaining high standards of quality, with the aim of making the products accessible to the intended market at reasonable prices. Unfortunately, many companies unintentionally gave the opportunity for one more concern, the cost of poor quality (COPQ). COPQ is the total cost that could be avoided if instances of poor quality did not occur. Even reducing quality costs could have significant effects on a business (Törnblom, 2022).

The electronics manufacturing sector in the Philippines accounts for approximately 60 percent of the country's total manufacturing output, making it one of the most important contributors to the industry's overall production (Statistica Research Department, 2023). Binan, Laguna, has been one of the focal points for electronics manufacturing enterprises in the region, drawing the attention of both domestic and foreign customers. The study was conducted at a company situated in Binan Laguna. Over the past months, the company has experienced a scrap ratio of 0.71% and a rework ratio of 0.40%. Additionally, the PCB final assembly line has maintained an average of 10,970 defective parts per million for the past 10 months.

Research Questions

This research identified and provided answers to the following research problems and objectives in terms of implementation of lean six sigma in addressing internal cost poor quality.

1. What is the level of implementation of Lean Six Sigma in addressing the internal cost of poor quality in terms of addressing the concerns for the following final products:
   i. Scrap
   ii. Rework

2. What is the degree of engagement of engineers on the factors contributing to the level of implementation of Lean Six Sigma to address the internal cost of poor quality in the final product's scrap and rework?
3. What improvement initiatives can be recommended in addressing the cost of poor quality for internal issues related to the final product's scrap and rework?

METHODOLOGY

Research Design

The study employed descriptive research and quantitative methods to examine engineers' assessments of the implementation of lean six sigma in addressing the cost of poor quality (COPQ) in a selected electronics company in Laguna. The study used a survey questionnaire as the primary data collection instrument, supported by secondary data from the research locale and a review of related literature.

Research Locale

The research focused on a Binan Laguna-based Japanese multinational company that manufactures electronics PCBs for storage devices. The research scrutinized the application of Lean Six Sigma in this organization to enhance internal quality and production processes. This research aimed to examine how Lean Six Sigma can improve electronics PCB manufacturing by reducing internal costs associated with poor quality, such as scrap and rework.

Population and Design

This study includes manufacturing engineers, who serve an essential role in implementing and evaluating Lean Six Sigma systems. Their experiences provided ideas for using Lean Six Sigma to reduce the cost of poor quality. The study used a total of 43 qualified manufacturing engineers who were actively involved in the company's manufacturing processes.

Research Instruments

This study employs a survey questionnaire as its research instrument, comprising two primary sections. Part 1 asked about the extent to which Lean Six Sigma process controls have been implemented to address the internal cost of poor quality, specifically the scrap and rework of the final product. Part 2 inquired about the degree of engagement with the factors contributing to the level of implementation of Lean Six Sigma. Standard practices in the industry and lean six-sigma literature served as the basis for the survey questionnaire. This second portion of the survey identified factors and asked respondents about their positive engagement. The questionnaires were pre-tested and validated through pilot testing and expert reviews to ensure their reliability and validity. The

researchers used Cronbach's alpha to confirm the reliability and validity of the questionnaires, ensuring their clarity and comprehensiveness.

Data Gathering Procedure

The researchers administered the questionnaires for the quantitative research through an online Google Form to the respondents, allowing them to access them through their personal email accounts or social media platforms. The researchers requested and gathered secondary data from the company to supplement significant information for the research. A thorough review of the relevant related literature was also conducted to support and substantiate the responses to the survey.

Management and Treatment of Data

The level of implementation of lean six-sigma process controls and the degree of engagement of the engineers were gathered both through the survey questionnaire and secondary sources. The researchers conducted the analysis using percentage frequency and weighted sum calculations. Based on data analysis and industry standards, recommendations were made to improve Lean Six Sigma deployment and advance continuous improvement programs.

Scope and Limitations

The study focused on a selected electronics company in Laguna and assessed the current procedures used by the chosen organization on the cost of poor quality (COPQ), with particular attention given to internal factors such as scrap and rework. The study's primary limitation was its narrow scope, as it only investigated one electronics company in Laguna. Only engineers employed by the organization participated in the assessments as respondents. The study's population did not include technicians and operators. The study only focused on the internal variables of scrap and rework, not thoroughly examining the external factors that contributed to the cost of poor quality. The study's exclusive reliance on quantitative methods for data acquisition and analysis also failed to adequately capture the qualitative complexities of Lean Six Sigma implementation.

RESULTS AND DISCUSSION

I. Level of Implementation of Lean Six Sigma in addressing Internal Cost of Poor Quality

A. Scrap

i. Lean

The engineers' evaluation indicated that 60% of most responses had only partial implementations. The researchers observed low implementation scores for lean process

controls in value stream mapping and Kanban, with consecutive responses of 5% and 2%. This observation implies a fundamental problem in the description of the operations' value chain and underscores possible avenues for enhancement and optimization in order to expedite scrap management processes.

Lee and Kim (2021) provided insights into why some companies have only partially implemented lean process control tools. The authors emphasized issues such as data complexity, limited analytical capabilities, and organizational reluctance to change as variables leading to the partial implementation of Lean Six Sigma. In their study on quality costs and application in a manufacturing enterprise, Eraslan (2021) also noted that the partial implementation of lean process control tools was due to management's lack of awareness about COPQ.

ii. Six Sigma

Overall engineering assessments described the implementation of Six Sigma as partially implemented. Statistical Process Control (SPC) and Control Charts revealed low scores in the implementation of six-sigma process control tools for addressing scrap, with 2% of the engineers assessing these controls as non-implemented. This highlighted a significant shortfall in leveraging advanced statistical techniques to enhance process efficiency and reduce scrap.

Studies by Chaurasia et al. (2019) and Ruiz et al. (2022) provided substantial support to the engineers' assessment of the application of Six Sigma control tools to reduce the internal cost of poor quality, specifically waste. The study by Chaurasia et al. showed the outcomes of their research into how to use Lean Six Sigma ideas to boost performance in the auto industry, focusing on completing tasks on the first try and getting rid of rejects. The study emphasized how effective Six Sigma methods are at finding and fixing the root causes of waste, which leads to big improvements in process efficiency and lower costs across the board.

B. Rework

i. Lean

About 56% of engineers reported moderate application of lean approaches to address rework issues, indicating a good effort. Few engineers employed lean process control methods for rework, such as value stream mapping and Kanban, with 2% confirming no implementation. In order to effectively address rework challenges and enhance operational efficiency, the evaluation emphasized the need for further implementation of lean process control tools.

Puteri and Zagloel's (2022) research, which focused on developing a supplier quality monitoring system in the electronics manufacturing sector, provided valuable insights into the moderate application of lean process controls to address rework concerns. The authors underscored the potential benefits of implementing a methodical strategy for supplier quality management, which included effective cost reduction through

rectification and increased operational efficiency. The results of the present study, which demonstrated a moderate level of implementation of lean process controls to address reprocessing issues, were consistent with the literature. In the world of electronics manufacturing, this showed how important it is to use proactive quality management strategies, like the ones suggested by Puteri and Zagloel (2022), to make processes more efficient and cut down on the need for reprocessing.

ii. Six Sigma

67% of respondents reported partial implementation. Despite applying some Six Sigma ideas, there was still a need for further integration and application of its approach to effectively address rework. Merely 2% of responses indicated no implementation of SPC and control charts. The results indicate that the company implemented Six Sigma principles and techniques. However, several methods could be improved.

Numerous studies validated the current level of Six Sigma implementation at the designated electronics company. In their investigation, Sodhi et al. (2019) identified process variability, design defects, and supplier issues as the fundamental causes of scrap. According to Alsada and Kumar (2022), Yemeni industrial organizations generate waste due to incoming material defects in production materials and finished products. According to Fogg (2022), organizations in the United States argued that manufacturers ought to take waste rates into account rather than exclusively prioritizing maximum output. A variety of factors can cause scrap, which frequently results from inefficient processes.

II. Degree of Engagement in the factors Affecting the Level of Implementation of Lean Six Sigma in Addressing Internal Cost of Poor Quality

The management's commitment and level of support throughout the organization's Lean Six Sigma implementation process engaged and positively impacted the engineers, as evident in the average responses to neutral engagements to all the assessed factors. The electronics company saw that its manufacturing engineers weren't very interested in training, supplier development, and activities that involved continuous improvement. This was shown by the fact that 9%, 28%, and 33% of them said they weren't engaged, respectively. This highlights the organization's need to confront and possibly readjust its approaches in order to promote increased employee engagement and efficiently support lean six-sigma goals. This is especially true when considering the raw material value chain in PCB manufacturing, which starts with the supplier's quality.

The survey findings highlighted the key factors influencing Lean Six Sigma implementation, with some aspects showing high engagement and others receiving neutral assessments. Mahmood (2021) identified critical success factors for minimizing the cost of poor quality in construction projects, emphasizing the pivotal role of management commitment. The survey's findings, which show a correlation between strong leadership support and higher levels of engagement in Lean Six Sigma initiatives, are in line with Mahmood's findings. Moreover, in quality review during product design and development, Galli (2021) discusses how the cost of poor-quality factors comes into

play in continuous improvement models. Effective quality review processes during product design and development, as indicated in the survey, aligned with Galli's emphasis on continuous improvement, thereby contributing to overall engagement in Lean Six Sigma practices.

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On the other hand, for factor training to raise the competency of employees, Srivastava's (2020) study highlighted the impact of Six Sigma methodologies on improving process output through employee competency enhancement. While the neutral assessment suggested a balanced focus on this factor, Srivastava's research underscored the importance of training initiatives for effective Lean Six Sigma implementation. Additionally, Bhushi et al. (2023) addressed the issue of poor quality costs in the auto industry, often attributed to supplier-related issues. Although the present study’s survey indicated a neutral assessment, Bushi et al.'s insights underscored the significance of developing and qualifying suppliers to ensure quality inputs into the production process. Lastly, for the factor of supplier involvement in continuous improvement initiatives, which 45% of the respondents rated as neutral, Galli (2021) emphasized the importance of integrating suppliers into continuous improvement efforts. Galli's insights highlighted the importance of supplier involvement in addressing quality issues upstream in the supply chain.

III. Improvement Initiatives in Addressing the Cost of Poor Quality for Internal Issues related to the Final Product’s Scrap and Rework

A. Enhancement of Lean Six Sigma Process Controls by Comprehensive Training Initiative

Figure 1 illustrates how the RESOLVE training framework provides a comprehensive strategy to address low training scores and enhance the skills and competencies of employees. The main goal of this method is to help people learn how to use the Kanban system, value stream mapping (VSM), and Six Sigma principles, which include the DMAIC approach and capability analysis. The organization should encourage employee evaluation of their current training methods and staff competencies to pinpoint areas for enhancement, guarantee the achievement of training objectives, enhance

learning methods, organize training content, apply the DMAIC methodology, validate through capability analysis, and continuously evaluate and iterate.

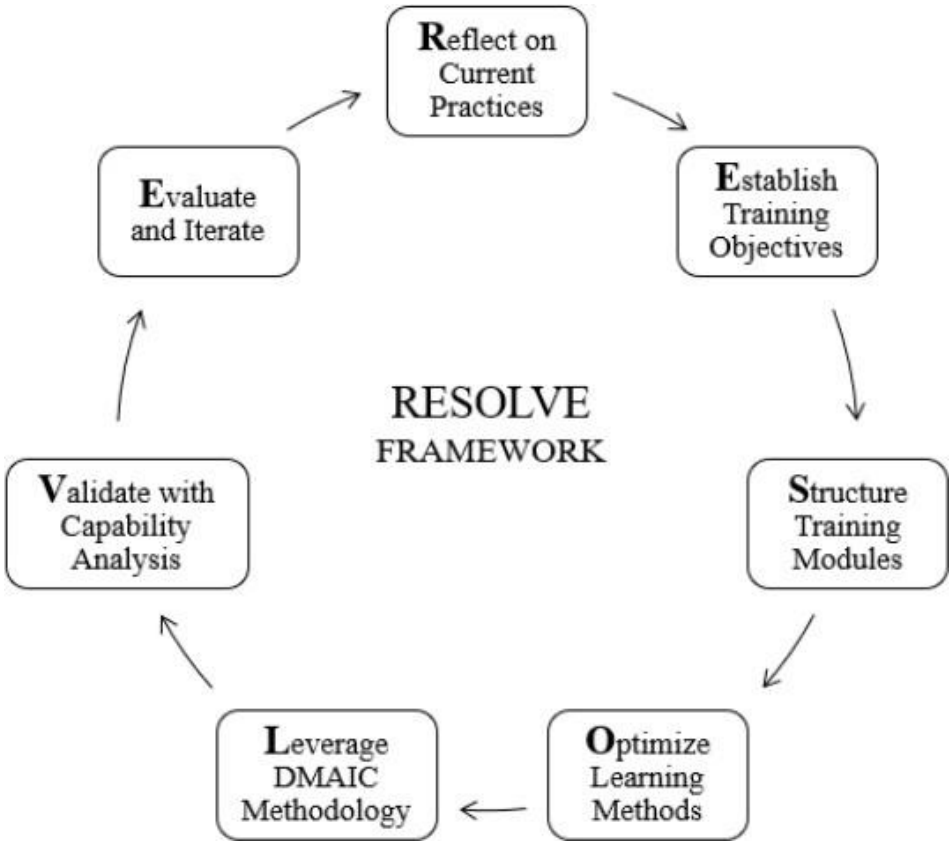


Figure 1. RESOLVE Training Framework

B. Strengthening Supplier Performance through Continuous Improvement Initiatives

A framework was developed to guide the organization in the possibility of applying this initiative towards supplier performance improvement which is shown in figure 2.

The company's suppliers are the primary focus of the organization's continuous improvement initiatives. In order to achieve this, it is imperative to engage suppliers in collaborative improvement initiatives, encourage them to submit proposals for process improvements and innovations, and work together to address common obstacles and opportunities.

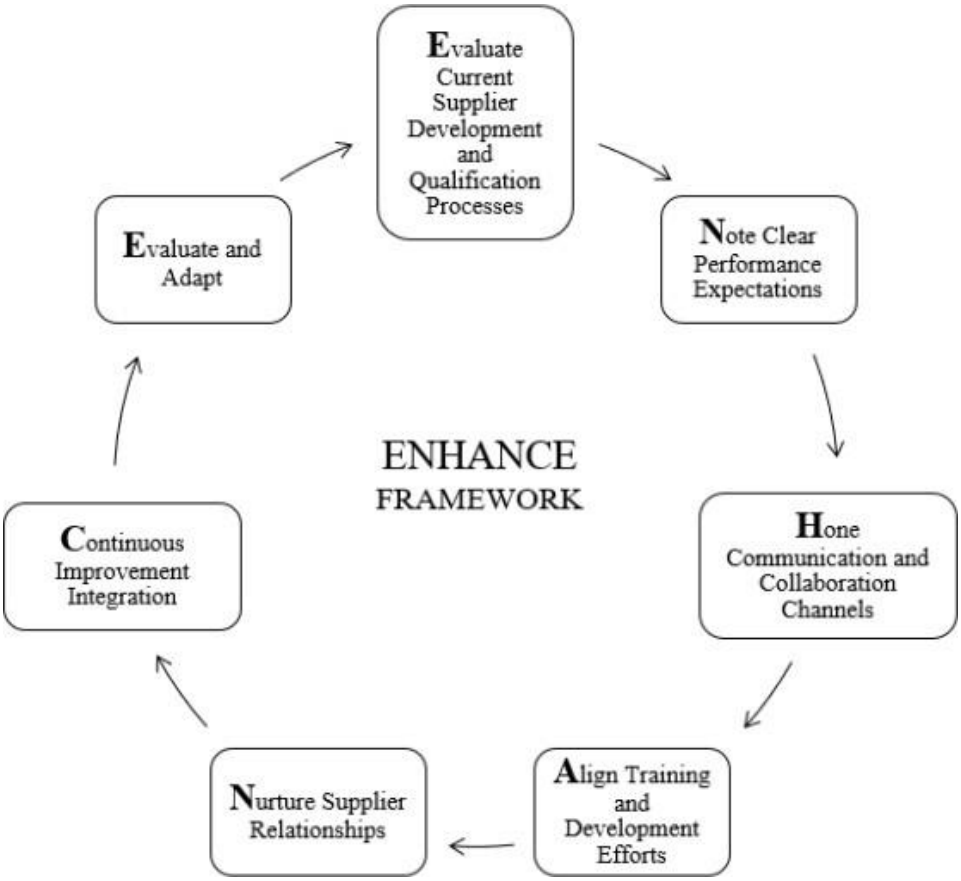


Figure 2. ENHANCE Framework

The organization is able to capitalize on the expertise of its suppliers and achieve significant improvements in both quality and efficiency by incorporating them into its efforts to achieve continuous improvement. The organization can effectively enhance supplier performance and reduce the cost of poor quality by involving these stakeholders in the implementation of the ENHANCE Framework.

Conclusions

After a comprehensive and data-driven study, the researcher had formulated the following conclusions :

1. The analysis revealed that the organization only partially implements Lean process control and Six Sigma to address the internal cost of poor quality, as evidenced by scrap and rework. This underscores the need for focused interventions to boost effectiveness and drive continuous improvement. The areas of focus for improvement include Values Stream Mapping, Kanban Systems for Lean Process Controls in DMAIC, and Capability Analysis for Six Sigma process control tools. Overcoming these

barriers and optimizing tool usage are crucial for achieving the desired outcomes of enhanced process efficiency and quality performance. Targeted interventions are important to enhance tool implementation and effectively address internal issues across the organization.

2. It is evident that the organization demonstrates a commendable level of engagement in certain aspects crucial to Lean Six Sigma implementation, particularly in management support and quality review during product design and development phases. However, the engineers' assessments indicate notable gaps in engagement across various other factors, leading to disengagement. These areas include employee training to improve skills and competencies, supplier development and qualifications, and involvement in the organization's continuous improvement initiatives. To effectively deal with issues related to rework, scrap, and overall quality improvement, it will be necessary to prioritize and increase organizational engagement in these areas. This will lead to long-lasting improvements in operational efficiency and quality performance.

3. The application of the RESOLVE and ENHANCE frameworks serves as a strategic response to the research findings regarding the level of implementation of Lean Six Sigma and the factors affecting it. It focuses on improving skills and knowledge in Lean Six Sigma principles like the Kanban system, value stream mapping, DMAIC methodology, and capability analysis. The RESOLVE framework fixes the problems that have been found with employees' training and knowledge. By systematically addressing these training gaps, organizations can equip their workforce with the necessary knowledge and abilities to effectively implement Lean Six Sigma practices. On the other hand, the ENHANCE framework aims to improve supplier development and qualification processes in order to involve suppliers in continuous improvement activities. By nurturing strong supplier relationships and integrating them into improvement initiatives, organizations can enhance the effectiveness and sustainability of their Lean Six Sigma implementation efforts.

Recommendations

1. The researchers recommended that the company conduct targeted interventions to boost the effectiveness of lean process control and Six Sigma implementation to address internal costs of poor quality, such as scrap and rework. The enhancement of value stream mapping and Kanban systems for lean process controls, as well as the application of DMAIC and capability analysis for Six Sigma process control tools, are among the areas of concentration highlighted. The Quality Assurance Manager, in charge of the Quality Management Department, must launch projects aimed at optimizing the use of these technologies to achieve this. This will include the implementation of specific training programs for employees participating in the improvement process, the provision of resources and support for ongoing skill development, and the establishment of clear performance objectives for tool use. If the organization addresses these impediments and enhances the use of tools, it may be

able to promote continuous improvement, improve process efficiency, and improve overall quality performance across all departments.

2. The findings recommended that the organization prioritize and strengthen its involvement in key areas critical to the adoption of Lean Six Sigma practices. It is important to prioritize the enhancement of engagement in training to improve employees' skills and competencies. Additionally, the Human Resources Department may prioritize the development and qualifications of suppliers, as well as their participation in continuous improvement initiatives. It is essential for the Human Resources Department, under the guidance of the Training and Development Manager, to spearhead the creation and execution of thorough training programs that focus on improving employee skills and competencies in Lean Six Sigma methodologies. The procurement management department, led by the procurement manager, should focus on improving supplier development and qualification processes, as well as promoting collaboration with suppliers in ongoing improvement initiatives. By focusing on engagement in these areas, the organization can effectively tackle issues related to rework, scrap, and overall quality improvement, resulting in long-term improvements in operational efficiency and quality performance.

3. It was recommended that the organization adopt and execute the RESOLVE and ENHANCE frameworks to augment the efficacy of Lean Six Sigma implementation. Under the direction of the Quality Assurance Manager, the Quality Management Department should assume primary responsibility to implement the RESOLVE framework. This entails methodically rectifying inadequacies in employee training and competency levels through the development and implementation of specialized training programs that center on Lean Six Sigma principles, including Capability Analysis, Value Stream Mapping, the Kanban system, and DMAIC methodology. Concurrently, the Procurement Department ought to take the lead in executing the ENHANCE framework, under the direction of the Procurement Manager. To enhance supplier development and qualification procedures, this framework incorporates suppliers into activities geared toward continuous improvement. By fostering robust supplier relationships and actively engaging them in improvement endeavors, the organization can bolster the sustainability and efficacy of its Lean Six Sigma implementation endeavors, and thereby facilitate the ongoing enhancements and attain operational excellence.

4. To enhance the comprehensiveness of the study and address factors not covered, it was recommended to the future researchers to adopt a mixed-method approach. This approach would involve conducting in-depth interviews among respondents to gain deeper insights into their perspectives and experiences related to Lean Six Sigma implementation and its impact on the internal cost of poor quality. Additionally, expanding the research locale to include other electronics industries in Laguna for comparative analysis would provide a broader understanding of the effectiveness of Lean Six Sigma practices across different organizational contexts. Furthermore, extending the study to examine the external cost of poor quality, such as customer returns, warranty claims, and reputation damage, would offer a more holistic view of the implications of quality issues beyond the organization's internal operations. By incorporating these recommendations, the study can provide more comprehensive

insights and recommendations for improving Lean Six Sigma implementation and quality management practices in the electronics industry.

Compliance with Ethical Standards

The authors affirm that this study was conducted in accordance with rigorous ethical standards, guaranteeing that all respondents provided informed consent and were also permitted to disengage from the study at any phase. Respondent anonymity was meticulously preserved to ensure their privacy, and their welfare was prioritized throughout the research process. The study was conducted without any conflict of interest, and all measures were taken to prevent plagiarism. The findings were interpreted with fairness, and the results were exclusively employed for research purposes.

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AWARENESS AND ATTITUDE TOWARDS 3D PRINTING AMONG MECHANICAL ENGINEERING STUDENTS IN A STATE UNIVERSITY

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ABSTRACT

This study significantly determines the awareness and attitude of fourth year Mechanical Engineering students about the functions and the benefits in utilizing 3D Printers. In order to conduct a study, participants answered a survey questionnaire, using 5-point Likert scale to measure the magnitude of their agreement and opinion. There is a total of 32 fourth year Mechanical Engineering students in a chosen public higher education institution who participated in the survey. The content in the survey are related to the different types of 3D Printers available in the market but limited to material extrusion types, their awareness on the features and cost of 3D Printers, and their behavior towards it. The data were encoded and analyzed using SPSS through T-test, ANOVA and Pearson's r method. It has been discovered that the students have fair comprehension or exhibit neutrality regarding the types of 3D Printing, and their awareness about the existing of 3D Printers. On the other hand, participants expressed their positive attitude on eagerness to learn and know more about 3D Printing technology. Moreover, participants believed that the benefits and contribution of 3D Printing in integrating to the subject curriculum in educational institution will enhance their skills and expertise in hands-on learning experiences, foster creativity and innovations, and prepare them as a future professional in helping diversify the community to meet the technology trends.

Keywords: *3D Printers Awareness; Emerging Technology; 3D Printer on SUC*

INTRODUCTION

Technology makes life easier and safer. It's true that technology is altering our personal lives and the whole world in an almost infinite number of ways. Regardless, it is typical for people to criticize these accomplishments. (Jones, 2022)

Modern technology in this modern era gives a big impact and changes in the society and every community. The evolution of these inventions makes the living easier, better, and faster from a conventional appliances to an automated and controlled electronically. Businessman and innovator benefited the importance of modern technology especially in digital fabrications because the digital fabrication as a whole, makes the processing more easily and faster in their specific products and projects. When it comes to education and in academe, digital fabrication is new in mind especially to those who are not aware about the new technology arrived.

Introduction to digital fabrication for higher education institution is a mix of excitement to those who are willing to explore the new technology and confusion to those who have no knowledge with the technology. Digital fabrication is a series of manufacturing and design process where the data process from one software drives another software or equipment to form a geometrical shapes or figures. One of the most popular digital fabrication existing nowadays is 3D printing. The 3D printing is an additive manufacturing just like a printer that prints in 2D and makes a series of layer until the model from the layout will complete that can be seen and touched.

3D printing has recently become a critical tool in the geoscience research, education, and technical communication due to the expansion of the market for 3D printers and materials. 3D printing changes the perception of how we interact with our data and how we explain our science to non-experts, researchers, educators, and stakeholders. (Ishutov et al., 2021).

Digital fabrication is an emerging new technology for the developing countries. In higher education institution, awareness of 3D printing technology was not yet implemented due to newly established laboratory under research and this advanced technology is not included in the course curriculum of students. The current conventional teaching of faculty is more on theories, illustration and explanation which the students cannot appreciate because they could not see the actual appearance. If the 3D printing is introduced to class lectures, the students could understand and gain more knowledge regarding its potential uses and benefits.

In the Philippines, the inclusion of 3D Printing in the curriculum is still an unusual practice in schools. Unlike in western countries where 3D Printing had been made a standard part of the school curriculum, from grade school to the tertiary level. (CIIT Philippines School - Multimedia Arts, Web Design, 3D Animation, Mobile Game Development, 2019)

3D printing technology in higher educational institution has limited approach to digital fabrications due to the inadequate understanding or introduction of new technology that only exists on other countries. During the assessment with the teaching personnel of public higher education institution using Key Informant Interview (KII), teachers expressed their sentiments about the low literacy on the importance of digital fabrications among the students like 3D Printing technology. Teachers wished to include the kinds of digital fabrications that existed in the market like 3D Printers to the curriculum to enhance the student's skills and knowledge in line with their chosen profession as future engineers.

To fill the gaps between the industry and academe, government agency like the Department of Trade and Industry initiated and spearheaded the establishment of Fabrication Laboratory (FabLab) in State University wherein the agency provided machines and equipment including the 3D printing, through the collaboration of Department of Science and Technology to train, give advice and develop new ideas to the instructors. 3D printing offers a world of possibilities, but it has its limitations. Stanford researchers are stretching the boundaries of current printing models and finding innovative ways to solve pressing dilemmas of design, engineering, and medicine. (Banks, 2023)

In general, there was an educational effect through 3DP lessons that the students were able to more deeply understand the current market demands and use of 3DP in various industries including fashion and gain their interest in 3D modeling and 3DP in the fashion field. (Kwon et al, 2017). By establishing the Fabrication Laboratory in State University, faculty, researchers and students can broaden their knowledge in the field of science and technology areas that complement their course curriculum, and bridge the academe-industry integration for further research and development of the graduate professionals.

Research Objectives

This study generally aims to determine the awareness and attitude towards 3D Printing among Mechanical Engineering students in a State University.

Specifically, this study has the following objectives:
1. Describe the student's profile in terms of sex, age, and geographical location;

2. Describe the level of awareness and attitude of Mechanical Engineering students in a state university in 3D Printing technology in terms of FDM, Bio-printing, and Construction 3D as classified according to sex, age, and geographical location;

3. Determine if there is significant difference in the level of awareness and attitude of Mechanical Engineering students in a state university in the types of 3D Printing technology in terms of FDM, Bio-printing, and Construction 3D as classified according to sex, age, and geographical location; and

4. Determine if there is significant relationships in the awareness and attitude towards 3D Printing among Mechanical Engineering students in a state university.

METHODOLOGY

The research design of this study utilized Quantitative approach and Descriptive Inferential type. The researcher observed, collected and analyzed the numerical data based on the statistical relationship of student's awareness and the student profile. This study provided a detailed explanation or description of characteristics and behaviors of particular population. The data was taken on a small sample of respondents to draw inferences with regards to the larger population.

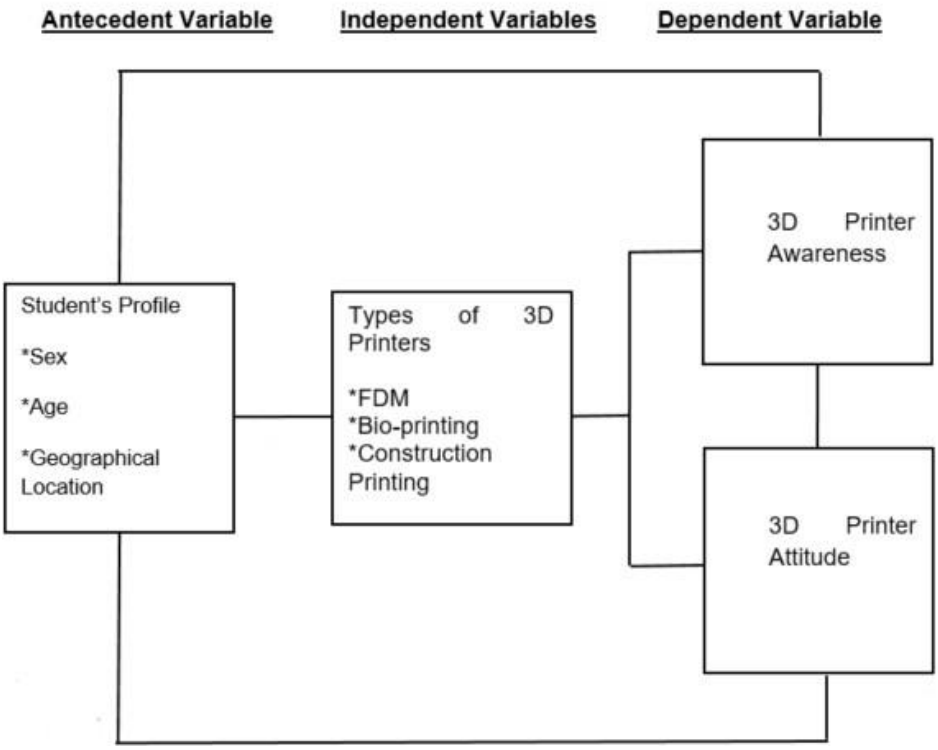
Connectivism learning theory state that knowledge has many authors, knowledge has many facets, it looks different to each person, and it changes moment to moment. A piece of knowledge isn't a description of something, it is a way of relating to something. (Downes, 2021).

This research utilizes connectivism and transformative learning theory based on the study of Western Governors University (2020 and 2021) wherein the learners gained new knowledge and information that essentially changed their view in the world, and in the influence of new technology that existed. In this theory, the students are identifying the gaps in their knowledge about the emergence of digital fabrications in the universities and colleges.

The Figure 1 below illustrates the relationship of antecedent variable, independent variable, and dependent variable about 3D printing awareness and attitude of fourth year Mechanical Engineering students of a state university. The student's profile in terms of sex, age, and geographical location is identified as antecedent variables. The types of 3D printing printers limited to materials extrusion like Fused Deposition Modeling (FDM), 3D Bio-printing, and Construction 3D Printing refers to independent variable. The dependent variable in this study are their awareness and attitude towards 3D Printing. An assumption has been stated that the Types of 3D Printing technology has significant relationship to the awareness and attitude among the Mechanical Engineering students in state university. Additionally, an assumption proposed that the student's profile in terms of sex, age, and geographical location are significantly related to their awareness and attitude. The hypothesized interaction of the variable is shown in Figure 1 below.

Figure 1

Awareness and Attitude Towards 3D Printing Among Mechanical Engineering students in a state university.



2.2 Research Locale

The researcher used a purposive sampling technique to ensure the alignment of the research goals and to obtain more meaningful results. Using this sampling technique, the researcher intentionally chose individuals who could provide valuable insights relevant to the study. The respondents of this study were fourth-year students taking up Bachelor of Science in Mechanical Engineering from Iloilo Science and Technology University - Main Campus. Data was collected during the second semester of the academic year 2023-2024. The Mechanical Engineering course was chosen due to the relatable application of 3D printing technology to their profession in designing and prototyping.

2.3 Research Participants

The researcher used a purposive sampling technique to ensure the alignment of the research goals and more meaningful results. Using this sampling technique, the researcher intentionally chose individuals that can provide valuable insight with regard to the research study. The respondents of this study were the fourth (4th) year students taking up Bachelor of Science in Mechanical Engineering from Iloilo Science and Technology University - Main Campus. The data was taken during the second semester

of academic year 2023-2024. The researcher chose on Mechanical Engineering course due to a relatable application of 3D printing technology to their chosen profession in designing and prototyping.

2.4 Research Instrument

The instrument used in gathering data on 3D printing awareness was survey disseminated to the respondents through a hard copy questionnaire. In this instrument, the respondents answered the survey form/questionnaire by checking the appropriate box in relation to their awareness and attitudes towards 3D printing. The questionnaire consisted of four sections.

The first part of questionnaire collected personal details of the respondents in terms of sex, age, and geographical location.

Likert scale questions allow respondents to share their level of agreement with a statement using a numerical scale. A Likert rating scale is useful for measuring opinions, attitudes, and knowledge. (Houston, 2024)

The second part of the main questionnaire was on the types of 3D Printing technology which is limited only to material extrusion type specifically its sub-types like Fused Deposition Modeling (FDM), 3D Bio-printing, and Construction 3D Printing. Using 5-point Likert scale, each item in the questionnaire determined the respondent's degree of agreement and disagreement with the statement based on the following criteria:

5 = Strongly agree
4 = Agree
3 = Fair
2 = Disagree
1 = Strongly disagree

The third part of the main questionnaire was on the awareness of the respondents towards 3D Printing. Each item in the questionnaire determined the respondent's degree of agreement and disagreement with the statement based on the following criteria:

5 = Strongly agree
4 = Agree
3 = Fair
2 = Disagree
1 = Strongly disagree

The fourth part of the main questionnaire was on the attitude of respondents towards 3D Printing. Each item in the questionnaire determined the respondent's degree of agreement and disagreement with the statement based on the following criteria:

5 = Strongly agree

4 = Agree
3 = Fair
2 = Disagree
1 = Strongly disagree

Content Validity of the Questionnaire

Content validity is the degree to which a test or assessment instrument evaluates all aspects of the topic, construct, or behavior that it is designed to measure. (Frost, 2024)

The questionnaire was reviewed and validated by consultants who have expertise in the field regarding for some suggestions for improvements and changes. The consultants are manager of fabrication laboratory, college instructor in software applications, and research adviser.

Reliability of the Questionnaire

PSS (Statistical Package for the Social Sciences) is a software package used for statistical analysis in the social sciences, including fields such as monitoring and evaluation. It was originally developed in the late 1960s by IBM and has since become one of the most widely used statistical software packages in the world. (EvalCommunity, 2023)

The reliability of the software application used was analyzed using the SPSS (Statistical Package for Social Science). In this tool, data collected are encoded in the system to generate statistical data like frequency counts, percentage analysis, means and standard deviations. This tool also tabulated results using T-test, ANOVA, and Pearson's r methods.

2.5 Data Gathering Procedure

The data collection provides the basis for reliability estimations. Thus, a good data collection procedure is crucial to ensure that the reliability estimate is trustworthy. A prediction is never better than the data on which it is based. (Wohlin, 2003)

The procedure of this study on gathering data are based on stated step by step process as follows:

i. The first step was to identify the total population of the fourth year students taking Mechanical Engineering. Due to a small number of entire group and researcher’s own judgment to select individuals to meet the specific criteria relevant to the research question, the researcher used Purposive sampling and chose the entire fourth year Mechanical Engineering students of a chosen public higher education institution. In using purposive sampling, the research goals of the research aligned which leads to a more focused results.

ii. After establishing of number of target respondents, the next step was to develop survey form for respondents chosen. The contents of survey form included the respondent's profile in terms of sex, age, and geographical location. The survey included the respondent's understanding of the 3D printing, the several types of material extrusion, and the level of awareness of participants in 3D printing technology.

iii. Before the survey, the questionnaire was validated through pretesting. Through this procedure, the developed survey was check and verified by the experts or the people who understand the specific study so that the questionnaire would be understandable and interpretable by the intended respondents.

iv. When the survey form was completed, the questionnaire was endorsed to the College Dean including the request for conducting the survey to participants which are the students of the university. With this, the researcher was granted permission on taking data to the students and the College Dean was aware of the conduct of the study.

v. The researcher selected respondents in a random procedure. The gathering of data was taken as an entire group regardless of the respondent's section he or she belong.

vi. Before taking the survey, the researcher obtained consent from the students based on the guidelines of Republic Act 10173 or the Data Privacy Act of 2012. This law enacted by the Philippine government to provide and protect the personal and sensitive data from the respondents. By disclosure consent of participant to researcher, the researcher treated the data with utmost confidentiality.

vii. After the consent, the questionnaire was given to the respondents directly and they answered the respective questions stated in the form. The respondent's answer is in the form of checklist and based on their awareness about 3D printing technology.

viii. After answering, the forms were collected for data analysis procedure and discuss the results.

2.6 Ethical Considerations

Ethical considerations are implemented in research as it needs to adhere to the code of conduct when it comes to collecting data from participants. The goal of this research is to give information and understanding on the importance of 3D printing for the advancement of technology in the university specifically the fourth year Mechanical Engineering students in integrating the 3D printer in academe. Participants were informed of the risks and they gave consent to answer the survey. Their data were kept with utmost confidentiality. After the survey, the researcher collected the answered questionnaire.

RESULTS

Questionnaire Type used to Determine the Awareness and Attitude of students

A 5-point Likert scale is used in answering the questionnaire with the following equivalent: 5 = Strongly agree means the respondent has highest level of agreement or conviction in a statement, 4 = Agree means the respondent has positive response to the statement with some extent but not strong as “strongly agree”, 3 = Fair means the respondent has a neutrality or indicating neither agree or disagree in a statement, 2 = Disagree means respondent has negative response to the statement with some extent but not strong as “strongly disagree”, and 1 = Strongly disagree means has highest level of disagreement in a statement.

Interpretation of Data Scaling

For the mean scale, the following are the equivalent point: 4.20-5.00 = Strongly agree means the respondent has highest level of agreement or conviction in a statement, 3.40-4.19 = Agree means the respondent has positive response to the statement with some extent but not strong as “strongly agree”, 2.60-3.39 = Fair means the respondent has a neutrality or indicating neither agree or disagree in a statement, 1.80-2.59 = Disagree means respondent has negative response to the statement with some extent but not strong as “strongly disagree”, and 1.0-1.79 = Strongly disagree means has highest level of disagreement in a statement.

For T-Test (used in 2-groups), ANOVA (used in 3 or more groups), and Correlation, the following are the interpreted values: If p-value(significance) > level of significance (alpha), the null hypothesis is accepted. If p-value(significance) < level of significance (alpha), the null hypothesis is rejected, and accept alternative hypothesis. In this study, the value of alpha is set at 0.05.

Student’s Profile

The total number of fourth year mechanical engineering students in the Iloilo Science and Technology is 32 including both male and female. Table 1 below shows the complete headcount and percentage of the respondents based on the respondent’s filling of survey forms:

Table 1a

Describe the student’s profile in terms of sex

Sex	Frequency	Percent	Valid Percent	Cumulative Percent
Male	20	62.5	62.5	62.5
Female	12	37.5	37.5	100.0
Total	32	100.0	100.0	

The result in Table 1a shows that the majority of the fourth year Mechanical Engineering students of Iloilo Science and Technology University are male composed of 62.5 percent compared to female composed only of 37.5 percent in terms of sex.

Table 1b

Describe the student's profile in terms of age

Age	Frequency	Percent	Valid Percent	Cumulative Percent
21	2	6.3	6.3	6.3
22	26	81.3	81.3	87.5
23	3	9.4	9.4	96.9
24	1	3.1	3.1	100.0
Total	32	100.0	100.0	

Table 1b above shows that the common age of fourth year mechanical engineering students is 22 years old composed of 81.3 percent. The rest are one or two year above and below the common age.

Table 1c

Describe the student's profile in terms of geographical location

Geographical Location	Frequency	Percent	Valid Percent	Cumulative Percent
Urban	13	40.6	40.6	40.6
Rural	19	59.4	59.4	100.0
Total	32	100.0	100.0	

Table 1c above shows that the graphical location of fourth year Mechanical Engineering students are majority living in a rural area with composition of 59.4 percent compared to urban area with 40.6 percent.

Types of 3D Printing Technology among Mechanical Engineering students

This study described the various 3D Printing Technology perceived by the mechanical engineering students according to sex, age, and geographical location. In introducing the several types of 3D Printing Technology, the researcher limited the scope to Material Extrusion types of 3D Printers like Fused Deposition Modeling, Bio-printing, and Construction.

In the survey form, respondents were given questions related to identifying the brief definition of types of 3D Printing Technology limited to Fused Deposition Modeling, Bio-printing and Construction 3D.

Table 2a

Types of 3D Printing Technology perceived by students in terms of sex

Sex	Mean	N	Standard Deviation
Male	2.7500	20	1.07265
Female	2.7500	12	0.76045
Total	2.7500	32	0.95415

Table 2a shows that both male and female respondents are in a 2.75 mean scale (falls in 2.60-3.39 - Fair). It means that the respondents, regardless of their age, neither agree nor disagree on describing the types of 3D Printing they perceived.

Table 2b

Types of 3D Printing Technology perceived by students in terms of age

Age	Mean	N	Standard Deviation
21	3.1667	2	1.17851
22	2.7628	26	0.99462
23	2.1667	3	0.44096
24	3.3333	1	0.0000
Total	2.7500	32	0.95415

Table 2b shows that the entire age of respondents listed above falls on the mean scale of 2.60-3.39 or Fair. It means that the respondents, regardless of their age, neither agree nor disagree on describing the types of 3D Printing they perceived.

Table 2c

Types of 3D Printing Technology perceived by students in terms of geographical location

Geographical Location	Mean	N	Standard Deviation
Urban	2.6795	13	1.05071
Rural	2.7982	19	0.90877
Total	2.7500	32	0.95415

Table 2c shows that, regardless of the respondents' living orientation, the mean scale falls in 2.60-3.39 or Fair. It means that the respondents neither agree nor disagree on describing the types of 3D Printing they perceived like in the case in terms of their sex, and age.

Awareness towards 3D Printing among Mechanical Engineering students

Awareness is the one's perception or understanding in something. To identify the perception of mechanical engineering students as a respondents, questions related to awareness have included in the survey. Some of the questions are their familiarity, visualization, accessibility to use, and cost of 3D Printer.

Table 3a

Awareness towards 3D Printing perceived by students in terms of sex

Sex	Mean	N	Standard Deviation
Male	3.1700	20	0.63669
Female	3.2833	12	0.34597
Total	3.2125	32	0.54225

Table 3a above shows that the total population of respondents falls in the mean scale of 2.60-3.39 or Fair. The result revealed that whether they are male or female, they have doubt or neutral understanding on the familiarity and purpose of 3D Printers.

Table 3b

Awareness towards 3D Printing perceived by students in terms of age

Age	Mean	N	Standard Deviation
21	3.8000	2	0.28284
22	3.2077	26	0.53211
23	2.8000	3	0.60000
24	3.4000	1	0.00000
Total	3.2125	32	0.54225

Table 3b shows that the majority of age groups expressed neutral or fair in their awareness about the 3D Printing technology, whether they agree or disagree. The result falls on the mean scale of 2.60-3.39.

Table 3c

Awareness towards 3D Printing perceived by students in terms of geographical location

Geographical Location	Mean	N	Standard Deviation
Urban	3.1692	13	0.68238
Rural	3.2421	19	0.44010
Total	3.2125	32	0.54225

In the living orientation of respondent, Table 3c shows that whether they live in a city or in province, they expressed their neutral or fair view in their awareness about the 3D Printing technology. The result falls on the mean scale of 2.60-3.39.

In summary, based on the result of the study, the students have low or neutral awareness towards 3D Printing Technology which is similar to the result of the study of Oke, Atofarati, and Bello (2022) which reveals that many individuals have low awareness of 3D printing technology.

Attitude towards 3D Printing among Mechanical Engineering students

Attitude for 3D Printing is a key factor that influence the utilization for industry and in academe. In determining the mechanical engineering students' attitude towards 3D printing, they were asked about the utilization of 3D Printers in the prototype making, knowing more about 3D Printing, and inclusion to the subject curriculum, and training and seminar.

Table 4a

Attitude towards 3D Printing perceived by students in terms of sex

Sex	Mean	N	Standard Deviation
Male	4.1400	20	0.82360
Female	4.2000	12	0.79544
Total	4.1625	32	0.80071

Table 4a reveals that all respondents, either a male or female, have a positive outlook on utilizing the importance and the benefits of 3D Printing. Specifically, females (mean scale falls on 4.20-5.00 - Strongly Agree) show with stronger belief that the the 3D printer is beneficial to the academe and to the curriculum compared to male (falls on 3.40-4.19 - Agree).

Table 4b

Attitude towards 3D Printing perceived by students in terms of age

Age	Mean	N	Standard Deviation
21	4.4000	2	0.28284
22	4.2385	26	0.79603
23	3.7333	3	0.94516
24	3.0000	1	0.00000
Total	4.1625	32	0.80071

Table 4b shows that the age bracket differs on what are their attitude toward 3D Printing. The younger age have a strong willingness to utilize 3D Printer (mean scale falls on 4.20-5.00 - Strongly Agree), compared to the older ones (falls on 3.40-4.19 - Agree). Overall,

majority of the respondents with regards to their age have a positive response on the importance of 3D Printer in their curriculum and their profession.

Table 4c

Attitude towards 3D Printing perceived by students in terms of geographical location

Geographical Location	Mean	N	Standard Deviation
Urban	4.3077	13	0.73310
Rural	4.0632	19	0.84867
Total	4.1625	32	0.80071

Table 4c shows that the city living respondents have a high level of eagerness to learn and utilize the 3D Printer compared to the province dwellers. Combining the results, respondents, whether in the city or province, have a positive outlook for the 3D printing technology for the inclusion in the subject curriculum.

Based on the result of the study, the students have positive attitude towards 3D Printing Technology which is similar to the result of the study of Maloy, et al. (2017) which reveals in the case of teachers that 3D Printing technology have positive outlook for future lectures.

Determining Significant Differences in the Types of 3D Printing Technology

Table 5a

Group Statistics of Respondents in terms of sex

Sex	Mean	N	Standard Deviation	Standard Error Mean
Male	2.7500	20	1.07265	0.23985
Female	2.7500	12	0.76045	0.21952

Table 5b

Independent Samples Test using T-Test

	t	df	Sig. (2-tailed)
Equal variances assumed	0.000	30	1.000
Equal variances not assumed	0.000	29.007	1.000

Using T-test in Table 5b, the data shows that the 2-tailed significance is 1.0 which is greater than the level of significance (alpha = 0.05), therefore the result accepts the null hypothesis in terms of sex.

Table 5c

Group Statistics of Respondents in terms of age using ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.713	3	0.571	0.603	0.619
Within Groups	26.510	28	0.947		
Total	28.222	31			

Using ANOVA (Analysis of Variance) in Table 5c, the data shows that the significance is 0.619 which is greater than the level of significance (alpha = 0.05), therefore the result accepts the null hypothesis in terms of age.

Table 5d

Group Statistics of Respondents in terms of graphical location

Sex	Mean	N	Standard Deviation	Standard Error Mean
Urban	2.6795	13	1.05071	0.29141
Rural	2.7982	19	0.90877	0.20849

Table 5e

Independent Samples Test using T-Test

	t	df	Sig. (2-tailed)
Equal variances assumed	-0.341	30	0.736
Equal variances not assumed	-0.311	23.350	0.743

Using T-test in Table 5e, the data shows that the 2-tailed significance is 0.736 which is greater than the level of significance (alpha = 0.05), therefore the result accepts the null hypothesis in terms of geographical location.

In summary, the result accepts the null hypothesis in objective which states that there is no significant difference in the types of 3D Printing technology in terms of FDM, Bio-printing, and Construction 3D as perceived among the mechanical engineering students in a state university taken as an entire group and classified according to sex, age, and geographical location.

Determining Significant Differences in the Awareness towards 3D Printing

Table 6a

Group Statistics of Respondents in terms of sex

Sex	Mean	N	Standard Deviation	Standard Error Mean
Male	3.1700	20	0.63669	0.14237
Female	3.2833	12	0.34597	0.09987

Table 6b

Independent Samples Test using T-Test

	t	df	Sig. (2-tailed)
Equal variances assumed	-0.566	30	0.576
Equal variances not assumed	-0.652	29.826	0.520

Using T-test in Table 6b, the data shows that the 2-tailed significance is 0.576 which is greater than the level of significance (alpha = 0.05), therefore the result accepts the null hypothesis in terms of sex.

Table 6c

Group Statistics of Respondents in terms of age using ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.237	3	0.412	1.465	0.245
Within Groups	7.878	28	0.281		
Total	9.115	31			

Using ANOVA (Analysis of Variance) in Table 6c, the data shows that the significance is 0.245 which is greater than the level of significance (alpha = 0.05), therefore the result accepts the null hypothesis in terms of age.

Table 6d

Group Statistics of Respondents in terms of graphical location

Sex	Mean	N	Standard Deviation	Standard Error Mean
Urban	3.1692	13	0.68238	0.18926

Rural	3.2421	19	0.44010	0.10096

Table 6e

Independent Samples Test using T-Test

	t	df	Sig. (2-tailed)
Equal variances assumed	-0.368	30	0.715
Equal variances not assumed	-0.340	18.788	0.738

Using T-test in Table 6e, the data shows that the 2-tailed significance is 0.715 which is greater than the level of significance (alpha = 0.05), therefore the result accepts the null hypothesis in terms of geographical location.

In summary, the result accepts the null hypothesis in objective stating that there is no significant difference in the awareness towards 3D Printing among mechanical engineering students in a state university taken as an entire group and classified according to sex, age, and geographical location.

Determining Significant Differences in the Attitude towards 3D Printing

Table 7a

Group Statistics of Respondents in terms of sex

Sex	Mean	N	Standard Deviation	Standard Error Mean
Male	4.1400	20	0.82360	0.18416
Female	4.2000	12	0.79544	0.22962

Table 7b

Independent Samples Test using T-Test

	t	df	Sig. (2-tailed)
Equal variances assumed	-0.202	30	0.841
Equal variances not assumed	-0.204	29.962	0.840

Using T-test in Table 7b, the data shows that the 2-tailed significance is 0.841 which is greater than the level of significance (alpha = 0.05), therefore the result accepts the null hypothesis in terms of sex.

Table 7c

Group Statistics of Respondents in terms of age using ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.167	3	0.722	1.142	0.349
Within Groups	17.708	28	0.632		
Total	19.875	31			

Using ANOVA (Analysis of Variance) in Table 7c, the data shows that the significance is 0.349 which is greater than the level of significance (alpha = 0.05), therefore the result accepts the null hypothesis in terms of age.

Table 7d

Group Statistics of Respondents in terms of graphical location

Sex	Mean	N	Standard Deviation	Standard Error Mean
Urban	4.3077	13	0.73310	0.20333
Rural	4.0632	19	0.84867	0.19470

Table 7e

Independent Samples Test using T-Test

	t	df	Sig. (2-tailed)
Equal variances assumed	0.845	30	0.405
Equal variances not assumed	0.869	28.257	0.392

Using T-test in Table 7e, the data shows that the 2-tailed significance is 0.405 which is greater than the level of significance (alpha = 0.05), therefore the result accepts the null hypothesis in terms of geographical location.

In summary, the result accepts the null hypothesis in objective stating that there is no significant difference in the Attitude towards 3D Printing among mechanical engineering students in a state university taken as an entire group and classified according to sex, age, and geographical location.

Determining Significant Relationships of Types of 3D Printing technology, Awareness, and Attitude towards 3D Printing

Table 8

Correlations using Pearson's r method

		Types of 3D Printing Technology	Awareness towards 3D Printing	Attitude towards 3D Printing
Types of 3D Printing Technology	Pearson Correlation	1	0.621	0.429
	Sig. (2-tailed)		0.000	0.014
Awareness towards 3D Printing	Pearson Correlation	0.621	1	0.269
	Sig. (2-tailed)	0.000		0.137
Attitude towards 3D Printing	Pearson Correlation	0.429	0.269	1
	Sig. (2-tailed)	0.014	0.137	

Table 8 shows the correlations of three 3 variables with results that the relationship of Awareness towards 3D Printing to Attitude toward 3D Printing with significance of 0.137 and accepts null hypothesis in the objective but the Types of 3D Printing Technology to Awareness and Attitudes towards 3D Printing in their corresponding value of significance is below to the level of significance (0.000 and 0.014 respectively). There are some instances that the students are aware or have perception on what the 3D Printing is, but they do not know all about the Types of 3D Printing technology existing. The same applies in the student's willingness or positive attitude towards 3D Printing but not familiar with the different Types of 3D Printing technology.

DISCUSSION

In relation to the result of this study, the importance of 3D Printing technology gives profound impact to the various sectors and individuals who will benefited from this proposal. Moreover, it gave further increase in awareness and attitude towards 3D Printing among mechanical engineering students in a State University. Several sectors benefited to the findings of the study.

3D printing offers real educational benefits by promoting the culture of active learning, innovation, design, and problem solving. It is holistically tied to STEM education connecting multiple STEM subject areas, particularly the areas of engineering and technology. (Novak, 2022)

In educational institutions, the implications of findings of this study shows that every institution should include the 3D Printing technology to the curriculum so that it could increase the level of awareness and attitude of students towards 3D Printing.

The implications of this findings could include Administrators realizing the increasing knowledge of graduates towards digital fabrications like 3D Printing. If the students posses high level of awareness towards 3D Printing, their graduates will be equipped with extraordinary skills in digital fabrication needed in industry trends. Policymakers in education acknowledged the impact of awareness and attitude of mechanical engineering students towards the importance of 3D Printing technology. They saw the positive effect of the digital fabrication in the field of engineering, and implemented a policy to include 3D Printing technology to the engineering courses for more skills and expertise developed by the graduates. Employers and industry sectors benefited the graduates equipped with skills and expertise in 3D Printing technology. Emerging technology nowadays are evolving to meet the industry trends. These sectors prefer a graduate with high level of awareness and attitude on digital fabrications like 3D Printing to expect competency about digital world workforce.

Faculty and Educators are the mentors of every students in nurturing their capabilities and skills in preparation of career advancement in relation to industry needs. Teachers introducing 3D Printing technology to students gave implications of increasing their level of awareness and attitude leading to innovate creativity and learning experience.

Students are the main beneficiaries of this study. Findings of this research study includes getting higher level of awareness and attitude towards 3D Printing, making students develop interest in digital fabrication, enhancing their practical skills, and fostering creativity and innovation in this digital age.

Lastly, the implication of this findings to researchers is that it increased their awareness and attitude towards 3D Printing and as basis to conduct study in relation to awareness and attitude towards 3D Printing in other institutions.

Conclusions

Through the comprehensive findings of the study, several conclusions were established: In the result of describing the Types of 3D Printing technology, respondents expressed their perception on neutrality or fair with either they agree or disagree regarding on their understanding the different types of 3D Printing. Respondents had confusion on the actual number of different types of 3D Printers available in the market.

In the result of describing the Awareness towards 3D Printing, respondents expressed their perception on neutrality or fair with either they agree or disagree regarding their awareness in 3D Printing whether they have already seen or not, they do not know the actual cost of printer, and they have doubt on popularity of the 3D Printer.

In the result of describing the Attitude towards 3D Printing, respondents expressed their perception on favorable attitude towards the statement but not indicating as strong agreement. Respondents had willingness that the 3D Printers must be utilized, joined in seminars and training, or inclusion in the academia.

In hypothesis number 1, result accepts the null hypothesis in objective which states that there is no significant difference in the types of 3D Printing technology in terms of FDM, Bio-printing, and Construction 3D as perceived among the mechanical engineering students in a state university taken as an entire group and classified according to sex, age, and geographical location.

In hypothesis number 2, result accepts the null hypothesis in objective which states that there is no significant difference in the awareness towards 3D Printing among mechanical engineering students in a state university taken as an entire group and classified according to sex, age, and geographical location.

In hypothesis number 3, result accepts the null hypothesis in objective which states that there is no significant difference in the Attitude towards 3D Printing among mechanical engineering students in a state university taken as an entire group and classified according to sex, age, and geographical location.

In hypothesis number 4, the correlations of three 3 variables with results that the relationship of Awareness towards 3D Printing to Attitude toward 3D Printing with significance of 0.137 and accepts null hypothesis in the objective but the Types of 3D Printing Technology to Awareness and Attitudes towards 3D Printing in their corresponding value of significance is below to the level of significance (0.000 and 0.014 respectively). There are some instances that the students were aware or have perception on what the 3D Printing is but they do not know all about the Types of 3D Printing technology existing. The same thought applies on student's willingness or positive attitude towards 3D Printing but not familiar with the different Types of 3D Printing technology.

Recommendations

In the light of research findings, the recommendation of using 3D Printer in the research prototypes can further explore the potential of student in material selection, design process, and post-processing techniques. Aside from this, using 3D Printing in research prototypes can give the student a choice on customizing design and layout making it unique and with originality.

Due to the evolving technology trends, incorporating hand-on 3D Printing through conducting seminars and training about the 3D Printing can enhance the skills, foster creativity, and engagement of participants to align and cater the needs of industry. 3D Printing training builds collaborations to networking with other trainers, and improve skills development for an industry ready competency.

The academe has a critical role in shaping the student's educational experience. Integration of digital fabrication like 3D Printing to the educational institution enhance the student's skills and expertise in hands-on learning experiences, foster creativity and innovations, and prepare students as a future expert professional in helping diversify the community to meet the technology trends.

Lastly, it is recommended to other aspiring researchers and academicians of diverse program that this research be repeated to confirm the result of this study.

Compliance with Ethical Standards

Ethical considerations are implemented in research as it needs to adhere to the code of conduct when it comes to collecting data from participants. The goal of this research is to give information and understanding on the importance of 3D printing for the advancement of technology in the university specifically the fourth year Mechanical Engineering students in integrating the 3D printer in academe. Participants were informed of the risks and they gave consent to answer the survey. Their data were kept with utmost confidentiality. After the survey, the researcher collected the answered questionnaire.

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BEYOND ACCESS: EXPLORING ACCESSIBILITY, CHALLENGES, AND PERCEPTIONS OF HEALTHCARE AMONG SENIOR CITIZENS IN PAYATAS, QUEZON CITY

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ABSTRACT

Republic Act No. 9994, the Expanded Senior Citizen Act of 2010 in the Philippines, enhances benefits for those aged 60 and above, acknowledging their societal contributions. It offers increased discounts on medical services and goods, tax exemptions, and priority access to government services, such as basic healthcare services. This qualitative study focuses on the experiences of ten (10) senior citizen participants, five (5) males and five (5) females aged 60 and above, accessed through purposive sampling. Data were collected via semi-structured, open-ended interviews conducted during monthly senior citizens' events and home visits. The interviews, conducted in English and Filipino, were analyzed through coding and thematizing to organize coherent themes. Findings reveal significant gaps in awareness among senior citizens regarding barangay-specific healthcare programs and services. Identified barriers include physical distance to health facilities, inconsistent service availability, and prolonged waiting times. Participants suggest personalized care, better service access, and expanded outreach programs. While some senior citizens commend the healthcare center's efficiency and quality, others express dissatisfaction with wait times, staff approachability, and medication availability. The study underscores the critical role of barangay health centers in senior citizen healthcare access and the necessity for improved communication and service enhancements in local healthcare systems. Identifying key barriers and perceptions highlights the need for targeted interventions to improve service delivery, staff training, and medication availability. Implementing these recommendations could significantly enhance healthcare experiences for seniors,

promoting their health, fulfillment, and overall well-being, thus aligning with the objectives of the Expanded Senior Citizen Act of 2010.

Keywords: *Perception, Barriers, Senior citizen, Elderly, Healthcare Center, Qualitative research*

INTRODUCTION

As the global population ages, the healthcare needs of senior citizens become increasingly vital. According to the World Health Organization (2022), the reported rise in the global aging population is taking place, and the consequences of this demographic shift are only now being comprehended at both the national and international levels. This transformation has widespread implications across various sectors of society, influencing the need for commodities and services like housing, transportation, and social welfare. Additionally, it affects family dynamics, intergenerational connections, and labor and financial markets (Dugarova, 2016). This demographic shift is particularly evident in countries like Japan and Singapore, where the proportion of elderly individuals exceeds that of younger demographics, presenting unique challenges regarding healthcare, social services, and economic sustainability (Apolitical, 2020).

In the Philippines, like many other nations, addressing the health and well-being of the elderly has emerged as a prominent concern, especially in one of the largest and most populous barangays in the nation, Quezon City. Grappling with the challenges of ensuring adequate healthcare access and services for its retired senior citizens, the success of health center programs in this bustling urban community can be measured beyond mere accessibility; it must encompass the active engagement and participation of retired senior citizens as a central metric.

Attitudes toward aging and senior citizens exhibit substantial variation across different cultures and geographic regions. While some societies deeply respect their elders, valuing them as repositories of wisdom and experience, others marginalize or underestimate their contributions. As senior citizens grow older, they encounter various difficulties, such as societal stigmatization and prevalent negative attitudes, often found in contexts portrayed in the media (Edström, 2018). Familial generational dynamics and broader socioeconomic and political factors profoundly influence these perceptions.

The term "senior citizen" in the Philippines refers to individuals 60 years old and above. This definition stems from Republic Act No. 9994, commonly referred to as the "Expanded Senior Citizens Act of 2010," enacted on February 15, 2010. Under this law, senior citizens are entitled to various privileges and benefits, including discounts on goods and services, access to social services and healthcare, and other incentives to improve their quality of life and well-being (Republic of the Philippines, 2010).

The research aims to delve deeply into these programs, uncovering their intricate aspects and assessing their impact on the well-being of the senior population. It seeks to shed light on both the challenges faced by senior citizens and the healthcare providers

responsible for these initiatives. Furthermore, this research explores innovative strategies and interventions that could enhance senior citizens' active participation in healthcare center programs. With a strong commitment to improving the senior healthcare experience, the study aspires to be a source of knowledge and a driver of positive change in how healthcare centers serve and support this population group.

Research Questions

The aging population poses both a challenge and an opportunity for healthcare centers. Customized programs for seniors are crucial, yet there's a gap in understanding their intricacies and impact. This study investigates senior citizens' perceptions and barriers to healthcare programs and services, aiming to comprehensively explore their experiences. The central focus is understanding program effectiveness in meeting diverse needs, improving the quality of life, and promoting independence. Specifically, this study is dedicated to exploring the following questions:

1. What are the healthcare programs and services for senior citizens?
2. What challenges do senior citizens encounter in accessing healthcare programs and services?
3. What is senior citizens' perception of the healthcare programs and services on their overall wellbeing?
4. What enhancement programs can be proposed to remove the barriers in healthcare programs and services for senior citizens?

METHODOLOGY

Employing a descriptive study approach, the researchers aimed to explore the experiences and perspectives of participants, particularly focusing on viewpoints and barriers related to health programs and services for seniors aged 60 years and above. The study targeted a sample size of 10 participants, comprising five (5) males and five (5) females, all aged 60 years and above, with access to the healthcare center in Barangay Payatas B, Quezon City, Philippines.

Purposive sampling was utilized, and semi-structured, open-ended interviews were the primary data collection instruments. Participants were engaged during the monthly senior citizens' day organized by the healthcare center and through home visits, ensuring a comprehensive understanding from both attendees of organized events and those who might not attend. Guided questionnaires for the semi-structured interviews were designed to be flexible in wording and question order, facilitating shared control over the interview process. These questionnaires were translated into both English and Filipino to ensure accurate understanding.

Formal consent was obtained from Barangay Payatas B officials and the Payatas B Health Center, and signed consent forms were secured from participants before conducting interviews, ensuring ethical compliance and participant willingness. This

methodology aimed to provide a thorough understanding of the perceptions and barriers faced by senior citizens in accessing healthcare programs and services in Barangay Payatas B, Quezon City, Philippines.

RESULTS

The study involved ten senior citizens aged 60 and above from Payatas B, Quezon City. The demographic profile included age, gender, religion, and current work or hobbies, while participants' names were excluded. Interviews were conducted in Filipino, as all participants are fluent in Filipino or Tagalog. The collected data were coded, categorized, and organized into themes addressing the research questions.

Healthcare Programs and Services for Senior Citizens

Table 1 presents the programs and services available to senior citizens. These are healthcare services for existing health conditions, particularly chronic diseases such as hypertension and diabetes. Healthcare services include free medications, laboratory, and consultations. Another is health promotion and wellness. Such programs are focused on physical activities and health education. While there is a high appreciation for existing programs and services, there is also a demand for more responsive services, such as home visits, for more access and responsive supplies of commodities to prevent stockouts.

Table 1. Healthcare Programs and Services

Themes	Sub-themes
Healthcare services for existing health conditions	Free consultations and medications
	Registration of senior citizens for sustainable care and treatment
Health promotion and wellness programs	Physical activities for wellness
	Health education for increased compliance with care
Demand for responsive services	Demand for more home visits and community extension services
	Demand for responsive medicine supplies

Healthcare services for existing health conditions. The senior citizens in Payatas B, Quezon City, are aware of and engage with healthcare services like free medications, health check-ups, and dental care, though accessibility and efficiency vary. Most participants use free services from the barangay health center, though awareness of the available services varies. The center offers extensive services, including check-ups, vaccinations, lab tests, health education, TB treatment, and free wheelchairs and dentures. However, not all seniors utilize or are aware of all services. One participant described the services for the senior citizen population: *"As far as I know, the services*

available at the center include free medication, free vaccines, anti-flu shots, and laboratory services." Another participant shared, *"I receive my free medication for high blood pressure… Losartan. And they also check my blood sugar."*

Most participants also underscored the presence of treatment services aimed at addressing the healthcare needs of senior citizens within the community, especially those with maintenance medications. These services include medicine consultation, regular health screenings, preventive care initiatives, and free common medicines for elderly patients, such as losartan, metformin, and amlodipine. One of the participants highlighted the issue of insufficient services, stating, *"when they don't have the medicine I need, like certain antibiotics, they give me a prescription, and then I buy it outside."*

All participants shared mechanisms to ensure that the service providers properly monitor all senior citizens' health needs. This is done through an established system of recording and registering senior citizens in the barangay health center registry. One participant elaborated on collecting their personal data, stating, *"…we have to show an index card when going to the health center, where my vaccine schedule and record are placed."* Furthermore, they explained the necessity of the index card for scheduling appointments, mentioning, *"…when scheduling an appointment at the center, the index card is needed to register."*

Health promotion and wellness programs. Participants highlighted various health programs and services in Payatas that comprehensively address the community's healthcare needs, particularly for senior citizens. These services include health promotion, screening, and treatment initiatives. Initially, participants emphasized programs that inform and educate seniors, promoting active participation in wellness activities like Zumba classes and health education sessions. These initiatives were praised for empowering seniors to take charge of their health and fostering community engagement. The participants emphasized the importance of health education and activities. *"…we also have Zumba in the barangay every Saturday, but I don't often go,"* shared by one participant. Additionally, they highlighted the value of teaching about health when receiving medication. One participant shared, *"When they give me medicine, they tell me what it's for and what I should avoid."* During visits to the health center, participants routinely received health education alongside their medical care. In addition to prescribing medication, doctors also provide patients with guidance on managing their condition and following their treatment plan. The participants highlighted the valuable health education provided by healthcare professionals, stating, *"…when the physician at the facility prescribes medication, they provide instructions on when to take it, its purpose, and advise on dietary restrictions due to my diabetes and hypertension."*

Health promotion efforts enable the participants to increase their health-seeking behavior. Most participants emphasized the importance of health screening services, which are vital for the early identification and prevention of diseases. These services include X-rays, medical check-ups, and laboratory tests, each serving a distinct role in promoting overall health and well-being. The participants demonstrated awareness of the available services

offered by the health center. One participant said, “I know they also have X-ray and laboratory services, but I haven’t tried them *yet.”*

Each participant underscored the importance of adhering to a monthly schedule, which allows them to receive free medication and medical check-ups at the health center. The participants provided insights into the process of claiming needed medications, stating, *“The schedule at the center is monthly, usually at the beginning of the month, to get more medicine.”* Additionally, they mentioned the quantity of medication provided, sharing, *“The medicine they gave me is 30 pieces, just enough for one month.”*

Demand for responsive services. Challenges include physical distance from facilities, service consistency, and long waiting times, which can deter usage. Personalized care for immobile seniors is lacking. Suggestions for improvement include comprehensive screenings, better medication management, and expanded outreach to remote or homebound individuals. While healthcare programs are in place, continuous evaluation and adaptation are needed to meet seniors' needs.

Many participants advocate for expanding healthcare initiatives specifically targeted toward this demographic. They propose that health centers organize medical missions or implement additional programs tailored to senior citizens' unique healthcare needs. Moreover, participants emphasize the importance of ensuring an adequate supply of medication for senior citizens. They also suggest conducting medical missions for individuals residing in remote areas who may face challenges in accessing healthcare facilities. The participants suggested advocating more for reaching out to those who live far away and ensuring medication availability. One participant emphasized, *“I know someone who lives far from the health center and has difficulty walking, so they can’t go there. They should do house-to-house visits instead in such cases.”* Another participant expressed, *“I hope they always have a complete stock of medicines and vitamins and that… they never run out because that’s important.”*

Challenges Encounter in Accessing Healthcare Programs and Services

Table 2 shows the challenges experienced by senior citizens in health programs and service delivery. Two themes emerged from the findings. First are the identified barriers to quality healthcare, which were focused on lacking human resources, long waiting times in queues, no services available while scheduled, and access issues related to the distance of residences to the facility. The second concerns their choices as influenced by existing sociocultural practices in their families and the community. These influences include switching preferences or opting for a combination of medical and traditional.

Table 2. Challenges Encountered

Themes	Sub-themes
Identified barriers to quality healthcare	Lacks health human resource
	Long waits in queue
	No services are provided while it is scheduled

	Distance of household to the health center
Choices influenced by socio-cultural practices	Switching to traditional practices for perceived better outcomes
	Opting for mixed of medical and traditional treatments

Identified barriers to quality healthcare. Based on the participants' feedback, it is evident that their experiences varied significantly. While some participants reported events going smoothly without encountering any issues, others recounted facing challenges due to a lack of assistance from the staff. Participants who reported smooth participation most likely received adequate assistance and guidance, allowing them to navigate the event easily. However, most participants shared that staff availability, particularly healthcare providers, is one of the reasons why they have to wait longer in the queue to get their needed service. Health stations are often manned by community health workers and a lean staff of licensed healthcare providers such as doctors and nurses. While community health workers can provide health education and assist the nurses and doctors, doctors and nurses are limited in number due to staffing concerns. Likewise, they rotate in the schedule on different facilities in the area. The participants can see community health workers with very limited capacity to provide care as unresponsive to provide care. One participant shared, *“There’s no other reason. It’s just laziness for some people because I’m here in line by five o’clock, so I get attended to too quickly.”* On the contrary, some participants who frequently visit the health station and understand the situation do not find it an issue. One participant stated, “*I always come here. (You don’t have any problems coming here?) No, not at all.”)*

Another perceived challenge is waiting longer to get the services they came for. Some participants reported difficulties due to a lack of prompt assistance from staff, highlighting shortcomings in the event's support. These participants have encountered difficulties due to a lack of timely assistance and may have felt frustrated and disadvantaged, affecting their overall experience and satisfaction. One participant expressed their struggles in using the services of the healthcare center, *"It's been a while; I've been here since earlier (morning), and I'm still here."* Most participants encountered the challenge of waiting in long, disorganized lines until midday despite the heat. This problem is caused by ineffective queue management strategies or logistical flaws, resulting in frustration and discomfort among most participants. Prolonged exposure to adverse weather conditions also causes feelings of discomfort and impatience, affecting the overall participant experience. Some participants shared their opinions on the system of the healthcare center, *"The line at the center is always long,"* said one participant, and *"Senior citizens keep coming back to the health center,”* said another. At the same time, they wait for their turn in the queue.

On the other hand, some participants shared their dismay at visiting the health center for a scheduled health service just to be informed to come again another day. *"At times, the staff forget the schedule. People come, only to be told to return another time,”* shared one participant.

This difference in experiences emphasizes the subjective nature of individual encounters and the importance of providing adequate support to all participants, implying variations in the quality and availability of assistance provided by event personnel. It also emphasizes considering diverse needs and capabilities when organizing similar activities to ensure inclusivity and accessibility for everyone involved.

Equally important to note are the experiences of those who reside far from health centers. Most participants noted that senior citizens face accessibility issues, prompting some nurses or healthcare workers to make house-to-house visits. However, some participants were skeptical about the quality of care received at home compared to the health center. Along with the common challenge regarding the location of the health center, one participant shared, *"Yes. There are many of us (seniors) here. Mostly elderly people. That's why the nurses here do house-to-house. If I can, I can still walk. I prefer to visit the health center for a better-quality service."*

Choices influenced by socio-cultural practices. The majority of the participants engage in cultural practices such as *"hilot"* (traditional massage) and *"tawas"* (ritualistic cleansing with alum), demonstrating the community's reliance on traditional beliefs. Some participants do not adhere to these cultural traditions and prefer alternative approaches. While some people may prioritize traditional healing methods first, others may choose to go straight to the doctor or rely on conventional medicine. Some participants said that they go for traditional means when they perceive that treatment they get from the health center is not helping, *"Sometimes, when you don't immediately get better at the center, it helps alleviate the condition,''* shared one participant. On the contrary, one participant highlights the importance of medical consultations rather than traditional treatment: *"I don't really have any beliefs because I go straight here [to the Health Center], just like my grandchild. When they have a cough, they get checked by a doctor. It's available, and it's fine."* Some participants identified a cultural mindset to treat and cure infirmity as common among those raised in the provinces. One participant insisted that they only seek medical care because they weren't raised in the province, *"I rely on doctors only. I wasn't raised in the province."* In addition, a subset of people believe that exercise is effective as a treatment for certain ailments, demonstrating the diversity of perspectives within cultural health practices. The participant emphasizes that exercise is one of the keys to a healthy body. *"Just exercise. Just by my own effort."*

Senior Citizens' Perception of the Healthcare Programs and Services

Table 3. Perception on the Healthcare Programs

Themes	Sub-themes
Satisfaction with free services	
Dissatisfaction with facility and services	Discomfort due to the physical setup
	Displeasure of a long waiting time
	Disapproval of unpleasant staff
	Dissatisfaction with stockouts of commodities

Expressed understanding of government-provided services	

Table 3 presents the perception of senior citizens regarding access to health programs and services in Payatas, Quezon City. Three major themes emerged from the findings – satisfaction with free services, dissatisfaction with facility and services, and expressed understanding of government-provided services. Along with dissatisfaction with facility and services, four sub-themes generally describe their experiences. These are discomfort due to the physical setup, displeasure of a long waiting time, disapproval of unpleasant staff, and dissatisfaction with stockouts of commodities like medications.

Satisfaction with free services. Most participants expressed satisfaction with the health programs and services they receive in Payatas, Quezon City, primarily because they are free. Free services include consultations, laboratory examinations, and commodities such as vitamins, vaccines, and medications. The participants likewise enjoy opportunities for health education and participation in medical missions organized for them. One participant described their experience as they were provided with medications after the consultations. While another described it as efficient, describing the effectiveness of the programs as very good due to the availability of medications and the smooth flow of services, *"…they do provide free medicines outright after the consultations."*

While most participants are dissatisfied due to the long waiting time, they appreciate the small group learning sessions conducted by community health workers. The participants also highlighted the importance of health education, noting, *"Like with health… they explain what the medicine is for because I also like to ask questions,"* said one participant. Additionally, they appreciate being informed about dietary restrictions when taking medication, stating, *"They inform you about what foods to avoid when taking the medicine."*

Dissatisfaction with facility and services. Based on the ratings provided by most of the senior citizens on a scale of 1 to 5, the effectiveness of the healthcare center's programs and services varies significantly. One senior citizen rated the services as a 1, expressing dissatisfaction with long wait times, staff approachability, medication availability, and discomfort in the waiting area. The participant expressed dissatisfaction: *"The service is not good; it's very hot, and the line is long",* shared one participant, *"…sometimes the staff are so rude…*" another participant added.

The raised concern on the discomfort due to the physical aspects of the health center becomes more problematic during summer when the temperature rises very high. The health center has no air-conditioning, and despite it being well-ventilated, the cramped long lines exacerbate the condition.

The senior citizens' day is scheduled for the month's first day. Given the situation wherein all elderly constituency needing medical attention would crowd the health center in one single day every month. While the first day of the month is intended for senior citizens, the health center remains open to the public with other health concerns, which leads to

cramping up and longer queues, hence, longer waiting times for almost all. In most cases, despite the large number of patients waiting, only one physician is available. One participant shared, *"…it takes so long because there is only one doctor. Why don't they add more?"* While some participants have a clear understanding of the health center's situation as a public facility. One participant shared that they often reassure each other and tell them to be patient while waiting in the queue*, "Just be patient because we are dealing with the government, and besides, patience leads to rewards."* Lastly, there are instances when prescribed medications are unavailable in the health centers. In situations like this, senior citizen patients are advised to purchase it from commercial pharmacies. Free medications remain available until the supply lasts.

Expressed understanding of government-provided services. Most of the opinions senior citizens express are rooted in their firsthand experiences at the healthcare center. Some seniors mentioned the need for patience, acknowledging that the services are government-funded and provided free of charge. Public health centers cater to the needs of all, especially the marginalized and the poor. Hence, it is often the best option for most people, not only senior citizens – which often leads to overcrowding of patients, stockouts of supplies, and too few personnel to attend to all.

Proposed Measures for Enhancement of Healthcare Program by Senior Citizens

The findings present two overarching themes as proposed measures by the participants. First is improving access through outreach activities and second is making the facility and services responsive, therefore, senior citizens-friendly.

Improve access through outreach activities. Senior citizens have identified some measures to improve their access to healthcare programs and services in Patayas, Quezon City. A multifaceted approach is proposed to address these challenges. First is improving the physical accessibility of healthcare facilities. Many seniors in remote areas advocate for facilities closer to them, reducing the travel time to access medications. One specific recommendation was having a regular outreach wherein services are brought to their areas. Outreach programs and medical missions are also recommended to ensure inclusivity in healthcare programs, expanding access for many seniors who may otherwise struggle to reach health centers. One participant shared, *"Yes, it is far because the travel will need to use a tricycle, there should be an outreach…"* Transportation costs are an additional financial burden for senior citizens. Those who chose not to commute complained about the perceived risks of strenuous walking, especially those with contraindicated health conditions. Another participant shared about always worrying about their hypertension when walking back and forth to the health center from their residence, "…just like that, I am anxious because I get too tired, *so my BP is high".*

Make the facility and services senior citizens-friendly. Suggestions include adding more chairs to ensure that senior citizens with Musculoskeletal concerns and other health problems can be properly rested and accommodated before their consultations. Other suggestions include implementing programs such as milk and food feeding programs for seniors. In addition, some seniors have expressed concerns about encountering rude and

unapproachable staff. Hence, they also proposed to train the staff to be more sensitive and responsive to their overall clientele. One shared about the unapproachable staff, noting, *"...overall the staff is friendly, but sometimes we encounter rude staff."* Another participant added, *"There are times that the staff are unapproachable."*

In addition, while some seniors report no specific barriers to accessing healthcare, others mention challenges such as long waiting times and difficulty scheduling appointments. These are attributed to the absence of medical professionals when needed, which can lead to untreated conditions, exacerbation of chronic diseases, and a sense of neglect among the senior population. The participants also highlighted logistical challenges, expressing, *"The scheduling process takes a long time, and the queue is long."* Additionally, they expressed concerns about the availability of medical professionals, stating, *"Sometimes there is no doctor if needed".* Hence, improving staffing is also being proposed to ensure responsive services.

DISCUSSION

This qualitative study investigates the perceptions and barriers to healthcare services among ten senior citizens (5), five males and (5), five females aged 60 and above in Barangay Payatas, Quezon City. The study highlights the awareness among senior citizens regarding available healthcare services, including free medications, health check-ups, and dental care. However, challenges such as physical distance from health facilities, inconsistent service availability, and long waiting times can hinder the full utilization of these services. There's a notable need for personalized care, especially for immobile seniors, suggesting improvements like comprehensive health screenings and expanded outreach programs. Local healthcare facilities, particularly barangay health centers, are crucial in meeting community healthcare needs, offering a range of free services. Mechanisms such as index cards are in place to monitor seniors' health needs. In this study, existing guidelines were referenced, and multiple agencies were involved in providing services for senior citizens. However, only 25% of the 16 health centers conducted comprehensive geriatric assessment (CGA) without an existing health information system (HIS) specifically for senior citizens (González-López et al., 2022).

Participants appreciate the various health programs available, emphasizing a comprehensive approach to healthcare delivery. Recommendations for improvement include expanding outreach programs and ensuring an adequate medication supply. While UHC represents a significant step in improving healthcare access in the Philippines, challenges such as fragmented health information systems and resource shortages persist. The proposed pilot program offers a promising solution by leveraging partnerships and innovative financing models to expand access to UHC and enhance healthcare delivery for underserved populations. Overall, the study provides valuable insights for enhancing healthcare provisions and promoting senior citizens' well-being in the community. (Philanthropy Asia Alliance, 2023)

The experiences of senior citizen individuals varied significantly, with some encountering smooth participation in events due to helpful staff assistance, while others faced challenges and frustrations due to inadequate support. Long, disorganized queues and waiting times, especially in adverse weather conditions, emerged as a significant issue for most participants, likely stemming from ineffective queue management or logistical issues. Moreover, there was a disparity in perceptions regarding the extent and nature of senior citizens' challenges, highlighting the need for further research to effectively understand and address their diverse needs. Furthermore, participants' engagement in cultural practices like traditional massage and ritualistic cleansing showcased the community's reliance on traditional beliefs. However, preferences varied among individuals, with some favoring alternative approaches or conventional medicine over traditional healing methods.

To enhance satisfaction, the healthcare center should prioritize areas for improvement identified by seniors, including wait times, staff approachability, medication availability, and transportation support. Addressing these issues can improve the overall quality of care and ensure that cultural beliefs and preferences are respected and integrated into healthcare interventions.

The inclination towards traditional healing practices such as *"hilot"* (massage) and *"tawas"* (divination ritual) is evident among seniors, with some utilizing these methods before formal medical treatment. Mental health concerns, including stigma and cognitive impairment, are briefly acknowledged, hinting at the potential need for further examination and educational initiatives in this area.

Senior citizens have identified various barriers within healthcare programs and services, proposing measures to address them. A primary concern is the physical accessibility of healthcare facilities, particularly for those residing in remote areas. Suggestions include establishing facilities closer to these communities to reduce travel time and ensure inclusivity through outreach programs and medical missions. Concerns have also been raised regarding encounters with staff perceived as rude or unapproachable, highlighting the significant impact of staff demeanor on the overall healthcare experience for seniors. Suggestions for improvement include increasing seating capacity, implementing feeding programs, and establishing additional centers to cater to those living far from existing facilities.

Despite these challenges, seniors' satisfaction with healthcare programs varies. While many commend the kindness and quality of care healthcare professionals provide, concerns persist regarding service efficiency and responsiveness, highlighting areas needing enhancement.

This section proposes measures to address the challenges faced by seniors and improve healthcare services. First, this section recommends expanding healthcare centers or establishing additional facilities to accommodate more seniors, directly addressing issues such as long waiting times and inconsistent availability. The National Economic and Development Authority (2021) emphasizes expanding healthcare infrastructure and implementing digital health solutions to enhance service delivery.

Outreach programs and medical missions are also suggested to bring healthcare services closer to remote areas, ensuring inclusivity and accessibility for all seniors. Mohd Rosnu, Singh, Ludin, Ishak, Rahman, and Shahar (2022) highlight the importance of removing geographical barriers and enhancing healthcare access for seniors. Ensuring a consistent and adequate supply of medications and vitamins can prevent shortages and promote seniors' health, directly addressing the challenges identified in the study.

Additionally, this section highlights the need to improve staff attitudes and increase sensitivity to seniors' needs, enhancing the overall quality of care. This involves providing training initiatives and resources to cultivate a constructive and positive environment. Lastly, providing educational sessions for seniors can empower them to take charge of their health, understand their treatment plans, and make informed decisions, including guidance on medication usage, dietary restrictions, and lifestyle modifications.

Conclusions

The study provides context on how senior citizens perceive healthcare programs and services in Barangay Payatas B, Quezon City. While most participants are aware of and participate in programs like free medications and health screenings, they face challenges such as long wait times, medication shortages, and limited doctor availability.

To improve, health centers need to offer personalized care, better access to services, and expand outreach to remote areas. Clearer health education and respecting traditional beliefs are also essential. Addressing these aspects will enhance healthcare experiences and outcomes for seniors, create a supportive environment, and establish a foundation for a healthier, more resilient community, benefiting future generations and ensuring long-term stability in Barangay Payatas B.

Additionally, the study underscores the importance of regular monitoring and evaluation of healthcare programs to ensure they meet the evolving needs of senior citizens. By implementing feedback mechanisms and involving senior citizens in the planning and decision-making processes, healthcare providers can create more responsive and effective services. Collaborations with non-governmental organizations and community groups can further enhance resource allocation and service delivery. Overall, a comprehensive and inclusive approach is crucial for improving the quality of life for senior citizens in Barangay Payatas B.

Recommendations

Leveraging this study's findings can provide a comprehensive understanding of the challenges, perceptions, and needs of senior citizens within the healthcare system. Utilizing this study as a foundation can significantly save valuable time on data-gathering efforts, allowing researchers to focus more on analyzing and building upon the insights already obtained. Additionally, the following critical information encompasses recommendations for selecting study participants and suggestions for future research.

A. Age Selection of Study Participants:

The study concentrated on senior citizens, with a total of ten (10) participants chosen, comprising five (5) males and five (5) females, all aged 60 years old and above. This deliberate age selection aimed to ensure representation of the target demographic and capture diverse perspectives. As recommended, particular attention was given to including individuals who had recently turned 60 and may not yet be aware of the availability of healthcare programs and services. However, during the recruitment process, it was encountered that some participants who had recently turned 60 were unaware of the services and programs offered at the healthcare center. Consequently, interviews with these individuals could not be conducted, highlighting a potential area for further exploration and targeted outreach efforts in future research endeavors.

B. Locale:

The study primarily targets senior citizens residing in Barangay Payatas B, Quezon City. Notably, the Payatas area comprises three barangays under the local government jurisdiction, namely Payatas A, B, and C. Future researcher endeavors are recommended to explore diverse barangays within the Payatas area to enhance the breadth of geographical representation. This expansion would offer a broader scope of location, allowing for a more comprehensive understanding of senior citizens' healthcare needs and experience different community settings.

C. Existing Literature

The studies reviewed in the existing literature provide valuable insights into diverse aspects of senior healthcare, encompassing national-level initiatives, regional disparities, and access challenges specific to the Filipino context. While each study enhances understanding of seniors' well-being, they are constrained by factors such as narrow focus, limited sample sizes, and reliance on qualitative methods, potentially limiting their broader applicability. Recommendations include integrating quantitative methodologies, broadening sample sizes and geographic scopes, and incorporating varied stakeholder perspectives to enrich the depth and relevance of findings. Addressing these limitations can facilitate a more comprehensive understanding of senior healthcare needs and guide targeted interventions to enhance access and outcomes for older adults.

Compliance with Ethical Standards

Several ethical considerations were prioritized before conducting the research to protect the rights and well-being of senior citizens participating in the study. Firstly, the research team consulted with the Local Government Unit (LGU) of Barangay Payatas B to ensure compliance and obtain the necessary formal documents. This was done in collaboration with the local health center, allowing the research team to proceed with the study. This collaborative effort ensured that the study design aligned with ethical standards, providing clarity, understanding, and respect for the perspectives and cultural diversity of the participants.

The study emphasizes that participants in Barangay Payatas B will be informed about the study's purpose, benefits, risks, and methodology in both English and Filipino to ensure clarity and understanding. They will also be made aware of their right to withdraw at any time without consequences, guaranteeing that their participation is voluntary and their autonomy is respected.

In data collection, interviews were the primary instrument used in the study. Informed consent was obtained before continuing with the interviews to uphold privacy and confidentiality empathetically and sensitively, avoiding causing distress and ensuring that participants felt comfortable and respected. The researchers carefully designed and validated the questions to address sensitive issues while maintaining a supportive atmosphere.

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BEYOND THE BADGE: A CRITICAL ANALYSIS OF ONLINE EDUCATION'S IMPACT ON CRIMINOLOGY STUDENTS' LEARNING AND PROFESSIONAL DEVELOPMENT

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ABSTRACT

The COVID-19 pandemic forced a rapid shift to online education across academic disciplines, including criminology. While online learning offers potential benefits for flexibility and access, concerns remain regarding its effectiveness and student experience. This study investigates the experiences of criminology students transitioning to online education during this unprecedented time. This study employed a descriptive-correlational approach to explore the experiences of criminology students transitioning to online education during the COVID-19 pandemic. Descriptive analysis characterized student demographics (age, sex, year level, income, device access) and attitudes towards online learning. Correlation analysis examined relationships between these student characteristics, challenges faced in the online environment, and the overall impact of the transition. The findings revealed a significant positive correlation between student-reported challenges and the perceived impact of the transition. This suggests that students experiencing greater difficulty with online learning also felt a more significant negative impact on their education. In response, the study emphasizes the need for targeted interventions to address these challenges. The authors propose online seminars/training programs for both students and instructors to enhance online learning skills and maximize the potential benefits of e-learning platforms in criminology education.

Keywords: *Online learning, Criminology education, COVID-19 pandemic, Challenges in online learning, Impact of online learning, Online training programs*

INTRODUCTION

The occurrence of coronavirus disease 2019 or COVID-19 created a worldwide health predicament that has a big effect in the daily living. According to World Health Organization (2020), the covid-19 pandemic is accelerating, thus, virus is still spreading fast and most people are still susceptible. It reached more than one hundred countries with over 100,000 cases during the first week of March (Bhagavathula et al., 2020).

The widespread of Covid-19 severely obstructed all aspects of life including economic, social and cultural (UNESCO, 2020). Thus, in an effort to lessen the outbreak of COVID-19, many countries have imposed lockdown, movement control or shelter in place orders on their residents (Azlan et al., 2020).

Moreover, with the outburst of Covid-19 disease globally, the Philippines started the longest community quarantine in the world in March 15 which is an effort to contain a Covid-19 outbreak (De Guzman & Guido, 2020). Hence, WHO in the Philippines activated the highest level of alert by declaring COVID-19 as a public health emergency of international concern (WHO, 2020).

Also, the government implemented numerous actions including community quarantine; expanded its testing capacity from one national reference laboratory with the Research Institute of Tropical Medicine (RITM) to 23 licensed testing labs; and addressed the social and economic impact to the community of the occurring pandemic by providing social amelioration to low-income families (WHO, 2020).

Therefore, the spread of COVID-19 pandemic changes the way human live. Since there is no cure or vaccine available for Covid-19 disease, everyone is expected to accept setting into life under “new normal” (Asonye, 2020). It requires people to cope and adjust in order to fit with the present environment.

The COVID-19 pandemic has also changed education nowadays. The whole educational system from elementary to tertiary level has been collapsed due to novel coronavirus disease 2019 (Mishra, et al., 2020). Schools shut across the world wherein millions of children have had to adapt to new types of learning (Li & Lalani, 2020).

According to Khalil et al. (2020), the closure of educational activities due to the ongoing COVID-19 pandemic resulted in an unplanned shift from traditional learning to a setup that exclusively involves online or digital teaching and learning. E-learning or online learning has become the mandatory component of all educational institutions like schools, colleges, and universities in and around the world due to the pandemic crisis of COVID-19 (Radha et al., 2020).

With that, this type of approach is likely to be challenging in terms of mental, emotional and academic (Burke, 2020). As emphasized by Garcia & Weiss (2020), education system was not built, nor prepared, to cope with a situation like this. Thus, learners’ academic performance is deteriorating during the pandemic, along with their

progress on other developmental skills.

Online learning can be an effective, rich and fulfilling experience but it requires everyone to pay careful attention to student experiences since some students are struggling in transitioning to online learning; having no easy access to WiFi or computers (Houlden & Veletsianos, 2020). Some students without reliable internet access and/or technology struggle to participate in digital learning which is seen across countries and between income brackets within countries (Li & Lalani, 2020).

Furthermore, the forced migration from in-person to online learning has also deepened the digital divide. It describes the gap between those who have access to the internet and technology at home, and those who do not (Dennon, 2020).

Thus, with all these data presented, the researcher was encouraged to conduct the study. This study was conducted to know the impact of transition to online education among the criminology students during the occurrence of Covid-19 pandemic. This study was conducted as it concerns the welfare of every student in facing the new normal education.

Research Questions

This study aimed to know the impact of transition to online education among criminology students of Samar College on the occurrence of Covid-19 pandemic. Specifically, it sought to answer the following questions:

1. What is the profile of the criminology student-respondents in terms of the following personal variates:
   - 1.1 age and sex;
   - 1.2 year level;
   - 1.3 gross monthly family income;
   - 1.4 device ownership;
   - 1.5 internet access; and
   - 1.6 attitude toward online learning?
2. What are the challenges encountered by the criminology student-respondents with the shift from traditional to online mode of learning?
3. Is there a significant relationship between the challenges encountered by the criminology student-respondents with the shift to online education and their profile variates?
4. What is the impact of the transition to online education during Covid-19 pandemic?
5. Is there a significant relationship between the impact of the transition to online education during Covid-19 pandemic and the following factors:
   - 5.1 student-related variates
   - 5.2 challenges encountered with the shift from traditional to online mode of learning?
6. What implications maybe derived based on the findings of this study?

METHODOLOGY

In this descriptive-correlation study, the researcher employed a stratified random sampling technique to gather data from 312 Criminology students at Samar College. To ensure data quality, a survey questionnaire was subjected to a two-step validation process. First, experts reviewed the content for clarity and relevance, offering suggestions for improvement. Then, the test-retest method was applied, administering the questionnaire to a small group twice with a one-week interval. A correlation coefficient (0.98) indicated excellent internal consistency and reliability of the instrument. The data collection process involved obtaining approval from the Dean and securing informed consent from the participants. Each student received the questionnaire and ample time to complete it with the assurance of confidentiality. This comprehensive approach aimed to describe the student profiles in terms of demographics and online learning attitudes. Furthermore, the study sought to identify potential relationships between these factors and the challenges and impacts experienced by students during the transition to online education amidst the COVID-19 pandemic.

RESULTS AND DISCUSSION

The following were the salient findings of the study:

1. The majority of the respondents were male, with a total of 195 student respondents. Additionally, the age bracket ranging from 18 to 22 shows the highest number of student respondents, both male and female.

2. There are an equal number of student respondents for each grade level, with 78 respondents per grade level and a total of 312 student respondents.

3. The majority of the student respondents were earning a family monthly income of PHP 4,000 to PHP 5,999.

4. The majority of the student respondents owned a mobile phone or smartphone, for a total of 267 student respondents.

5. The majority of the student respondents access the internet through prepaid mobile data, for a total of 269 student respondents.

6. The majority of the student respondents were “undecided” or uncertain about their attitude toward online learning or e-learning. This finding highlights a lack of clear opinions on this educational method. This indecisiveness could stem from several factors. Perhaps the students are relatively new to online learning due to the pandemic and haven't had enough time to form a strong positive or negative view. Alternatively, their online learning experiences might have been inconsistent, offering both positive aspects (like flexibility) and negative ones (like technical issues). This mixed bag could make it difficult to have a definitive opinion on online learning's overall effectiveness. Additionally, students might

not be fully aware of the potential benefits and drawbacks of online learning, such as increased accessibility versus reduced social interaction. Without a clear understanding of these factors, it's difficult to form a strong opinion. Further investigation into the reasons behind this indecisiveness could be valuable.

7. The majority of the student respondents indicated “highly challenging” toward their perceived challenges encountered with the shift from traditional to online modes of learning.

8. The majority of the student respondents indicated “highly impactful” toward their perceived impact of the transition to online education during the COVID-19 pandemic.

9. The null hypothesis states there is no significant relationship between the challenges encountered by the Criminology student-respondents with the shift to online education and their profile variables, especially age, sex, family monthly income, device ownership, and internet access, which were "accepted.”.

10. On the other hand, the profile variate pertaining to the year level of the student respondents was rejected.

11. The null hypothesis states there is no significant relationship between the impact of the transition to online education during the COVID-19 pandemic and the student-profile variables, especially sex, year level, family monthly income, device ownership, and internet access, which were "accepted.”.

12. On the other hand, the profile variable pertaining to the age of the student respondents was "rejected.”.

13. The null hypothesis stating there is no significant relationship between the impact of the transition to online education during the COVID-19 pandemic and the challenges encountered with the shift to online education was "rejected.”.

Attitude Toward online learning or e-learning

This data paints a complex picture of student views on online learning. While most students agreed they were interested in the concept (liking statements about finding it interesting and improving study skills), they were unsure about its effectiveness during the pandemic. This is further shown by their disagreement with statements suggesting online learning is better than traditional methods or that they felt fully prepared for online classes. Overall, the results suggest students are undecided about online learning.

Table 1
Attitude Toward Online Learning or e-Learning

Attitude Toward Online Learning or e-Learning	Weighted Means	Interpretation
1) I am interested in e-learning or online learning.	4.48	Agree
2) E-learning improves my study skill.	3.95	Agree
3) E-learning makes my quarantine time a useful one.	3.63	Agree
4) Improving knowledge through e-learning is better than traditional learning.	2.39	Disagree
5) I am satisfied with the use of online learning approach during Covid-19 pandemic.	2.55	Undecided
6) I am physically and mentally capable of studying all remaining subjects for the semester online.	1.64	Disagree
7) I have enough time and resources to prepare myself for online learning.	1.84	Disagree
8) I have enough time and resources to prepare myself for online learning.	1.61	Disagree
Grand Weighted Mean	**2.76**	**Undecided**

Legend: 4.51-5.00 –Strongly Agree (SA)
3.51-4.50 – Agree (A)
2.51-3.50 – Undecided (U)
1.51-2.50 – Disagree (D)
1.00–1.50 – Strongly Disagree (SD)

This has some key implications. First, students seem interested in the potential of online learning but might need more support. Institutions could offer improved online learning orientation programs to address concerns about resources, time management, and how effective online learning is compared to traditional methods. Additionally, the data highlights the need to identify and address student challenges, such as limited access to technology or feeling overwhelmed with online coursework. Finally, the uncertainty suggests some students might benefit from a more personalized online learning experience. This could involve offering hybrid models or catering to individual learning styles within online environments. By understanding these complexities in

student attitudes, educators can work towards creating a more effective and supportive online learning experience.

Challenges Encountered by the Student-Respondents with the Shift from Traditional to Online Mode of Learning

Students faced a significant number of challenges during the shift to online learning, according to this data. Most respondents found aspects like adapting to new learning styles, managing home responsibilities alongside studies, and limited communication with teachers to be highly challenging. The data also suggests that unreliable internet access, a lack of dedicated study space, mental health difficulties, and limited access to technology were major hurdles. Overall, the transition to online learning was perceived as highly challenging by the majority of students.

Table 2

Challenges Encountered with the Shift from Traditional to Online Mode of Learning

Challenges encountered with the shift from traditional to online mode of learning	Weighted Means	Interpretation
1) Difficulty adjusting to new learning styles	3.91	Highly Challenging
2) Need to fulfill responsibilities at home	3.41	Highly Challenging
3) Poor communication with educators	3.46	Highly Challenging
4) Limited space conducive for studying	3.81	Highly Challenging
5) Unreliable or no internet access	3.88	Highly Challenging
6) Mental health difficulties	3.77	Highly Challenging
7) Lack of technical skills	3.33	Highly Challenging
8) Need to work for extra income	2.69	Moderately Challenging
9) No device or limited access	3.54	Highly Challenging
10)Lack of basic needs	2.52	Moderately Challenging
Grand Weighted Mean	**3.43**	**Highly Challenging**

Legend: 3.26-4.00 –Highly Challenging (HC)
2.51-3.25 – Moderately Challenging (MC)
1.76-2.50 – Slightly Challenging (SC)
1.00-1.75 – Not Challenging (NC)

These findings hold important implications. There's a need for a more well-rounded approach to online learning that considers students' personal situations, mental well-being, and technical capabilities. Institutions should develop support systems to address communication issues, offer technical training, and provide resources for students struggling with home life or mental health. Additionally, creating flexible learning environments that cater to various learning styles and acknowledge limitations in internet access or study space could be beneficial. Finally, efforts to bridge the digital divide by providing affordable technology and internet access are crucial for ensuring everyone can participate equally in online learning.

Impact of the Transition to Online Education Among Student-Respondents During Covid-19 Pandemic

The impact of online learning during COVID-19 had both positive and negative aspects for students, according to this data. While there were some downsides, the overall impact was considered positive.

On the positive side, students highly valued the access to a variety of learning materials offered online, including presentations, videos, and documents. This caters to different learning styles and preferences. Additionally, students appreciated the flexibility and autonomy online learning provided, allowing them to learn at their own pace and comfort level. They also reported that online courses often had clear instructions and offered a wider range of resources compared to traditional methods.

However, there were also downsides. A significant negative impact was the perception that communication between students and instructors decreased in online environments. This highlights the importance of creating strong communication channels and engagement strategies specifically for online learning. Students also reported feeling somewhat isolated due to online learning, suggesting a need for strategies to promote interaction and a sense of community within online courses. Finally, a small portion of students indicated online learning might lead to decreased motivation and a lower understanding of the material.

Understanding these impacts is crucial. Educators can leverage the strengths of online learning, like material variety and flexibility, while developing strategies to address the challenges. This could involve increasing student-to-instructor and student-to-student interaction through online forums or activities, fostering a sense of community within courses, and providing clear expectations and regular feedback to keep students motivated.

Table 3

Impact of the Transition to Online Education During Covid-19 Pandemic

Impact of the transition to online education during Covid-19 pandemic	Weighted Means	Interpretation
1) E-learning fulfills the needs of today's learners at their own comfort and requirements.	4.29	Highly Impactful
2) Online education accommodates variety of learning styles among students.	4.29	Highly Impactful
3) It provides a wide range of materials for the learners.	4.41	Highly Impactful
4) It can share and offer teaching-learning materials in diverse formats such as slideshows, audios, videos, PDFs, e-mails, word documents and so on	4.73	Extremely Impactful
5) It provides clear, easy, gradual instructions for better understanding of the learners.	4.19	Highly Impactful
6) Online learning platforms can help students become more independent learners.	2.60	Moderately Impactful
7) Online education lack of motivation among students.	2.22	Slightly Impactful
8) It provides less understanding of the lesson or topic discussed.	2.00	Slightly Impactful
9) It decreases communication levels between the students and their instructors	4.01	Highly Impactful
10) Students feeling of isolation.	3.45	Moderately Impactful
Grand Weighted Mean	**3.62**	**Highly Impactful**

Legend: 4.51-5.00 –Extremely Impactful (EI)
3.51-4.50 – Highly Impactful (HI)
2.51-3.50 – Moderately Impactful (MI)
1.51-2.50 – Slightly Impactful (SI)
1.00–1.50 – Not Impactful (NI)

By acknowledging both the positive and negative aspects of online learning, educators can work towards optimizing online learning environments for better student

engagement, learning, and well-being.

Conclusions

This study investigated the online learning experiences of Criminology students during the COVID-19 pandemic. Here are the key findings:

1. The majority of respondents were male, aged 18-22, and came from various year levels. Most students belonged to families with a monthly income of Php 4,000 to 5,999.

2. The majority of students owned mobile phones and accessed the internet primarily through prepaid mobile data.

3. A significant portion of the students were undecided about online learning, suggesting a lack of clear opinions.

4. Students reported encountering significant challenges with the transition to online learning, including adapting to new learning styles, balancing responsibilities, and communication issues.

5. Despite the challenges, students perceived the overall impact of online learning to be positive. They valued the flexibility, diverse learning materials, and clear instructions offered in online environments.

6. There were no significant relationships between most student profile variables (sex, family income, device ownership, internet access) and either the challenges faced or the perceived impact of online learning. However, there was a weak association between year level and challenges faced, and between age and perceived impact. Finally, a significant relationship was found between the challenges encountered and the overall impact of online learning, suggesting that students who faced more challenges also perceived a stronger impact (positive or negative) from online education.

Overall, the study highlights the complex experiences of Criminology students with online learning during the pandemic. While students appreciated the flexibility and resources offered online, they also faced significant challenges.

Future efforts should focus on improving communication, addressing student needs, and creating a more supportive online learning environment.

Recommendations

This study highlights the need for improvements to enhance the online learning experience for Criminology students. Here are some recommendations based on the

findings:

1. Orientation and Support Programs: Develop comprehensive orientation programs to address student concerns about online learning. This could include information on effective online learning strategies, time management skills, and navigating online resources. Additionally, consider offering ongoing support services to assist students with technical difficulties or academic challenges.

2. Improved Communication Strategies: Promote clear and frequent communication between instructors and students. Utilize online forums, discussion boards, or virtual office hours to foster interaction and address student concerns. Encourage active participation through online discussions, collaborative activities, and opportunities for feedback.

3. Addressing Challenges: Identify and address specific challenges faced by students. This could involve providing technical training for those with limited skills, exploring alternative assessment methods to reduce workload, or offering flexible learning options to accommodate students with competing responsibilities.

4. Bridging the Digital Divide: Consider initiatives to bridge the digital divide by providing affordable access to technology and reliable internet connections. This could involve exploring partnerships with internet service providers or offering loaner devices to students in need.

5. Personalized Learning: Explore ways to personalize the online learning experience to cater to different learning styles and preferences. This could involve offering a variety of learning materials in different formats (videos, text, audio), incorporating self-paced learning elements, or allowing for student choice in assignments.

6. Building Community: Implement strategies to foster a sense of community and belonging within online courses. This could involve group projects, online social events, or ice-breaker activities at the beginning of the semester.

7. Further research could explore the specific reasons behind student indecision regarding online learning.

8. Investigating the weak association between year level and challenges, or age and perceived impact, could provide insights into tailoring support based on student demographics.

9. The identified relationship between challenges and perceived impact warrants further exploration. Understanding the nature of this relationship could inform strategies to mitigate challenges and maximize the positive impact of online learning.

   By implementing these recommendations, institutions can create a more effective

and supportive online learning environment that promotes student success and well-being in the digital age.

Compliance with Ethical Standards

This study was conducted with the utmost respect for participants' rights. The researcher obtained the necessary approvals before starting, clearly explained the purpose of the research (in writing and verbally), and emphasized that participation was completely voluntary. Participants were free to withdraw at any time without having to give a reason. The researcher also took steps to ensure all participant information remained confidential.

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BUILDING THE FOUNDATION: HOW LITERACY AND NUMERACY SKILLS IN THIRD GRADE IMPACT OVERALL ACADEMIC ACHIEVEMENT

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ABSTRACT

This study explored the factors influencing academic performance in Grade 3 students within the District of Motiong, Schools Division of Samar (School Year 2023-2024). The research aimed to understand how literacy and numeracy program implementation impacted student achievement. Findings revealed a high level of program integration into curriculum and teaching practices. However, high implementation alone did not guarantee improved performance. Age differences emerged, with older students showing stronger engagement in numeracy but potentially struggling with fluency. Gender did not significantly impact perceived literacy program effectiveness, suggesting equitable instruction. Socioeconomic factors played a role, with students from higher-income families having access to resources that enhanced numeracy engagement. Similarly, access to reading materials at home influenced literacy development. Positive attitudes and parental education were linked to effective program implementation in both literacy and numeracy. Furthermore, the study found strong connections between effective instruction and student academic performance. While the overall system supported learning, a small percentage of students scored below the benchmark, highlighting the need for targeted interventions. The research identified key factors for academic success: differentiated instruction, addressing gender disparities, supporting students from diverse backgrounds, providing resources, fostering positive attitudes, and parental involvement. Recommendations include: implementing differentiated instruction, investigating gender differences, providing interventions for students facing socioeconomic challenges, promoting resource access, fostering positive attitudes, encouraging parental engagement, and implementing evidence-based literacy and numeracy programs with effective teaching strategies. By

creating supportive learning environments, educators can equip all students to reach their full potential.

Keywords: *Grade 3 Students, Academic Performance, Literacy Programs, Numeracy Programs, Program Implementation, Differentiated Instruction, Socioeconomic Status, Parental Involvement, Positive Attitudes, Reading Fluency, Targeted Interventions, Learning Environment, Effective Teaching Strategies, Student Engagement*

INTRODUCTION

The Department of Education has long been concerned with numeracy and literacy, recognizing their importance as fundamental skills. Efforts and mechanisms have consistently been prioritized and implemented by the department to bridge gaps in numeracy and literacy education. This commitment reflects the department's dedication to delivering quality and relevant education to learners, acknowledging that numeracy and literacy form the foundation for academic success and lifelong learning. Proficiency in numeracy equips students with essential mathematical abilities, enabling them to solve problems, make informed decisions, and navigate the complexities of daily life. Similarly, literacy skills empower students to comprehend, communicate, and critically analyze information across various disciplines.

Academic performance encompasses a student's achievements, progress, and competence in various educational domains. It serves as a crucial indicator of a student's learning outcomes, educational attainment, and overall success in formal education. It is influenced by multiple factors, including student motivation, engagement, study habits, instructional quality, school environment, and support systems (Caprara, et al., 2000). Monitoring and fostering positive academic performance are essential for educators, institutions, and policymakers, as it not only reflects the effectiveness of educational systems but also play a significant role in shaping students' future opportunities and prospects (Singh & Shaari, 2019). By identifying and addressing the factors contributing to academic performance, educators can provide targeted interventions and support systems to enhance student learning outcomes and ensure educational success.

A nation's greatness is characterized by its literate society, high civilization, and active contributions to the world society. Literacy goes beyond mere eradication of illiteracy; it encompasses the ability of citizens to compete and coexist globally. A nation with a strong literacy culture demonstrates its communicative, creative, critical thinking, and collaborative abilities, enabling it to excel in global competition (Majorano et al., 2021).

In the era of the industrial revolution 4.0 and Society 5.0, education must be based on 21st-century skills, including literacy, competence, and character. Six fundamental literacies shape students' development of these skills: literacy, numeracy literacy,

science literacy, financial literacy, digital literacy, cultural literacy, and citizenship (Castner et al., 2020).

The Philippines faces a significant challenge with a high rate of low performers among PISA-participating countries and economies. The 2018 PISA report revealed that 71.8 percent of participating students from the Philippines have failed to reach minimum basic learning thresholds, raising doubts about the state of education in the country (Alinsunurin, 2021). Their poor scores in English, Mathematics, and Science can be attributed to a lack of basic reading and comprehension abilities. A World Bank report from last year revealed that Filipino students scored poorly on math, science, and literacy assessments, compounded by issues like bullying and health problems such as malnutrition.

To address these challenges, the Department of Education (DepEd) launched the "Hamon: Bawat Bata Bumabasa" (3Bs Initiatives) as explicitly stated in DepEd Memorandum Number 173 Series of 2019. This initiative aims to intensify the advocacy for reading and commits to making every learner a reader at their grade level. Early exposure to Mathematics is also recognized as a factor that increases students' odds of achieving academic and personal success in school and life. Additionally, early reading instruction is considered one of the most crucial outcomes of primary education, as it develops comprehensive literacy skills necessary for successful participation in society. The interplay between numeracy and literacy is integral to the learning process of students. The language of Mathematics involves creating and communicating mathematical meanings using context-appropriate language, which goes beyond recognizing and responding to isolated words (Domingo, 2021). This requires the use of words and symbols that match the cognitive abilities of the learners involved. Communicating mathematical concepts effectively is challenging, especially when the teacher and student have different preferred languages (Janes & Strong, 2014).

Literacy and numeracy skills are fundamental components of a child's education, playing a crucial role in their academic development and future success (Souviney, 2013). Grade 3 is a critical stage in a student's educational journey, marking the transition from foundational learning to more advanced subject areas. Understanding the factors influencing the academic performance of Grade 3 students, particularly in terms of literacy and numeracy, is essential for designing effective educational interventions and improving overall learning outcomes.

Previous studies have shown that a student's English proficiency influences their performance in Mathematics. There is a strong correlation between English reading and measures of cognitive development and mathematical accomplishments (Sindoni et al., 2021). Language in Mathematics instruction serves to facilitate precise communication of mathematical knowledge between instructors and students. Using a language that matches the cognitive abilities of students in terms of structure, meaning, technical vocabulary, and symbolism is vital for achieving the goals of Mathematics education. However, the interpretation of messages can be subjective, highlighting the importance of clear communication (Slusser, 2019).

The impact of this situation is starkly reflected in the literacy and numeracy assessment performance of Grade 3 students in the Motiong District. According to the consolidated data from the Philippine Reading Inventory for Grade 3 learners, the figures are concerning. In the academic years 2020-2021, 2021-2022, and 2022-2023, out of 287, 268, and 274 students respectively, a significant portion, approximately 31% in each year, were classified as being at the frustration level, as reported by District PROMEDS. Similarly, when examining the numeracy levels within the same cohort, the results are equally troubling. In the years 2020-2021, 2021-2022, and 2022-2023, out of 287, 268, and 274 students respectively, a concerning percentage, ranging from 31% to 35%, were identified as non-numerates according to District PROMEDS. These findings underscore a pressing need for targeted interventions and educational strategies to address the literacy and numeracy challenges faced by Grade 3 students in Motiong District.

While existing research has emphasized the importance of literacy and numeracy skills for academic achievement, there is still a gap in understanding the specific factors influencing the performance of Grade 3 students. Most studies have focused on the general relationship between literacy/numeracy and academic achievement without considering the nuances within the Grade 3 context. This study aims to address this research gap by investigating the unique challenges and opportunities Grade 3 students face in developing their literacy and numeracy skills and how these skills impact their academic performance. The findings will provide insights to inform educational policies and practices that promote better learning outcomes for Grade 3 students.

Furthermore, examining the interaction between literacy and numeracy skills can uncover potential synergistic effects when these skills are taught in an integrated manner. Considering the intertwined nature of literacy and numeracy, educators can develop instructional strategies that facilitate cross-domain learning, leading to enhanced academic outcomes for Grade 3 students. While existing research has explored the impacts of literacy and numeracy skills on academic performance, there is a need for more studies focusing specifically on the joint effect of these skills within the Grade 3 context. Addressing this research gap will provide valuable insights for educators and policymakers, enabling them to comprehensively develop Grade 3 students and make informed decisions to optimize their academic achievement.

Research Questions

This study delved into determining the effect of literacy and numeracy on the academic performance of Grade 3 students in the District of Motiong, Schools Division of Samar during the School Year 2023-2024. Specifically, the study sought answers to the following questions:

1. What is the profile of the Grade 3 students in terms of the following:
   1.1 age and sex;
   1.2. parents' highest educational attainment;
   1.3. gross monthly family income;
   1.4 parents' occupation;

1.5 final grade in English and Mathematics in the previous grade level;
1.6 reading materials utilized at home;
1.7 numeracy materials utilized at home; and
1.8 attitude toward numeracy and literacy?

2. What is the level of implementation of numeracy program in the District of Motiong as assessed by the student respondents in terms of the following:
2.1 activities and strategies;
2.2 Mathematics assessment;
2.3 class structures;
2.4 student engagement;
2.5 learning environment/materials; and
2.6 principles on Mathematics instruction?

3. What is the level of implementation of literacy program in the District of Motiong as assessed by the student respondents in terms of the following:
3.1 reading components and early literacy strategies;
3.2 decoding and word analysis;
3.3 phonological awareness;
3.4 vocabulary in context;
3.5 fluency;
3.6 class structures;
3.7 student engagement;
3.8 learning environment/materials;
3.9 reading principles of literacy instruction; and
3.10 reading assessment?

4. Is there a significant relationship between the students' personal profile and the following:
4.1 numeracy program implementation; and
4.2 literacy program implementation?

5. What is the academic performance of the student-respondents based on the first and second quarters during the School Year 2023-2024?

6. Is there a significant relationship between the academic performance of the Grade 3 student-respondents and the following:
6.1 student-related variates;
6.2 perceived level of numeracy program implementation; and
6.3 perceived level of literacy program implementation?

7. What are the problems encountered by student-respondents with regard to numeracy and literacy program implementation?

Locale of the Study

Figure 1
The Map Showing the Locale of the Study

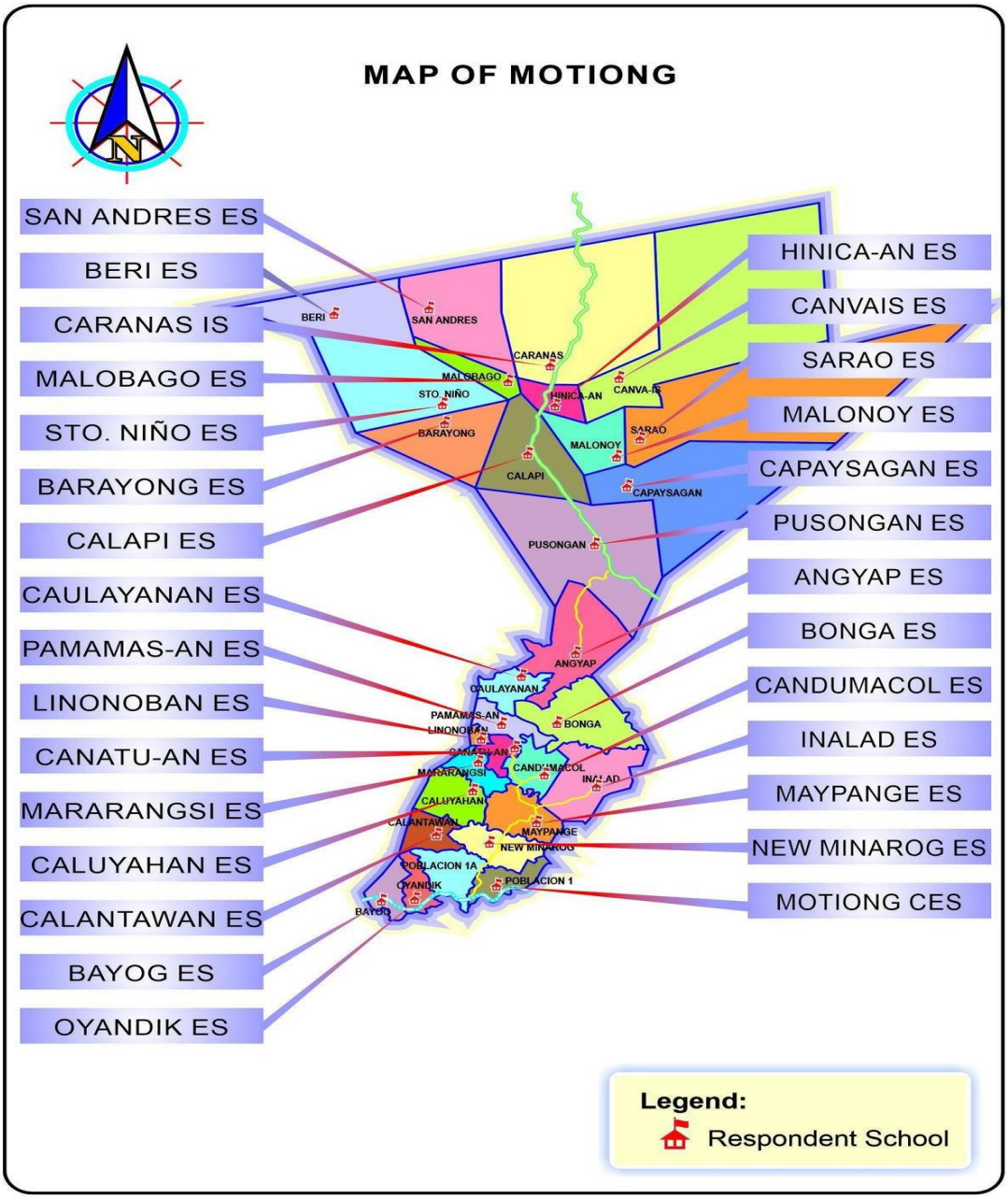


Figure 1 displays the vicinity map of Motiong, Samar. The study would be conducted in the District of Motiong, which is located in the Division of Samar. Motiong is classified as a fourth-class municipality and is one of the towns within Samar Province. The District of Motiong comprises twenty-nine (29) elementary schools.

METHODOLOGY

This research used a quantitative approach to explore the connection between how well literacy and numeracy programs are implemented and how well Grade 3 students perform academically. The study focused on 181 Grade 3 students in the District of Motiong. A questionnaire was the main tool for collecting data. This questionnaire was adopted from the Organization for Economic Cooperation and Development's (2015) publication titled "Teacher Education Program on Early Numeracy and Literacy". The parts of the questionnaire that asked about students themselves were reviewed by a panel of experts to make sure they were accurate and appropriate. To collect the data, the researcher got permission from various school officials and then personally conducted the survey. The surveys were done one-on-one in a private location to protect the students' privacy. Finally, after all the data was collected, it was analyzed using statistical methods.

RESULTS AND DISCUSSION

The following were the salient findings of the study:

1. Most of the students are between 8 and 9 years old; had a relatively balanced sex distribution, parents reached Elementary Graduate within the PHP5,001-10,000 income bracket, most fathers were self-employed while the majority of mothers were unemployed. Moreover, most students performed well in both subjects (Scores 90-100 in English & Mathematics, the most used reading material are books and dictionaries. They usually used money, clock, and counting objects used at home, and had an uncertain attitude towards numeracy and literacy.

2. Generally, the level of numeracy program implementation was highly evident. In particular, class structures (mean =4.17), student engagement (mean=4.14), learning environment (mean=4.06), mathematics assessment (mean=3.84), and activities and strategies (mean=3.77).

3. The level of implementation of the literacy program was Highly Evident along reading components and early literacy strategies (mean=4.27), decoding and word analysis (mean=3.64), phonological awareness (mean=3.84), vocabulary in context (mean=4.26), fluency(mean=4.47), class structures (mean=4.22), student engagement (mean=3.84), learning environment/materials, reading principles of literacy instruction (mean=4.39), and reading assessment (mean=4.12).

4. The student’s age and the perceived level of implementation of numeracy program along with student engagement was significantly correlated with their age (r=0.204, p=0.006). While, student’s perceived level of literacy program implementation along fluency (r=-0.165, p=0.027) and reading assessment

(r=0.147, p=0.048) were significantly correlated with their age.

5. Along with the level of numeracy program Implementation, the sex category of the student respondents had a significant relationship with their perceived level of numeracy program implementation along activities and strategies (r=-0.178, p=0.016). Along with literacy program implementation, the sex category of the student-respondents had no significant relationship with their perceived level of literacy program implementation (p>0.05).

6. In terms of numeracy program implementation, the gross family monthly income of the student-respondents had a significant relationship with their perceived level of numeracy program implementation along with the following domains: activities and strategies (r=0.331, p<0.001); mathematics assessment (r=0.249, p=0.001); student engagement in numeracy programs (r=0.237, p=0.001), and principles of mathematics instruction (r=0.274, p<0.001). On the other hand, along with literacy program implementation, the gross family monthly income of the student-respondents had a significant relationship with their perceived level of literacy program implementation along with the following domains: reading components and early literacy strategies (r=0.382, p<0.001); decoding and word analysis (r=0.363, p<0.001); vocabulary in context (r=0.381, p<0.001), and reading assessment (r=0.418, p<0.001).

7. In terms of the numeracy program implementation, the reading materials utilized at home by the students had no significant correlation with their perceived level of numeracy program implementation (p>0.05). Meanwhile, in the literacy program implementation, the reading materials utilized at home by the students had a significant correlation with their perceived level of implementation along the following domains: phonological awareness (r=0.189, p=0.011; fluency (r=-0.154, p=0.039); student engagement (r=0.189, p=0.011), and learning environment/materials (r=0.171, p=0.022).

8. Along with the numeracy program implementation, the number of numeracy materials utilized at home was significantly related to the program implementation along activities and strategies (r=0.189, p=0.011) and student engagement (r=0.215, p=0.004); However, along with the literacy program implementation, the number of numeracy materials utilized at home had a significant relationship with the following domain of implementation: Decoding and word analysis (r=0.199, p<0.05); Phonological awareness (r=0.158, p<0.05); Vocabulary in context (r=0.163, p<0.05); fluency (r=-0.228, p<0.05); Reading principles of literacy instruction (r=0.186, p<0.05), and Reading assessment (r=0.297, p<0.05).

9. Along with the numeracy program implementation, the student's attitude towards numeracy and literacy shows a significant association with the following domains of implementation: activities and strategies (r=0.781, p<0.001); student engagement (r=0.492, p<0.001); learning

environment/materials (r=0.346, p<0.001), and principles on mathematics instruction (r=0.460, p<0.001). While, in terms of literacy program implementation, the student's attitude towards numeracy and literacy shows a significant association with the following domains of implementation: reading components and early literacy strategies (r=0.229, p=0.002); decoding, phonological awareness, vocabulary in context, and fluency (p<0.05); student engagement, learning environment/materials, reading principles of literacy instruction, reading assessment (p<0.05).

10. Along with the numeracy program implementation, the parent's educational attainment shows a significant association with the following domain of implementation: activities and strategies (both parents, p<0.05); mathematics assessment (father, p<0.05); class structure (mother, p<0.05); student engagement (both parents, p<0.05); Learning environment/materials (both parents, p<0.05), and principles on Mathematics instruction (both parents, p<0.05). While, in terms with the literacy program implementation, the parent's educational attainment shows a significant association with the following domain of implementation: Reading components and early literacy strategies (both parents, p<0.05); Decoding and word analysis (both parents, p<0.05); Phonological awareness (both parents, p<0.05); Vocabulary in context (both parents, p<0.05); Fluency (mother, p<0.05); Student engagement (mother, p<0.05); Learning environment/materials (mother, p<0.05); Reading principles of literacy instruction (both parents, p<0.05); Reading assessment (both parents, p<0.05).

11. In terms of the numeracy program implementation, the student's final grade in Math and English shows a significant association with all the domains of the program implementation except with the mathematics assessment (p>0.05). In terms of the literacy program implementation, the student's final grade in Math and English shows a significant association with all the domains of the program implementation except for the class structures (p>0.05).

12. The students in Motiong District achieved high academic performance, with 23.2% scoring between 90-100 and 28.2% scoring between 80-84.

13. The academic performance was significantly related with the following student's profile: age (r = -.159, p = .033) ; gross family monthly income (r =-.256, p<0.05); parent's educational attainment (p<0.05); number of numeracy materials utilized at home and attitudes towards numeracy and literacy (p<0.05), and students' final grades in English and Math and their overall academic performance (r = .620, p = .000 for English; r = .682, p = .000 for Math).

14. Along with numeracy and literacy program implementation, the student's academic performance had a significant correlation between their perceived level of numeracy and literacy program implementation except for the

implementation of mathematics assessment (p>0.05).

15. The students found three indicators that they considered as Highly a Problem were the following: lack of time management (mean=3.56); lack of drill work (3.54), and grasping concepts slowly (mean=3.35).

Attitude toward Numeracy and Literacy of the Student-Respondents

Table 1 shows the attitude toward numeracy and literacy of the student-respondents.

Table 1

Attitude toward Numeracy and Literacy of the Student-Respondents

	Indicators	Mean	SD	Interpretation
1.	I really like Mathematics and English.	3.51	1.75	Agree
2.	I am happy in my Mathematics and English classes compared to other classes.	3.39	1.7	Undecided
3.	I think studying advanced Mathematics and English is useful.	4.64	0.75	Strongly Agree
4.	Mathematics and English are very interesting to me.	3.40	1.66	Uncertain
5.	I believe studying Mathematics and English helps me with problem-solving in other subjects.	4.61	0.82	Strongly Agree
6.	I am comfortable answering Math problems and indulge in selection reading in class.	3.30	1.65	Uncertain
7.	I have a lot of self-confidence when it comes to Mathematics and English.	3.35	1.74	Uncertain
8.	I am always under terrible strain in Math and English class.	2.64	1.51	Uncertain
9.	Studying Mathematics and English makes me feel nervous/uneasy.	2.60	1.52	Uncertain
10.	Mathematics and English make me feel irritable.	2.60	1.42	Uncertain
	Grand Weighted Mean	**3.40**		**Uncertain**

Legend:
4.50-5.00 Strongly Agree
3.50-4.49 Agree
2.50-3.49 Uncertain/Undecided
1.50-2.49 Disagree
1.00-1.49 Strongly Disagree

The results revealed that students have an overall uncertain attitude towards numeracy and literacy, with a grand mean of 3.40. Some of the key findings were as follows: Students agree that they like Mathematics and English (mean=3.51) and are undecided about being happier in these classes compared to others (mean=3.39); they were also uncertain about Mathematics and English for being interesting to them (mean=3.40), being comfortable answering math problems and doing reading in class (mean=3.30), and having self-confidence in these subjects (mean=3.35). Much that they were uncertain about feeling terrible strain (mean=2.64), nervous/uneasy (mean=2.60), and irritable (mean=2.60) when studying Mathematics and English.

On the other hands, students strongly agree that studying advanced Mathematics and English is useful (mean=4.64) and that it helps them with problem-solving in other subjects (mean=4.61).

These results suggest that while students recognize the usefulness and importance of numeracy and literacy skills, they may lack confidence, interest, and comfort in these areas. This could be due to various factors such as teaching methods, learning resources, or prior experiences.

Conclusions

From the findings of the study, the following conclusions were drawn:

1. The demographic profile of Grade 3 students in Motiong District suggests that most students are performing well academically, with a significant portion scoring in the 90-100 range in both English and Math. However, the relatively balanced sex distribution, parents' educational attainment, and family income levels indicate that socioeconomic factors may not be the primary drivers of academic success in this population. The use of common household items for numeracy practice and the uncertain attitude towards literacy and numeracy among students could be areas for further investigation and potential intervention

2. The high level of implementation of the numeracy program in Grade 3 classrooms in Motiong District, particularly in areas such as class structures, student engagement, learning environment, mathematics assessment, and activities and strategies, suggests that these factors contribute positively to students' numeracy skills development. However, high implementation levels alone do not guarantee improved academic performance, and other factors, such as the quality of instruction and student motivation.

3. The highly evident implementation of the literacy program in Grade 3 classrooms in Motiong District, particularly in areas such as reading components and early literacy strategies, decoding and word analysis, phonological awareness, vocabulary in context, fluency, class structures, student engagement, learning environment/materials, reading principles of literacy instruction, and reading

assessment, indicates that these factors are well-integrated into the curriculum and teaching practices. This comprehensive approach to literacy instruction likely contributes to the overall academic performance of students in the district. However, it is essential to continuously monitor and evaluate the effectiveness of these practices to ensure that they are meeting the diverse needs of all students.

4. The older students tend to be more engaged in numeracy activities compared to younger students. However, older students may struggle with fluency but perform better on reading assessments.

5. Gender differences in how students engage with and respond to certain numeracy activities and teaching strategies may be considered. However, the lack of a significant relationship between sex and perceived literacy program implementation implies that literacy instruction may be more equitable across genders.

6. Students from higher-income families may have access to more resources and support that enhance their engagement and performance in numeracy programs. Similarly, socioeconomic status may play a role in literacy development.

7. Access to reading materials at home can enhance certain aspects of literacy development. However, reading materials alone may not be sufficient to improve fluency.

8. Access to numeracy materials can enhance engagement and participation in numeracy-related activities. Similarly, numeracy materials can also support certain aspects of literacy development. However, numeracy materials alone may not be sufficient to improve fluency.

9. A positive attitude can enhance engagement and performance in numeracy programs. Similarly, a positive attitude can also support various aspects of literacy development.

10. Higher parental education levels are associated with more effective implementation of numeracy programs. Similarly, parental education plays a role in the effectiveness of literacy instruction.

11. Effective numeracy instruction is closely linked to academic performance. Similarly, high-quality literacy instruction is also associated with academic success.

12. Educational system in the district is effectively supporting student learning and achievement. However, it is important to note that a small percentage of students (2.8%) scored below 75, indicating the need for targeted interventions and support to ensure that all students have the opportunity to succeed academically.

13. Older students may face challenges in keeping up with their grade level. socioeconomic status can be a barrier to academic success. parental involvement and support in student learning. access to resources, positive attitudes, and strong

foundational skills in core subjects are key factors in academic achievement.

14. Effective instructional practices in these areas are closely linked to academic success. However, assessment practices may not be as strongly associated with performance as other aspects of numeracy and literacy instruction.

15. The top three problems provide valuable insights into areas where additional support and interventions may be needed.

Recommendations

Anchored on the conclusions drawn from the findings, the following recommendations are offered:

1. Differentiated instruction and targeted support to address students' varying literacy and numeracy needs at different ages may be introduced.

2. Further investigation may be conducted to understand the underlying factors contributing to gender differences and ensure that all students, regardless of sex, have equal opportunities to develop their numeracy skills.

3. Interventions and support may be imposed to ensure that students from all socioeconomic backgrounds have equal opportunities to succeed academically.

4. Variety of numeracy and literacy resources and support both at home and in the classroom may be recommended to foster comprehensive skills.

5. Targeted interventions may be recommended for fostering positive attitudes towards numeracy and literacy through engaging instructional practices, supportive learning environments, to help students achieve academic success.

6. Parents may encourage to engage in their children's education and provide support to families to enhance student learning outcomes.

7. Evidence-based, comprehensive numeracy and literacy programs that prioritize effective teaching strategies, learning environments, and student engagement to support academic achievement may be implemented.

8. Educators may create more supportive and effective learning environments that enable students to reach their full potential.

Compliance with Ethical Standards

This study prioritized ethical research practices. Students participating in the survey were thoroughly informed about the research goals, both through written materials and verbal explanations. They were also assured of their right to withdraw from the study at any point, without needing to give a reason. Additionally, strong

measures were put in place to safeguard the confidentiality of all student information.

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BULLYING IN SCHOOL FROM THE EXPERIENCES OF THE BULLIES: A MULTIPLE CASE STUDY

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ABSTRACT

Bullying is a pervasive issue affecting individuals across various settings, including homes, schools, and workplaces. Particularly impactful among secondary school students, it poses significant risks to their psychosocial, emotional, and academic well-being. This research seeks to explore the dynamics of bullying, examining the experiences of both bullies and their victims, and identifying the underlying factors that contribute to bullying behavior. Extensive research underscores the adverse effects of bullying on children's health and behavior, manifesting in diverse forms that can be challenging to monitor comprehensively. Employing a multiple case study approach, this study analyzes processes and outcomes across various instances, highlighting how unique contexts and circumstances influence each case. From exposure to bullying behaviors in adult and media settings to the importance of community-wide involvement, effective anti-bullying initiatives necessitate collaboration among parents, educators, and communities. A holistic intervention strategy involving all stakeholders ensures a safe and supportive learning environment for students.

Keywords: *bullying, bullying in school, effects of bullying, multiple case study*

INTRODUCTION

According to the survey conducted by the Teen Online & Wireless Safety (2009) in the United States of America (USA), 58 percent of the bullies are trying to get back to

the victims for various reasons and feel that the victim deserves it. Furthermore, the Centers for Disease Control and Prevention (2015) and the US Department of Education found that 70.6 percent of young students have seen bullying at school, with approximately 30 percent admitting to bullying others.

In the Philippines, bullying is widespread in schools and over the Internet. A study states that about 50 percent of Filipino students are bullied in school (Bullying in the Philippines, 2016). Bullying has the potential to harm both the aggressor and the victim. The Department of Education (DepEd) issued DepEd Order Number 40 (2012), which provides the policy and guidelines on protecting children in school from abuse, violence, exploitation, discrimination, bullying, and other forms. It was the basis of creating an anti-bullying committee in our schools today. Subsequently, President Benigno S. Aquino III signed the Republic Act 10627 or the Anti-Bullying Act of 2013 on September 12, 2013. It mandates that all elementary and secondary schools implement policies to prevent and address the acts of bullying in their institutions. Sadly, bullying in schools continues to thrive among children event though parents and teachers collaborate to prevent it from happening in schools. In the School Year 2013-14 alone, the Department of Education in Manila documented over 1,700 bullying and child abuse cases, even after passing anti-bullying legislation. Fortunately, 60 percent of the cases were resolved. In the latest survey, 80 percent of young teens in the Philippines experience cyberbullying (GMA News Online, 2016).

The researcher wanted to explore the other side of the story of bullying, the bully's experiences. There appears to be very little research that gives the perpetrators' explanation of their behavior. The researcher is interested in focusing his research on the experiences of bullies in school.

This study aims to understand the bullies' bullying experiences and the surrounding factors that drive them to bully other students. It endeavored to go deeper into the research informants' feelings, sentiments, and insights about their bullying behavior in school. Through this, the researcher can review measures to prevent or lessen bullying incidents inside the classroom and recommend a program that will address the needs of the bullies as future citizens of this country.

Literature Review/Related Works

Bullying in schools is gaining widespread attention from research, the media, school officials, and parents who are concerned about their children's well-being and safety. There is no single cause of bullying behavior and no predominant factor that predicts which children become bullies. Instead, the interaction of individual, familial, peer, school, and community factors the risk increases that a child will become a bully (Allen, 2005). Moreover, there is clear evidence that school violence and bullying have a negative impact on the academic performance and physical, mental, and emotional well-being of the victims (UNESCO, 2016). There is a vast amount of study on bullying in Australia, Canada, Europe, and Japan, and awareness of the extent and impacts of bullying is expanding.

Hartmann (2011) believes that a bully generally feels like a victim. Sadly, if there is no intervention to help the bully deal with his or her own problems, that means moving on to the next victim. It is not uncommon for them to justify his actions by blaming the other child for his behaviors. Moreover, we must also seek to resolve the problems of the bully while working to resolve the problems of the bullied. Many of them will find a new outlet for their behavior and a new way to achieve strength, but others never will.

Types of Bullying. These are the primary forms of bullying: physical, verbal, social, and cyberbullying.

Physical Bullying. School personnel is more likely to pay attention to this than other types of bullying. It includes slapping, hitting, choking, poking, punching, kicking, biting, pinching, scratching, spitting, and damaging or destroying property belonging to the bullied. In UNICEF Report (2014), around 6 percent of boys and girls reported being physically attacked or hurt on the school premises. In addition, 22 percent reported being threatened, robbed, or assaulted at school. On one hand, parents and other caregivers are found to be the most common perpetrators of physical abuse against adolescent girls. However, teachers were also mentioned by a substantial proportion of girls in some countries: 48 percent in Uganda, 42 percent in Kenya, 32 percent in Nigeria, 28 percent in Tanzania, 16 percent in Cameroon, 12 percent in Timor- Leste, Moldova, and Zimbabwe, 11 percent in the Democratic Republic of Congo, and 10 percent in Zambia.

Verbal Bullying. It is difficult for teachers, counselors, and other school authorities to detect since no physical harm occurs. It includes name-calling, taunting, belittling, cruel criticism, personal defamation, racist slurs, and sexually suggestive or sexually abusive remarks (Coloroso, 2004). It can make youngsters feel furious, scared, and helpless. When a child cannot share their feelings with someone else, it can leave them emotionally exhausted and bruised. Verbal bullying should be dealt with seriously by parents, counselors, teachers, and school administrators for it destroys children's self-image and self-esteem. In certain situations, verbal bullying can cause the victim to become so sad and desperate to escape that he or she turns to substance misuse or, in severe cases, suicide.

Social Bullying. Social or relational bullying is a deliberate exclusion from a social group or intimidation within the group. It includes psychological injury and social system manipulation. It refers to instances where the perpetrator may spread rumors, backbite, or exclude the victim from their peer group (Coloroso, 2004). Social bullying aims to make another person or group feel inferior and hurt them. Social bullying has a wide range of harmful outcomes. Depression, anxiety, social isolation, and low self-esteem are common symptoms among victims (Davies, 2015). Due to tremendous emotional and societal pressures, some victims commit suicide or homicide. Bullying victims may carry emotional scars into adulthood, leading to melancholy, social isolation, and an inability to respond effectively to unfair situations.

Cyberbullying. It refers to the willful and repeated harm inflicted through computers, cell phones, and other electronic devices. A child or teen is subjected to text

messages, emails, or online posts, such as on Facebook, Twitter, blogs, or other websites. These messages are sometimes cruel, threatening, defamatory, and deliberately misleading. It may include spreading rumors, posting false information, hurtful messages, embarrassing comments or photos, or excluding someone from online networks or other communications.

Data from the Australian Covert Bullying Prevalence Study (2007) found that around 7 percent of students aged 9 to 15 reported cyberbullying experiences. The experience of being victimized by bullying others online increased with age, and bullying through social networking sites was more common than bullying via mobile phones as students got older. On the other hand, the EU Kids Online Final Report (2011) collected from over 25,000 children and adolescents between the ages of 9 and 16 in 25 European nations, 6 percent reported being bullied online, and 3 percent admitted to having bullied others online. Meanwhile, the Youth Risk Behavior Survey 2013 (2014) found that in the USA, in the previous year, 15 percent of children in grades 9 to 12 were bullied via email, chat rooms, instant messaging, websites, or texting.

Effects of Bullying. These are the effects of bullying on the bullied and the bully's academic, emotional, physical, and social life.

***Academic*.** Bullying in school affects academic achievement and students' personality and self-confidence since bullied children feel fear and weak. Kids who are bullied regularly obtain lower marks, participate less in class discussions, and maybe mislabeled as low achievers because they are afraid of being bullied if they speak up in class. Moreover, they miss opportunities to participate in their discussions or even enjoy school activities. Students who faced bullying for much of their time in school had the most significant risk of low achievement and engagement (Crist, 2017).

Emotional. Data show that stressful events in life could lead to depression, anxiety, and other psychiatric symptoms. Being bullied is a significant life stressor. Copeland, Wolke, and Angold (2013) provide compelling evidence that being a victim of bullying, or both a victim and a perpetrator, increases the likelihood of major emotional issues. They experienced depressive and anxiety disorders and suffered most severely from suicidal thoughts, depressive disorders, generalized anxiety, and panic disorder. Most common stress or anxiety-related symptoms include sleep disorders, gastrointestinal concerns, headaches, palpitations, and chronic pain. Furthermore, Steele (n.d.) mentioned that bullying victims have difficulties trusting others, have fewer job possibilities, and grow up to be loners.

Physical. Physical injury is an immediate indication that physical bullying took place. Children who experienced chronic bullying showed greater adiposity and showed higher body mass index and waist-hip ratio and risk of becoming overweight (Baldwin, Arseneault, & Danese, 2015). Bullying was linked to a higher likelihood of headaches, sleeping issues, abdominal pain, bed-wetting, and feeling exhausted in children aged 9 to 12. In the USA, bullying was linked to headaches, stomachaches, backaches,

dizziness, and sleep disturbances, according to a survey of over 16,000 kids in grades 6 to 10 (Srabstein et al., 2006).

Social. Steele (n.d.) mentioned that bullies often become unhappy adults. In maturity, where quick tempers and violent activities are often condemned by society, their techniques of interacting with the world often do not function very well. They may struggle to keep a career, establish friendships, and even sustain sexual or family ties. Bullies frequently engage in learned behavior, which they learned from abusive parents, siblings, relatives, or carers at home. They were more likely to be unhappy and worried later in life, and they had a higher rate of young adult psychiatric problems. In South Korea, it was found that being bullied contributed to an increased risk of social problems (Kim, Leventhal, Koh, Hubbard, & Boyce, 2006). In the study, social problems were described as acting younger than one's age, being overly dependent on adults, and behaving socially immature - all factors that heighten the risk of social isolation within the peer group.

Related Studies

Bullying in School. In a study by UNESCO (2006) in 16 Latin American and Caribbean countries, based on data from around 91,000 students aged 10 to 14, 51 percent overall reported experiencing some kind of bullying like being robbed, insulted or threatened. Meanwhile, in Laos, bullying was reported by 98 percent of girls and 100 percent of boys at school, with the victims mostly being girls or ethnic minorities.

The Australian Covert Bullying Prevalence Survey (2007), a national survey of students between 9 and 15 years old, found that 27 percent reported experiencing frequent bullying, while 9 percent admitted bullying others. While in the USA, in a 2015 poll of students in grades 9 to 12, 20.2 percent said they had been bullied on school grounds, and 15.5 percent indicated they had been bullied online. In a study in France carried out by the International Observatory on Violence in Schools (2011) found that around 32 percent of the students aged 9 to 12 experienced bullying at school perpetrated by other students.

In the Philippines, Datukon (2016) mentioned that 2 out of 10 children per day experience being made fun of, name-calling, and making the child do something he/she does not want to do. Cyberbullying affects girls more than it affects boys. Recently, Filipino cyberbullies appear to be creative since, more than words, they use photoshopped images to hurt their victims.

Bullies' Perspective of Bullying. Research made by Zapf and Gross (2001) found that it was not always the perpetrators that escalated the conflict but, at times, the victims who carried out retaliatory, provocative, and threatening themselves.

Several studies find that families of bullies have a high level of interparental conflict. Baldry (2003) mentioned that physical violence between parents was significantly related to direct bullying in children, with bullies being 1.8 times more likely

to have been exposed to domestic violence than not exposed. The impact of mothers threatening fathers was also a significant predictor of bullying, with children exposed to inter-parental threats being more likely to be involved in indirect bullying in school. Some research also points to a link between the experience of child maltreatment and bullying behavior, suggesting that the bully at school may be a victim at home (Williams, 2010). Moreover, school and community-related risk factors for bullying include a lack of adequate adult supervision and cultures in which teachers, other adults, and students have indifferent or tolerant attitudes towards bullying.

Anti-Bullying Practices in School. There is a potential benefit of developing an anti-bullying committee in schools. However, schools must utilize the most effective approach. It was found that using a zero-tolerance approach in response to bullying is unhelpful in dealing with the core issue (Rigby, 2012). Furthermore, a zero-tolerance policy would require schools to conduct formal investigations of bullying complaints and penalize offenders according to a gradated system, leading to higher suspensions with no reduction in bullying incidents. Instead of these programs, establishing more positive relations between school community members and using more non-punitive intervention strategies, providing a more effective and humane approach. Seaman (2012) agreed that the strategy of embedding skills of empathy and compassion into the curriculum included situations in which students could practice putting themselves in the victim's shoes. This approach could provide a safe environment where students can feel compassion for victims and strengthen their morals. Moreover, Bauman, Rigby, and Hoppa (2008) mentioned that counselors were reportedly more empathetic when confided in and understood the seriousness of the incidents than teachers, especially when it came to relational bullying.

Research Questions

The main concern of this study was to explore bullying from the experiences of the bullies. Specifically, the study sought to answer the following questions:

1. What are the bullying experiences of the research informants at home?
2. What are the bullying experiences of the research informants in school?
3. What are the bullying experiences of the research informants with peers?
4. What drives bullies to bully despite the warning given by the school?
5. How does bullying affect the academic, emotional, personal and social life of the research informants?

METHODOLOGY

The study's research informants were chosen using the purposive sampling method. They were the identified bully students from Grade 7 to Grade 12 of New Albay National High School for SY 2016-2018. The critical age of students in aggressive and violent

behavior is found at the beginning of secondary school or in early adolescence. The researcher purposely chose from the record of the Prefect of Discipline and the anecdotal records from the Guidance Office of the students who had remarkable cases of bullying in school.

This is qualitative research and utilized the multiple case study approach. A case study is a research technique that entails an in-depth investigation of a specific limited system using several modes of data gathering to methodically obtain information on how the system runs or performs (Mills, Durepos, & Wiebe, 2010). In order to gather deeper and broader information regarding the experiences of bullying by the research informants, an interview guide was utilized to gather relevant data on the subject under study. The audio recorder made the data valid and reliable during the in-depth interview.

The approach which was used to analyze the data was thematic analysis. This was done in keeping with the multiple case study. The study wanted to present a holistic view of data wherein the data and information gathered were transcribed in a verbatim fashion, and themes were created. The transcription was encoded in the computer for safekeeping and analysis. Transcribed data were submitted to the data analyst for the validity and accuracy of the analysis.

RESULTS AND DISCUSSION

Discussions

Case 1 - The Only Child
Case 2 - The Effeminate
Case 3 - The Avenger
Case 4 – The Influencer
Case 5 – The Stubborn Joker
Case 6 – The Anxious Child
Case 7 – The Hot-Tempered
Case 8 – The Naughty Kid
Case 9 – The Optimistic

Bullying Experiences at Home

The emerging themes were no act of bullying at home, being bullied for handicap, being scolded by parents, being called gay, and being called by father's name. It is noteworthy that some research informants had no bullying experiences at home. On the contrary, they were the ones who instigated bullying at home towards their younger siblings.

Another emerging theme was being bullied for handicap. Sadly, physical deformities became the subject of bullying at home such as having a cleft lip, bald head, and closed ear. Bullying was instigated by their family members.

Another emerging theme was being scolded by parents. Some research informants felt that since they were the oldest among the siblings, they were responsible for taking care and overseeing their younger siblings and maintaining the house's cleanliness and orderliness. On the other hand, another emerging theme was being called gay. His effeminate ways made him the subject of bullying at home. Lastly, being called by father's name. Research informants had experienced bullying due to the old-fashioned name of his father.

One of the most common forms of bullying for teenagers is verbal bullying. It can make youngsters feel furious, scared, and helpless. According to Cowie and Jennifer (2008), verbal bullying can exacerbate problems at school that a victim may already be dealing with at home or elsewhere. Some research also pointed out a link between the experience of child maltreatment and bullying behavior, suggesting that the bully at school may be a victim at home (Williams, 2010).

Bullying Experiences in School

The emerging themes were being called by parent's name, bullied for gay actuations, retaliated by bullying, simple mockery, bullied for physical defects, being instigated to fight, and bullied for the mistakes made.

The first emerging theme was being called by parent's name. The research informant was teased due to the old-fashioned name of his parents. Another emerging theme was bullied for gay actuations. He was bullied for being effeminate though his sexual orientation was straight. The research informant bullying experiences in school led him to get even with the bullies. They bullied in order to avenge the bullying that they had gone through.

Furthermore, another emerging theme was bullied for physical defects like having big teeth, a bald head, and a cleft lip. Although, there were also instances that bullies instigated the research informants into fighting. Lastly, some were bullied for a mistake made. They were bullied for failing to execute the plan and got booed by their classmates.

According to the survey conducted by the Teen Online & Wireless Safety (2009) in the United States of America (USA), 58 percent of the bullies are trying to get back to the victims for various reasons and feel that the victim deserves it. Furthermore, the Centers for Disease Control and Prevention (2015) and the US Department of Education found that 70.6 percent of young students have seen bullying at school, with approximately 30 percent admitting to bullying others.

Bullying Experiences with Peers

The emerging themes were retaliatory bullying, bullying by stereotyping, casual bullying among peers, physical bullying, and bullying on social media. The first emerging

theme was retaliatory bullying. Among their peers, retaliation or getting even with the bully was the common reason for bullying experiences with peers. On the other hand, research informants were stereotyped by friends as boastful by the way they walked and talked. The bullies even called him names like piranha.

Another emerging theme was casual bullying among peers. These are jokes and are not intended to hurt their peers. Moreover, another emerging theme was physical bullying. The arguments between friends turned into physical violence. They got into a fistfight.

The last emerging theme was bullying in social media. Social media is the standard form of communication today. However, it also turned into a venue for others to bully their friends. Uploaded photos, especially when they were still children, became the subject and object of bullying by their friends.

Children and adolescents, and adults can react aggressively when being threatened and attacked, especially when they feel the attack was unjustified (Fluck, 2014). Moreover, children who displayed externalizing behavior problems were more likely to engage in bullying behavior.

Motives for Bullying

The emerging themes were no apparent motive, to get even, and after being pissed off. The majority of the research informants had no apparent motives for their bullying behavior. Bullies motivation was unclear, for it was just a spur of the moment and just wanted to have fun. Moreover, some were influenced by their friends to instigate bullying towards their classmates, schoolmates, and peers.

Another emerging theme was to get even. The bullying experience made them seek vengeance to get even with the person who bullied them first. The last emerging theme was after being pissed off. Bullying was instigated after being pissed off by the bullies. They were irritated and pissed off.

According to Zapf and Gross (2001) that it was not always the perpetrators that escalated the conflict but, at times, the victims who carried out retaliatory, provocative, and threatening themselves.

Changes in Academic Life after Bullying Experiences

The emerging themes were nothing had changed and lost interest in school. The first emerging theme was that nothing had changed. They went to school even the odds they experienced due to bullying. Some of the research informants were so focused on their studies that they did not have time to think about the bullying experiences.

Another emerging theme was losing interest in school. They lost their enthusiasm to go to school. A research informant was absent for a week, and when in school, he skipped classes. He wanted to shun bullies and stop studying.

According to Gorman (2017), bullied children have lower academic achievement, a greater dislike of school, and less confidence in their academic abilities. Furthermore, students who are repeatedly bullied receive poorer grades, participate less in class discussions, and maybe mislabeled as low achievers because they are afraid of being bullied if they speak up in class.

Changes in Emotional Life after Bullying Experiences

The emerging themes were nothing had changed, losing interest in others, and no feeling of hatred. The first emerging theme was that nothing had changed. They were never discouraged in life, for they treated bullying as a joke and never took the teasing seriously. Another emerging theme was losing interest in others. They avoided the bullies and did not mind what the bullies were doing. It made them feel comfortable while they were in school.

The last emerging theme was no feeling of hatred. At first, some research informants held grudges and wanted to take revenge, but they realized that it did not do any good as time passed. They forgave the bullies and let go of their hatred.

Copeland, Wolke, and Angold (2013) provide strong evidence that being a victim of bullying or being both a victim and perpetrator is a risk factor for serious emotional problems. Often, they have low self-esteem and feel depressed, anxious, and lonely.

Changes in Personal Life after Bullying Experiences

The emerging themes were that nothing had changed, becoming vengeful, losing friends, and losing interest in school. The first emerging theme was that nothing had changed. They were not affected by the bullying experiences that they had either at home or in school. Another emerging theme was becoming vengeful. Some research informants became vindictive and wanted to take revenge for the ordeal they had received from the bullies. Some wanted to join the activities of the bullies so that they could bully other students too.

Another emerging theme was losing friends. Friendship was broken, and friends separated ways because of bullying. Lastly, some lost interest in school as bullies continued to bully them.

Long-term impacts of bullying might be challenging to recognize and relate to past bullying conduct and other factors such as anxiety or other traumatic childhood events that can also have physical ramifications in adulthood (Hager & Leadbeater, 2016).

Changes in Social Life after Bullying Experiences

The emerging themes were losing interest in others, and nothing had changed.

The first emerging theme was losing interest in others. Their aversion either they were hurt or avoiding further conflict by the bullying instigated by others.

Another emerging theme was that nothing had changed. There were no changes in the social life of the research informants after their bullying experiences.

Depression, anxiety, social isolation, and low self-esteem are common symptoms among victims (Davies, 2015). The feelings of pain that accompany peer rejection, ostracism, or loss are social pain (Vaillancourt, Hymel & McDougall, 2013).

Implication for Practice

Based on the findings, the following implications for practice are offered.

a. Schools must collaborate with parents in designing ongoing formation programs, character-building activities, and counseling sessions for children and parents.
b. Schools can design parenting programs for parents/guardians for updates, trends and issues of parenting the millennials and Generation Z.
c. Justice and Peace Education must be integrated across curriculum to develop tolerance among the members of the community.
d. Teachers must exercise prudence and consistency in enforcing positive discipline to the children guided by Republic Act 7836, Republic Act 10627, Republic Act 9262, and DepEd Order 42 series of 2012. It can be done during Learning Action Cell (LAC) sessions, Midyear Performance Review and Evaluation (MPRE), or In-Service Training (INSET).
e. Revival peer counseling groups among the secondary schools in the Division de Oro. Moreover, members of this group must be given training workshops and full support for them to perform the expected tasks.
f. Efficient and functional anti-bullying program as mandated by Republic Act 10627. Moreover, a close monitoring scheme on the interventions done to the bullies.
g. Employment of full-time Registered Guidance Counselor (RGC) to cater to the emotional and psychological needs of the growing up young men and women.
h. Strengthen Gender and Development (GAD) in schools and wholeness spirituality.
i. Conduct of personality tests or emotional quotient workshops for the students to know better their thought processes by the Guidance Office.
j. Formal training for teachers on how to deal with bullying and other related issues of the students in absence of a Registered Guidance Counselor.

Implications for Future Research

The responses of the study were limited to the students in New Albay National High School, Maragusan East District, Division of Davao de Oro, the following implications for future research are considered:

First, future research should study the effectiveness of intervention programs for the victims and perpetrators of bullying in their respective schools. Second, another research of the same focus may be conducted in another location to investigate the same phenomenon of bullying in public schools. Third, a re-interview of the same research informants may be conducted to see whether their understanding of bullying has changed over a period of time. Lastly, future research could investigate the same phenomenon in junior high schools in urban areas, both private and public. They could also do comparative research on bullying in urban and rural areas vis-à-vis private and public schools.

Concluding Remarks

The main focus of the study was the bullying experiences of the bullies in school. The implementation an anti-bullying law in the Philippines under RA 10627 did not deter the children's bullying experiences at home and in school. Teachers have the professional and moral obligation to understand and recognize bullying in all its manifestations and implications in school. Moreover, it is necessary to establish integral plans for counteracting it and therefore, each school must have a functional anti-bullying committee.

Indeed, some children are exposed to adults who bully at all levels, including home life and social interactions. Others were exposed to violent movies and television shows that have bullying embedded and frequently celebrated in action.

Compliance with Ethical Standards

In conducting this study, the author(s) adhered to strict ethical standards. Informed consent was obtained from all respondents, ensuring they were fully aware of the study's purpose and procedures. Respondents were assured of their freedom to withdraw from the study at any time without any consequences. The anonymity of all participants was rigorously maintained to protect their privacy. The well-being of the respondents was safeguarded throughout the research process. There was no conflict of interest in the conduct of this study. Plagiarism was strictly avoided, ensuring all sources and references

were properly cited. Furthermore, there was no bias in the interpretation of the findings. The results of this study are used solely for research purposes.

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CHILD PROTECTION POLICY AWARENESS AND SCHOOLS' RESPONSIVENESS: BASIS FOR AN INTERVENTION PLAN

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ABSTRACT

Child protection is essential for safeguarding children's well-being, preventing abuse, and ensuring a supportive environment for their development. This study aims to establish a nurturing school community where all individuals feel connected, safe, and supported. It investigates the respondents' characteristics, child protection policy awareness, and school responsiveness, testing significant relationships and differences among junior high school teachers in the Valencia City division. Employing a descriptive correlational research design, 400 teachers were surveyed using the universal sampling method. Data was collected through adapted, modified, and researcher-made questionnaires. Statistical tools, including means, frequencies, standard deviations, Pearson's correlation, and ANOVA, were utilized to explore the relationships between policy awareness, school responsiveness, and teacher characteristics. The study findings reveal that most respondents, primarily Teacher I, have 6-10 years of experience and have received training on child protection policy at the school level. This indicates a strong foundation for child protection in our schools. The policies have significantly contributed to safeguarding children's interests, with schools demonstrating high awareness and responsiveness in disciplinary actions. There is a relationship between child protection policy awareness and schools' responsiveness. However, significant differences in school responsiveness were observed based on teaching position, experience, and seminars and training attended on child protection policy. Therefore, it is concluded that most respondents who attended seminars and training on child protection belonged to various tribal groups. Despite holding entry-level positions, the respondents gained experience over 6-10 years and demonstrated a very high awareness of child protection policy and school responsiveness. It is recommended to bolster teacher morale, provide

training for school personnel, strengthen monitoring and evaluation mechanisms, and adopt the proposed intervention plan.

Keywords: *child protection policy, schools' responsiveness*

INTRODUCTION

The Department of Education (DepEd) recently highlighted the importance of adhering to the government's child protection policy, empowering educators and staff to take a leading role in ensuring the safety and well-being of learners. This emphasis was in response to alarming statistics revealed by Vice President and Education Secretary Sara Z. Duterte, which indicated a disturbing trend in reported cases of child abuse from 2019 to 2022. In November 2023 alone, more than 1,700 reports of child abuse both in schools and at home were received by the Department of Education, indicating a disturbing trend.

In addition, within the jurisdiction of Valencia City, there had been documented cases of bullying and child labor, totaling sixty-four (64) cases between 2019 and 2022. Within 2023 alone, Valencia reported thirty-six (36) cases of bullying and physical injury. These statistics underscore the urgent need for schools to effectively address and reduce instances of child abuse, ensuring the safety and protection of their students. While policies and protocols existed to safeguard children, the effectiveness of these measures heavily relied on the responsiveness of educational institutions in implementing them.

The study was anchored on Republic Act 7610, also known as the Child Protection Act, which provides for comprehensive protection against child abuse, violence, and discrimination. Section 1 of the act, known as the Special Protection of Children from Crime, Violence, and Discrimination Act, provides that the state may intervene when parents, guardians, or other caregivers fail to protect children from abuse and exploitation.

Moreover, the Department of Education's Child Protection Policy (CPP) is a crucial regulation designed to combat violence, prejudice, and child abuse within educational institutions. The CPP not only encourages the public to report bullying incidents to the Child Protection Committee (CPC) for appropriate action but also plays a significant role in reinforcing the safety of students, as RA 10627 further strengthens the Department of Education's current child protection regulation.

Several studies have delved into the execution of child protection policies and the levels of awareness among implementers and authorities. A study found out that that teacher had a good grasp of the Child Protection Policy program implemented by the Department of Education (Asio et al.,2020). However, the study also highlighted the potential for higher responsiveness to the program in schools. Bayucca (2020) conducted a study showing that while teachers are aware of the child protection policy, its implementation in schools is only moderate. Additionally, Segundo and Guia (2019) conclusively determined that implementing the child protection policy was moderate in public high schools. Despite

the implementation of child protection policies and related laws, the stark reality is that children continue to remain at risk (Sapul,2022). Further, Munger and Markstrom (2019) discovered that personnel in schools had insufficient awareness of residential violence, including child abuse. According to Nohilly (2019), regular training and seminars are essential to ensure teachers are equipped to protect children's rights.

Guaranteeing the safety and security of children in schools is a paramount concern for education. An essential aspect of this endeavor is understanding the extent to which schools have implemented and are responsive to child protection policies. However, the level of responsiveness may vary depending on the characteristics of the individuals involved in upholding these policies within the school system. In addition, Adewale and Potokri (2023) emphasized that child protection is a collective responsibility that needs continuous efforts for policy implementation and goal achievement. Educators play pivotal roles in upholding school rules and policies, especially those related to child protection (Hoffman, 2020). The success of each school in meeting each child's unique requirements is an essential factor that must be evaluated.

Addressing these concerns posed significant challenges for both victims and educational institutions. This research aimed to establish a foundation for implementing effective school interventions aligned with child protection principles (Brown, 2022). It provides education authorities and policymakers with valuable insights to enhance the effectiveness of child safeguarding measures. The findings will help refine policies and implement more responsive and equitable approaches to protecting the rights and well-being of all learners.

Research Questions

The study aimed to determine the level of child protection policy awareness and schools' responsiveness in the Division of Valencia City for the School Year 2023-2024. The results served as the basis for an intervention plan. Specifically, the study sought to answer the following questions:

1. How are the respondents characterized in terms of teaching position, teaching experience, seminars and training attended on child protection policy, tribal affiliation, and attitude towards child protection policy?
2. What is the level of child protection policy awareness in terms of the establishment of a child protection policy committee, capacity building of school personnel, procedures in handling and management of cases, investigation and reporting, referral and assessment?
3. What is the level of schools' responsiveness in terms of disciplinary actions, stakeholders' involvement, support services, and monitoring and evaluation?
4. Is there a significant relationship between the child protection policy awareness and school responsiveness?
5. Is there a significant difference in the schools' responsiveness to child protection policy when grouped according to the respondents' characteristics?
6. Based on the study's findings, what intervention plan on child protection policy

can be designed?

Hypothesis

Problems 1, 2, 3, and 6 were hypotheses – free. Based on Problems 4 and 5, the null hypotheses were tested at a 0.05 level of significance:

Ho1: There is no significant relationship between the child protection policy and school responsiveness.
Ho2: There is no significant difference in the schools' responsiveness on child protection policy when grouped according to respondents' characteristics?

METHODOLOGY

Research Design

This research employed a descriptive-correlational research method to gather data. The descriptive method was used to describe a particular characteristic of the junior high school teachers regarding teaching position, teaching experience, seminars/training on child protection policy, tribal affiliation, attitude towards child protection policy. Also, the level of child protection policy awareness and level of schools' responsiveness. The descriptive aspect described characteristics related to junior high school teachers and child protection policies. This method enabled the researcher to comprehensively overview teachers' awareness levels and attitudes regarding child protection policies.

Further, correlational methods were used to analyze the relationship between child protection policy awareness and school responsiveness. The study incorporated correlational methods to examine the relationship between child protection policies and school responsiveness. This approach helped determine if there was a significant relationship between teachers' awareness of child protection policies and a significant difference in the level of responsiveness exhibited by schools in implementing the policy.

Study Setting

This research was conducted within the Schools Division of Valencia City, located in the province of Bukidnon, Region X of the Philippines. This division is renowned for its commitment to inclusivity and excellence, encapsulated in its mantra, "No Valenciano is Left Behind." This ethos underscored the division's dedication to ensuring that every student, regardless of background or circumstance, receives a quality education and support to reach their full potential.

Additionally, the Division of Valencia City emphasized the resilience and well-being of its learners, as articulated in the "TEN BELLOWS'' advocacy of the Schools Division Superintendent. These guiding principles prioritized the holistic development of students, recognizing the importance of nurturing their physical, emotional, and social well-being alongside academic achievement.

The findings of this research held significant potential to enhance school responsiveness within the Valencia City Division. By identifying strengths and areas for improvement in implementing child protection policies, the study informed targeted interventions and strategies to strengthen the division's capacity to safeguard the well-being of its students effectively. This research contributed to the MATATAG Agenda and the division's ongoing efforts to create safe, inclusive, and supportive learning environments where all students can thrive academically, socially, and emotionally.

Research Respondents

The study's participants were the four hundred (400) Junior High School teachers teaching at National High School within the Division of Valencia City for the School Year 2023-2024.

Sampling Technique

In this study, the researcher employed universal sampling as the researcher aimed to gather data from the entire population of interest, ensuring comprehensive coverage and a high degree of representation in the findings.

Research Instruments

The research questionnaire was divided into three parts to gather valuable insights into child protection policy awareness and schools' responsiveness in the Division of Valencia City.

The first part of the questionnaire dealt with the respondents' characteristics in terms of a teaching position, teaching experience, seminars, and training attended on child protection policy, tribal affiliations, and attitude towards child protection policy regarding the attitude towards the Child Protection Policy the researcher obtained approval from Dela Fuente (2021) to utilize her questionnaire, which had a reliability rating of Cronbach's alpha of 0.980.

The second part of the questionnaire was adapted and modified to assess child protection policy awareness patterned on the DepEd Order No. 40 s. 2012.

The third part of the questionnaire dealt with school responsiveness and was a researcher-made questionnaire.

Validity and Reliability of the Instrument

The child protection policy awareness questionnaire was adapted from DepEd Order No. 40 s. 2012 and modified tailored to the needs of the study, and the researchers created a questionnaire on schools' responsiveness that demonstrated excellent internal consistency, with a Cronbach's Alpha of 0.965, indicating the questionnaire had an internal consistency rating of Excellent. The questionnaires underwent thorough validity

and reliability testing last April 5 to 7, 2024, at Lumbo and Sugod Integrated Schools. They were first evaluated by three (3) experts in the field: one who was a master teacher and child protection coordinator, one who was a research specialist, and the other who was a head teacher. This expert review helped ensure that the questionnaires were well-designed and appropriate for the study's objectives.

The validation results indicated that the questionnaire statements were well-organized and addressed various aspects of the school's responsiveness to child protection policy. To improve its effectiveness, a pilot test with a small group consist of 30 respondents was recommended to ensure that participants understood the questions and found them relevant to their experiences and perspectives. This step helped identify and clarify any areas that may have needed adjustment. Further, the questionnaire demonstrated high validity, ensuring unbiased data for the investigation with an error margin of only 0-5%. It exhibited exceptional clarity, coherence, and relevance, with well-defined measurement scales and response formats. Ethical considerations were thoroughly addressed, ensuring participant confidentiality and informed consent and mitigating potential risks to participants' well-being.

Afterward, after their recommendations were considered, the research instrument was pilot tested on thirty (30) public secondary school teachers who were not part of the respondents in the Division of Valencia City. This was done to ensure coefficient reliability and that the questionnaire was simple, appropriately administered, and adequate for data collection. The responses were tallied and run by the researcher's statistician. Furthermore, the questionnaire on school responsiveness demonstrated excellent internal consistency. Disciplinary actions: 0.961; stakeholders' involvement: 0.982; support services: 0.960; and monitoring and evaluation: 0.978.

Categorization of Variables

PART I. Respondents Characteristics

Teaching Position

Master Teacher III	Teacher III
Master Teacher II	Teacher II
Master teacher I	Teacher I

Teaching Experience

21 years and above	6-10 years
16-20 years	0-5 years
11-15 years	

Seminars /Training Attended on Child Protection Policy

International/ National Level	Division Level
Regional Level	School Level
District Level	

Tribal Affiliations

Bukidnon	Matigsalug
Higaonon	Tigwahanon

Manobo	Umayamnon
Talaandig	Others (Boholano,Cebuano,Ilonggo)

System of Scoring

PART ll. Attitude towards Child Protection Policy

Scale	Range	Description	Interpretation
4	3.26 – 4.00	Strongly Agree	Very Positive
3	2.51 – 3.25	Agree	Positive
2	1.76 – 2.50	Strongly Disagree	Negative
1	1.00 –1.75	Disagree	Very Negative

PART lII. Child Protection Policy Awareness and Schools Responsiveness

Scale	Range	Description	Interpretation
4	3.26–4.00	At All Times	Very High
3	2.51–3.25	Most of the Time	High
2	1.76–2.50	Sometimes	Low
1	1.00–1.75	Never	Very Low

Data Gathering Procedure

The researcher underwent an ethics review and obtained clearance from the Dean of Graduate Studies at PHINMA Cagayan de Oro College. After approval was obtained, the researcher sought permission from the Schools Division Superintendent of the Division of Valencia City to ensure alignment with the division's policies and guidelines. The researcher submitted the necessary documents, including the research tool, permit to conduct the study, and consent form, to the Superintendent for review and approval.

Once approval was obtained, the researcher sought permission from the principal of each participating school in the Division of Valencia City to access the schools and secure cooperation. The researcher communicated the study's purpose, objectives, benefits, and ethical considerations to the school principal to facilitate data collection arrangements and ensure respectful and collaborative conduct. Data gathering involved administering questionnaires to junior high school teachers in the Valencia City Division. The researcher provided clear instructions on completing the questionnaires accurately and honestly.

Data analysis involved tallying responses to identify percentages in the survey and identifying areas or aspects related to child protection policy awareness and school responsiveness that may require immediate attention or further investigation. The researcher's commitment to prompt data analysis and identifying alarming percentages ensured that the study's findings could improve child protection policy measures and school responsiveness.

Statistical Treatment of Data

The fundamental characteristics of the data in a study were described using descriptive analysis. Simple descriptions of the sample and the measurements were provided. Frequency and percentage were used to distribute the respondents on teaching position, teaching experience, seminars and training attended on child protection policy and tribal affiliations. The weighted mean and standard deviation (SD) were used to calculate the average of attitude towards child protection policy, child protection policy awareness, and level of school responsiveness based on respondents' responses. When grouped according to respondents ' characteristics, the one-way ANOVA was used to determine the significant differences in the school's responsiveness to child protection policy. Pearson's Correlation Coefficient (Pearson r) was used to assess the relationship between child protection policy awareness and school responsiveness.

Scope and Limitations

This study focused on determining the level of child protection policy awareness and schools' responsiveness during the School Year 2023-2024 in the Valencia City Division.

It is limited to child protection policy awareness, such as the establishment of a child protection policy committee, capacity building of school personnel, procedures in handling and management of cases, investigation and reporting, referral, and assessment. The research is also limited to schools' responsiveness, disciplinary actions, stakeholders' involvement, support services, and monitoring and evaluation. Moreover, this research journey aimed to propose an intervention plan to address the child protection policy proactively and effectively.

This research involved four hundred (400) Junior High School teachers teaching within the boundaries of the Division of Valencia City. To ensure the study's representation was as comprehensive as possible, it exclusively involved teachers from large schools to mega schools in different tribal affiliations, ensuring a broad and inclusive cross-section of the teaching position in the division.

RESULTS AND DISCUSSION

Research Question 1. How are the respondents characterized in terms of teaching position, teaching experience, seminars and training attended on child protection policy, tribal affiliation, and attitude towards child protection policy?

Table 1.1 Distribution of Respondents Characteristics

Characteristics	Category	Frequency	Percentage
Teaching Position	Master Teacher 3	0	0
	Master Teacher 2	0	0
	Master Teacher 1	14	3.50

	Teacher 3	76	19.00
	Teacher 2	44	11.00
	Teacher 1	266	66.50
	Total	**400**	**100.00**
Teaching Experience	21 and above	46	11.50
	16-20 years old	34	8.50
	11-15 years old	56	14.00
	6-10 years old	162	40.50
	0-5 years old	102	25.50
	Total	**400**	**100.00**
Trainings and Seminars Attended on Child Protection Policy	International/ National	4	0.90
	Regional	28	6.60
	Division	64	15.10
	District	50	11.80
	School	276	65.40
	Total	**422**	**100.00**
Tribal Affiliation	Bukidnon	102	25.50
	Higaunon	6	1.50
	Manubo	0	0
	Matigsalog	0	0
	Tigwahanon	0	0
	Talaandig	34	8.50
	Umayamnon	0	0
	Others (Ilonggo,Cebuano, Boholano)	250	62.50
	None	8	2.00
	Total	**400**	**100.00**

Table 1.1 presents the respondents characteristics in terms of their teaching position, teaching experience, trainings and seminars attended on child protection policy, and tribal affiliation

The findings reveal that most respondents hold the position of Teacher 1, indicating an entry-level position. Most of these teachers have 6 to 10 years of experience in the field. Additionally, many respondents belong to various tribal affiliations such as Cebuano, Boholano, and Ilonggo and have participated in child protection policy trainings and seminars at the school level.

This suggests that while teachers have moderate experience, they often need comprehensive training in child protection policy, especially at international and national levels. There is also a noticeable lack of representation from specific tribal affiliations. Despite these gaps, teachers generally strongly agree with the attitude towards the child protection policy, particularly regarding safeguarding the interests of children. However, the results also indicate that relatively few respondents are in Master Teacher 1 positions, and even fewer have attended child protection policy seminars and trainings at the international and national levels. This points to potential gaps in the field's leadership development and capacity building.

Jones and Harris (2020) explored how different teacher categories affect the efficacy of child protection policies in schools. According to their study, Teacher 1, who is frequently

freshly certified or inexperienced, has less trust in implementing child protection measures than more experienced classifications such as Teacher 3 or Master Teacher. The findings suggest that child safety training should be customized to different teacher classifications, with younger teachers receiving more extensive support and resources.

Moreover, a study by Papay and Kraft (2019) emphasized that continuous professional development and opportunities for advancement are critical for maintaining an engaged and effective teaching workforce. On the other hand, Guarino et al,. (2020) explored teacher tenure patterns in urban school districts and found similar variations in experience levels among educators. The researchers propose mentorship programs in which seasoned teachers advise less experienced colleagues in child safeguarding techniques. A study by Rabina and Writes (2019) found that teachers with higher qualifications and experience better understand child protection policies.

The finding reveals that many educators may need more awareness, knowledge, and readiness to implement and comply with child protection policies and protocols within educational settings. This gap underscores the need for increased investment in and promotion of comprehensive training programs at the international or national level to ensure that all teachers are well-equipped to safeguard children effectively, following the standards mandated by the Department of Education, Save the Children in the Philippines, and UNICEF

Dela Fuente (2021) points out the importance of regular and diversified training sessions in ensuring the successful implementation of child protection measures. Teachers who attend more frequent trainings, especially at the national and regional levels, are better prepared to deal with child protection issues. Furthermore, the report emphasizes that these trainings protect learners' and educators' well-being by equipping them with the skills and knowledge needed to address child safety concerns.

Martinez and Lopez (2020) address the issue of fair access to child safety training for teachers with different tribal connections. Their findings suggest that educators from underrepresented tribes (such as Higaunon and Talaandig) may have less access to thorough training than those from more prevalent affiliations (such as Bukidnon).

Nguyen and Tran (2022) stressed the necessity of culturally sensitive training programs customized to teachers' different tribal affiliations. Their findings show that training that respects and integrates the distinct cultural settings of various tribal groups are more effective in preparing teachers to deal with child protection issues. Culturally specialized approaches considering traditional practices and social dynamics help teachers from tribes such as Bukidnon, Higaunon, and Talaandig.

Table 1.2 Distribution of Respondents Attitude towards Child Protection Policy

Indicators *The policy…*	Mean	SD	Description
safeguards the interests of the child.	3.63	0.59	Strongly Agree
safeguards the interests of the teacher.	3.24	0.88	Agree

promotes better discipline inside the classroom.	3.27	0.87	Strongly Agree
gives the teacher full authority to devise learning styles that cater to learners needs.	3.28	0.76	Strongly Agree
reinforces the authority of teachers as substitute parents for students in the class.	3.21	0.77	Agree
gives the teacher avenues to enjoy the profession.	3.13	0.84	Agree
encourages discipline inside the classroom.	3.21	0.90	Agree
gives the confidence that school is safe.	3.32	0.78	Strongly Agree
protects the teacher as the substitute parent.	3.12	0.91	Agree
gives the teacher the freedom to exercise his or her function and duty as a substitute parent.	3.12	0.87	Agree
treats the learner and the teacher equally.	3.11	0.88	Agree
motivates the teacher to be more efficient.	3.21	0.82	Agree
boosts the morale of the teachers.	3.10	0.87	Agree
strengthens the commitment of teachers.	3.20	0.81	Agree
makes the teacher proud of the profession.	3.13	0.82	Agree
Overall	**3.20**	**0.80**	**Agree**

Legend: 3.26-4.00 Strongly Agree/Very Positive 1.76-2.50 Disagree/Negative
2.51-3.25 Agree/Positive 1.00-1.75 Strongly Disagree/Very Negative

Table 1.2 presents the distribution of the respondents' attitudes towards the child protection policy with an overall mean of 3.20 (SD= 0.80), described as Agree and interpreted as Positive. This means a positive attitude towards the policy, reflecting a broad acknowledgment of its importance. However, the standard deviation of 0.80 reveals some variability in attitudes, suggesting that while many teachers support the policy, there are differences in the level of agreement, possibly due to varying levels of understanding or differing experiences with the policy's implementation. This variability highlights the need for ongoing professional development and support to ensure a uniformly high level of understanding and commitment to child protection across all teachers.

This implies a positive attitude towards the importance and necessity of child protection measures within the educational context. Educators play a crucial role in leveraging this positive attitude to reinforce policy compliance and foster a culture of safeguarding and accountability. The findings reveal that the child protection policy prioritizes the interests of the children. This indicates that it is an innate characteristic of teachers to safeguard the children and fulfill their utmost responsibility in providing a supportive and nurturing environment despite any challenges in policy implementation.

A study by Smith and Jones (2021) examined teachers' attitudes toward child protection policies and reported a significant consensus among educators. This consensus underscores the importance of these policies and strengthens the argument for their implementation

Research Question 2. What is the level of child protection policy awareness in terms of the establishment of a child protection policy committee, capacity building of school personnel, procedures in handling and management of cases, investigation and reporting, referral and assessment?

Table 2.1 Distribution of the Level of Child Protection Awareness in terms of Establishment of Child Protection Policy Committee

Indicators *The school…*	Mean	SD	Description
established a Child Protection Policy Committee composed of the chairperson, vice chairperson, and representatives.	3.42	0.77	At all Times
drafted a school protection policy with a code of conduct and a plan to ensure child protection and safety.	3.48	0.69	At all Times
ensured that the children's right to be heard is respected and upheld in all matters involving procedures affecting their welfare.	3.49	0.67	At all Times
developed and implemented a school-based referral and monitoring system.	3.40	0.67	At all Times
established a system for identifying students who may be suffering from significant harm based on any physical, emotional, or behavioral signs.	3.38	0.68	At all Times
identified, referred to, and, if appropriate, reported to the office's cases involving child abuse, exploitation, violence, discrimination, and bullying.	3.37	0.66	At all Times
monitored the implementation of positive measures and effective procedures in providing the necessary support for the child and for those who care for the child.	3.40	0.64	At all Times
coordinated closely with the Women and Child Protection Desks of the Philippine National Police (PNP), the Local Social Welfare and Development Office (LSWDO), other government agencies, and non-governmental organizations (NGOs), as may be appropriate.	3.36	0.72	At all Times
provided assistance to parents or guardians whenever necessary in securing counseling from the appropriate institutions.	3.34	0.72	At all Times
initiated information dissemination programs and organized activities for the protection of children from abuse, exploitation, violence, discrimination, bullying, or peer abuse.	3.42	0.70	At all Times
Overall	**3.40**	**0.70**	**At all Times**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 2.1 presents the distribution of the level of child protection awareness in terms of the establishment of the child protection policy committee with an overall mean of 3.40 (SD= 0.70), described as At all Times and interpreted as Very High. This means a strong commitment among educators to establishing and maintaining a child protection committee within educational institutions. It implies a proactive approach to ensuring the effective implementation of child protection measures and safeguarding the well-being of students.

This commitment among educators to establish and maintain a child protection committee within educational institutions reflects a proactive stance toward safeguarding students' well-being through structured measures. It underscores a recognition of the importance of systematic approaches to child protection, aiming to create environments where safety and welfare are prioritized. This initiative demonstrates a readiness to address potential risks and issues promptly and fosters a culture of accountability and collaboration within schools. Such proactive measures are essential for ensuring that child protection policies are established and effectively implemented to provide all students with a secure and supportive learning environment.

Research by Smith and Johnson (2021) examined the role of Child Protection Committees in schools and found that their establishment significantly improved the identification and reporting of child protection concerns. The study emphasized the

importance of clear policies and procedures, regular training for committee members, and collaboration with external agencies to ensure effective implementation. A study by Smith et al. (2021) found that school personnel often needed help to connect families with external support services, citing issues such as limited resources, unclear referral procedures, and concerns about breaching confidentiality. Johnson and Ramirez (2019) also noted that teachers who felt more confident and competent in child protection procedures were more likely to actively involve students in determining appropriate courses of action when concerns arose.

Table 2.2 Distribution of the Level of Child Protection Awareness in terms of Capacity Building of School Personnel

Indicators *The school…*	**Mean**	**SD**	**Description**
has initiated and integrated educational sessions on corporal punishment and positive discipline into the initiatives of the Parent-Teacher Associations (PTAs).	3.11	0.82	Most of the Time
has initiated capacity programs for school administrators, teachers, and non-academic personnel.	3.16	0.70	Most of the Time
has initiated setting up child-friendly mechanisms for obtaining children's views and participation in the formulation, monitoring, and assessment of school rules and policies related to student discipline.	3.27	0.67	At All Times
has initiated, encouraged, and supported the formation and initiatives of support groups among teaching and non-teaching staff and parents	3.26	0.69	At all Times
has initiated and implemented specific parenting orientation sessions with parents.	3.12	0.78	Most of the Time
has initiated and implemented school activities or events that raise awareness about children's rights, corporal punishment, and positive discipline.	3.20	0.72	Most of the Time
has initiated, encouraged, and supported student-led initiatives to raise awareness about children's rights, corporal punishment, and positive discipline.	3.19	0.71	Most of the Time
has initiated measures to ensure that positive discipline messages are integrated into the lesson itself.	3.26	0.66	At all Times
has initiated plans and requests for technical assistance or capacity-building activities from DepEd and LGU.	3.20	0.71	Most of the Time
has initiated plans for capacity-building needs, including a child's rights and child protection training module.	3.18	0.78	Most of the Time
Overall	**3.20**	**0.70**	**Most of the Time**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 2.2 presents the distribution of the level of child protection awareness in terms of capacity building of school personnel with an overall mean of 3.20 (SD=0.70), described Most of the Time and interpreted as High. It means a positive engagement with capacity-building efforts. Implementing consistent and targeted capacity-building programs can further enhance the skills and competencies of school personnel, ultimately contributing to improved educational outcomes and student success.

It implies that school personnel actively participate in and benefit from regular capacity-building activities but need more. Implementing consistent and targeted capacity-building programs enhances the skills and competencies of educators and administrators. These

initiatives create a supportive learning environment that fosters improved educational outcomes and promotes student success.

Research by Smith and Johnson (2021) explored the impact of capacity-building initiatives on school personnel and found that regular training and professional development activities significantly improved educators' skills and competencies. Similarly, a study by Brown et al. (2019) highlighted the importance of consistent and targeted capacity-building programs in enhancing teacher effectiveness.

Table 2.3 Distribution of the Level of Child Protection Awareness in terms of Procedures in Handling and Managing of Cases

Indicators ***The school procedures…***	**Mean**	**SD**	**Description**
follow proper documentation and accessibility.	3.33	0.70	At all Times
provide clear guidance on how to identify and report cases of child abuse, violence, and discrimination.	3.36	0.70	At all Times
outline the necessary steps for ensuring the safety and well-being of victims.	3.35	0.70	At all Times
ensure confidentiality and privacy of case-related information.	3.41	0.66	At all Times
define the roles and responsibilities of individuals involved in handling these cases, such as child abuse, bullying, and violence against children in school.	3.37	0.68	At all Times
promote a victim-centered and trauma-informed approach in case management.	3.26	0.70	At all Times
provide clear guidelines for conducting thorough investigations and collecting evidence.	3.27	0.69	At all Times
outline the appropriate actions to be taken in response to substantiated cases.	3.31	0.65	At all Times
include measures to support and assist victims throughout the case management process.	3.33	0.66	At all Times
review and update regularly to reflect best practices in addressing child abuse, violence, and discrimination cases.	3.27	0.71	At all Times
Overall	**3.30**	**0.69**	**At all Times**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 2.3 presents the distribution of the level of child protection awareness in terms of procedures in handling and managing of cases with an overall mean of 3.30 (SD=0.69), described as At all Times and interpreted as Very High. This means that most procedures are implemented consistently.

This implies a proactive approach by educational institutions in addressing child protection concerns and providing necessary support to victims. Consistently implementing procedures can foster a safe and supportive environment for students, promoting their well-being and ensuring appropriate responses to incidents of abuse or misconduct.

According to Smith and Johnson (2021), the effectiveness of procedures for handling and managing cases within schools emphasizes the importance of consistent implementation in promoting child safety and well-being.

Table 2.4 Distribution of the Level of Child Protection Awareness in terms of Investigation and Reporting

Indicators *As a teacher, I am aware that…*	**Mean**	**SD**	**Description**
the school conducts investigation and reporting of cases of child abuse, exploitation, violence, or discrimination expeditiously.	3.38	0.68	At all Times
school Head or the Schools Division Superintendent forwards a complaint to the Disciplining Authority within 48 hours of receipt.	3.21	0.74	Most of the Time
the Disciplining Authority issues an Order for the conduct of a fact-finding investigation within 72 hours from the submission of the complaint.	3.18	0.78	Most of the Time
the Schools Division Superintendent initiates a fact-finding investigation within the same period if the individual subject to the complaint is a non-teaching personnel	3.27	0.70	At all Times
if a complaint is not sufficient in form, the concerned School Head, Schools Division Superintendent, or Disciplining Authority informs the complainant of the requirements of a formal complaint.	3.24	0.72	Most of the Time
the Local Social Welfare and Development Officer (LSWDO) of the concerned local government unit assesses the child and provides psycho-social intervention pending investigation.	3.33	0.72	At all Times
the offender undergoes psycho-social intervention if warranted.	3.20	0.77	Most of the Time
if a prima facie case (at first look) exists based on the Investigation Report and records, a Formal Charge is issued by the Disciplining Authority.	3.21	0.74	Most of the Time
the respondent may be placed under preventive suspension for a period of 90 days if the injury or abuse committed against a child is severe enough to render the child unable to attend classes.	3.18	0.75	Most of the Time
the Revised Rules of Procedure of the Department of Education in Administrative Cases apply in all other aspects.	3.24	0.71	Most of the Time
Overall	**3.24**	**0.73**	**Most of the Time**

Legend: 2.51-3.25 Most of the Time/High; 3.26-4.00 At all Times/Very High; 1.00-1.75 Never/Very Low; 1.76-2.50 Sometimes/Low

Table 2.4 presents the distribution of the level of child protection awareness in terms of investigation and reporting with an overall mean of 3.24(SD=0.73), described Most of the Time and interpreted as Very High.

This means that most teachers are well-informed about the procedures, which is critical for ensuring timely and effective responses to such incidents. A high awareness level contributes to a proactive and vigilant school environment where child protection is prioritized. It has been a practice in the institution that the teachers' primary task is to report, not to investigate. Higher authorities, such as Division Superintendents, are responsible for investigations involving teachers and school heads.

Johnson and Martinez (2020) found that schools with higher levels of staff awareness regarding child protection procedures saw a significant reduction in the incidence of

unreported abuse cases. They emphasized the need for ongoing training and support to maintain high awareness levels among school personnel.

Table 2.5 Distribution of the Level of Child Protection Policy on Referral and Assessment

Indicators *In any cases involving child abuse and other acts of abuse, the school ….*	Mean	SD	Description
accomplishes the Intake Sheet (Annex B).	3.25	0.78	Most of the Time
talks to the victim.	3.44	0.69	At all Times
conducts parent conferences.	3.48	0.64	At all Times
conducts home visitation.	3.34	0.70	At all Times
reports to school head.	3.47	0.65	At all Times
reports to Philippine National Police	3.09	0.87	Most of the Time
reports to Local Social Welfare Development.	3.18	0.81	Most of the Time
brings the child to the hospital for medical care and medico legal.	3.23	0.81	Most of the Time
refers the case to the Child Protection Policy Committee.	3.39	0.72	At all Times
refers the case to Guidance Advocate /Counselor for counselling /coaching.	3.44	0.70	At all Times
Overall	**3.33**	**0.74**	**At all Times**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 2.5 presents distribution of the level of child protection policy on referral and assessment with an overall mean of 3.33(SD=0.74), described as At all Times and interpreted as Very High. This means that teachers are generally aware of the referral and assessment protocols in their schools, although with varying degrees of familiarity with specific actions.

It implies that teachers are knowledgeable about these processes on average. However, the variability, as shown by the standard deviation, shows differing levels of familiarity with specific actions. This reflects a solid foundational understanding and highlights areas where additional training or clarification may be needed to ensure that all teachers have a consistent and comprehensive grasp of the protocols.

A study by Lee and Kim (2021) highlighted that variability in teacher familiarity with assessment protocols often led to inconsistencies in identifying and supporting students in need. They recommended that educational institutions adopt a more structured approach to training, ensuring that all staff members receive the same level of information and practical guidance on implementing referral and assessment procedures.

Table 2.6 Summary of the Level of Child Protection Policy Awareness

Variables	Mean	SD	Interpretation
Establishment of Child Protection Policy Committee	3.40	0.70	Very High
Capacity Building of School Personnel	3.20	0.70	High
Procedures in Handling and Managing Case	3.30	0.69	Very High
Investigation and Reporting	3.24	0.73	High
Referral and Assessment	3.33	0.74	Very High
Overall	**3.29**	**0.71**	**Very High**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 2.6 summarizes data on child protection policy awareness with an overall mean of 3.29 (SD=0.71), interpreted as Very High. It means a consistently strong awareness of child protection policies across all assessed variables. Schools are likely proactive and diligent in implementing these policies, ensuring that staff are established child protection policy committee, procedures are clear and well-followed, and cases are handled effectively. This high level of awareness contributes to a safer and more secure environment for children, as school personnel are equipped with the knowledge and skills necessary to protect children from harm.

The results indicate that teachers have a very high level of awareness regarding establishing child protection policy committees but only a high level of awareness regarding capacity building for school personnel. This disparity suggests that forming committees is relatively straightforward, requiring minimal resources and primarily the participation of stakeholders. Teachers' very high awareness about establishing child protection policies ensures that children's rights to be heard and considered in matters affecting their welfare are respected and upheld.

However, the high awareness level regarding capacity building indicates room for improvement in this area. Specifically, there is a need to enhance the initiation of educational sessions on corporal punishment and positive discipline into the initiatives of parent-teacher associations. Improving capacity-building efforts will equip personnel with the necessary skills and knowledge to implement child protection policies effectively and comprehensively address issues related to child welfare. In general, while schools show a high level of awareness in establishing child protection policy committees, there is a need for more robust capacity-building efforts for school personnel. Enhancing these efforts will ensure that all aspects of child protection are adequately addressed, promoting a safer and more supportive environment for students.

According to UNICEF (2023), having a specific committee focused on child protection ensures that policies are developed, implemented, and monitored effectively. This committee typically includes trained professionals who can address various aspects of child safety, from preventive measures to responding to incidents, thereby creating a safer school environment for all children.

Research Question 3. What is the level of schools' responsiveness in terms of disciplinary actions, stakeholders' involvement, support services, and monitoring and evaluation?

Table 3.1 Distribution of the Level of Schools Responsiveness in terms of Disciplinary Actions

Indicators *The school ….*	Mean	SD	Description
maintains a clear and effective disciplinary policy that is communicated to all students and staff.	3.30	0.67	At all Times
implements a system in place for monitoring and evaluating its response to reported incidents of misconduct.	3.31	0.68	At all Times
has a comprehensive disciplinary policy that guides its response to reported incidents.	3.31	0.68	At all Times
designates a disciplinarian who is responsible for managing reported incidents	3.38	0.67	At all Times
provides training and support staff on how to recognize and respond to incidents.	3.22	0.78	Most of the Time
offers support and assistance to students and families affected by disciplinary actions.	3.26	0.74	At all Times
collaborates with external agencies, such as social services and the police, to respond to reported incidents.	3.29	0.71	At all Times
responds promptly and appropriately to reported incidents of misconduct.	3.33	0.68	At all Times
provides ongoing support to students affected by disciplinary actions.	3.34	0.65	At all Times
takes steps to prevent future incidents of misconduct by implementing appropriate policies and procedures.	3.36	0.68	At all Times
Overall	**3.31**	**0.69**	**At all Times**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 3.1 presents the distribution of the level of schools' responsiveness in terms of disciplinary actions with an overall mean of 3.31 (SD=0.69), described as At all Times interpreted as Very High. This means a consistent understanding of disciplinary measures, though some areas may benefit from improved clarity and consistency in communication and implementation

This conveys that the schools have been effective in communicating and implementing disciplinary policies, although the standard deviation points to some variability in understanding or application.

The study by Thompson and Williams (2020) found that schools with well-defined and uniformly enforced disciplinary measures experienced fewer behavioral issues and a more positive school climate. Their research highlighted the role of teacher training and clear communication in achieving this consistency.

Moreover, a study by Matos (2021) teachers seek assistance from the co-teachers whenever they do not know what to do with the learners' disruptive behavior in class. In this they can collaboratively work to help learners correct behaviors. Furthermore, she recommends that there is a need for the teachers to devote time and effort in disciplining learners who have behavioral problems such as tardiness and talkativeness.

Table 3.2 Distribution of the Level of School Responsiveness in terms of Stakeholders Involvement

Indicators *The school …*	Mean	SD	Description
evaluates the extent to which stakeholders are identified and reviewed during the development of child protection policy.	3.22	0.68	Most of the Time
facilitates the inclusion of diverse stakeholders, such as parents, guardians, teachers, learners, Local Government, and Barangay Council representatives in the engagement strategy.	3.27	0.71	All of the Times
establishes a framework for meaningful dialogue between safeguarding services and stakeholders, leading to service improvement and better outcomes for children and young people.	3.25	0.72	Most of the Time
measures the level of stakeholder satisfaction with the engagement and communication process related to the child protection policy.	3.25	0.70	Most of the Time
evaluates the extent to which stakeholders feel they can influence policy and practice changes in child protection policy.	3.28	0.72	All of the Times
implements effective feedback mechanisms for stakeholders to provide input on the child protection policy and its implementation.	3.27	0.70	All of the Times
ensures the representation of different stakeholder groups and the reach of engagement activities within the school community.	3.26	0.69	All of the Times
utilizes stakeholder consultation to build consensus on key aspects of the child protection policy and its implementation.	3.26	0.70	All of the Times
involves stakeholders in decision-making processes related to the child protection policy.	3.26	0.67	All of the Times
encourages the active involvement of service users, including children, young people, and their families, in the development and review of child protection policies.	3.26	0.71	All of the Times
Overall	**3.30**	**0.70**	**All of the Times**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 3.2 shows the distribution of the level of school responsiveness in terms of stakeholders' involvement with an overall mean of 3.30 (SD = 0.70), described as At all Times and interpreted as Very High. It means a strong commitment to comprehensive and inclusive policy development and implementation. The results reflect an effective engagement of stakeholders in the school's child protection policy. Most indicators show high levels of involvement and positive descriptions of engagement, albeit with some areas requiring slight improvements.

According to Murray and Kerr (2019), schools with high stakeholder involvement in policy development and implementation reported better outcomes regarding policy effectiveness and student well-being. They emphasized that engaging stakeholders helps create more important policies and ensures the specific needs of the school community. According to Sapul (2022), community and parental involvement remain powerful elements in maintaining the safety and security of children. Nohilly and Treacy (2020) added that a policy is an action taken by a government to direct a particular sector in a

way that will facilitate the achievement of its goals. Child protection policies are therefore targeted actions by the government to guide and protect children's lives in and out of school and to enable them to enjoy their constitutionally guaranteed rights.

Table 3.3 Distribution of the Level of School Responsiveness in terms of Support Services

Indicators *The school ….*	**Mean**	**SD**	**Description**
provides seamless communication and ongoing support to students and families.	3.20	0.73	Most of the Time
ensures a safe and nurturing learning environment for all students.	3.33	0.67	At all Times
offers one -on -one tutoring, counselling, or social skills training to students.	3.20	0.73	Most of the Time
ensures that students with specific needs have access to alternative provisions that meet their requirements.	3.24	0.69	Most of the Time
adheres to government guidance in identifying the right solutions for students with specific needs.	3.22	0.68	Most of the Time
prioritizes children's safety when implementing alternative provisions or support services.	3.35	0.68	At all Times
treats each child individually and finds the best approach for their needs.	3.33	0.67	At all Times
considers various factors when choosing alternative provisions to ensure the best possible solutions for students.	3.31	0.69	At all Times
ensures the firm implementation of the child protection policy, integrated into the practices of all school personnel to safeguard children's holistic growth and welfare.	3.31	0.66	At all Times
recognizes the relationship between teachers' awareness of the child protection policy and schools' responsiveness.	3.35	0.66	At all Times
Overall	**3.30**	**0.70**	**At all Times**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 3.3 presents the distribution of the level of school responsiveness in terms of support services with an overall mean of 3.30 (SD = 0.70), described as At all Times and interpreted as Very High. This means a strong commitment to supporting students, with some areas identified for potential enhancement.

It implies that support services for students are consistently available, reflecting a school environment that prioritizes student well-being. These support services are essential for both teachers and students. Continuous strong support may lead to positive outcomes and better implementation of policies and programs. The availability of continuous, vital support services is essential for fostering positive outcomes and facilitating the effective implementation of policies and programs. This includes support for students and teachers, who benefit from a supportive environment that enhances their ability to carry out their roles effectively. Addressing areas identified for potential enhancement can further strengthen the overall support framework, ensuring that every student receives the essential support to excel academically and emotionally.

Brown and Jones (2021) discussed the impact of comprehensive support services on student retention and engagement. They emphasized the function of schools in providing a nurturing environment that addresses learners' social, emotional, and academic needs, leading to improved outcomes.

Table 3.4 Distribution of the Level of Schools Responsiveness in terms of Monitoring and Evaluation

Indicators *The school …*	Mean	SD	Description
monitors and evaluates the implementation of child protection policy regularly.	3.27	0.67	At all Times
develops the monitoring and evaluation design and tools.	3.26	0.66	At all Times
conducts orientation sessions for teachers and staff on the tools and their responsibilities regarding monitoring and evaluation.	3.22	0.72	Most of the Time
provides comprehensive training and support services to staff on how to collect data related to child protection.	3.17	0.72	Most of the Time
provides ongoing support to students and families affected by child protection incidents and cases	3.15	0.73	Most of the Time
uses data to identify areas for improvement in its child protection policy and practices	3.21	0.67	Most of the Time
creates safe spaces for child participation	3.29	0.67	At all Times
designates officer responsible for monitoring and evaluating the effectiveness of the child protection policy.	3.28	0.70	At all Times
maintains a clear and effective system for monitoring and evaluating the child protection policy.	3.28	0.70	At all Times
implements a system for reporting and responding to child protection incidents and cases	3.24	0.70	Most of the Time
Overall	**3.20**	**0.70**	**Most of the Time**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 3.4 shows the distribution of the level of school responsiveness in terms of monitoring and evaluation with an overall mean of 3.20 (SD = 0.70), described as Most of the Time and interpreted as High. This means a solid commitment to these processes, though certain aspects like orientation sessions and training could benefit from further enhancement.

Strengthening these processes could potentially enhance overall school performance and the quality of educational initiatives, ensuring continual improvement and alignment with educational goals. Addressing these gaps is crucial to ensure that all stakeholders possess the requisite knowledge and skills to contribute to the monitoring and evaluation process effectively. The lack of support hinders students from attending classes regularly. Students affected by abuse are mainly considered at risk of dropping out. Limited resources can also impact the school's ability to support students and families adequately. Awareness of referral and assessment processes is significant in safeguarding children and families affected by incidents and cases. Teachers play a significant role in partnering with stakeholders to further enhance and assess this area.

Cervancia et al. (2019) recommended that research focus on the implementation of DepEd's child protection policies, clearly monitor the systems used in schools, and investigate the effectiveness of activities provided to teachers in public and private institutions. Bayucca (2020) also suggested reviewing the implementation of child safety guidelines and providing more detailed information to teachers.

Table 3.5 Summary of the Level of School Responsiveness

Variables	Mean	SD	Interpretation
Disciplinary Actions	3.31	0.69	Very High
Stakeholders Involvement	3.30	0.70	Very High
Support Services	3.30	0.70	Very High
Monitoring and Evaluation	3.20	0.70	High
Overall	**3.27**	**0.69**	**Very High**

Legend: 2.51-3.25 Most of the Time/High 1.00-1.75 Never/Very Low
3.26-4.00 At all Times/Very High 1.76-2.50 Sometimes/Low

Table 3.5 summarizes data on schools' responsiveness with an overall mean of 3.27(SD=0.69), interpreted as Very High. This means that the school demonstrates a strong and effective ability to address and react to various needs, challenges, and situations promptly.

This high level of responsiveness implies that the school is proactive in meeting the demands of its stakeholders, including students, parents, and staff, thereby fostering a supportive and efficient learning environment. The school will likely have well-established communication channels, effective policies, and a dedicated approach to resolving issues and swiftly implementing improvements. This positive attribute can contribute significantly to overall school effectiveness, student satisfaction, and community engagement. The data revealed that disciplinary actions are implemented at a very high level, as schools consistently designate a disciplinarian responsible for managing reported incidents. This implies that teachers can act as disciplinarians within the classroom setting, with their primary task being to discipline misbehaving learners. Disciplining students is everyone's job, as teachers serve as substitute parents.

However, the variable of monitoring and evaluation received a very low mean among the assessed areas. While teachers demonstrate high responsiveness in monitoring and evaluation, this area still requires significant improvement. Teachers already teach for six hours daily and often need more time for additional administrative tasks like monitoring and evaluation. This implies the need for an approach that includes hiring non-teaching staff to oversee monitoring and evaluation duties. Providing these staff members with comprehensive training and support services on collecting and analyzing data related to child protection policies would help address this gap.

Furthermore, monitoring and evaluation ensures that school policies and programs are regularly reviewed and assessed for effectiveness. UNESCO (2020) emphasizes the importance of continuous monitoring and evaluation in maintaining the quality of education. By conducting regular assessments, schools can pinpoint areas needing improvement and use data-driven decisions to enhance their programs and policies. This ongoing evaluation process helps schools remain responsive to the evolving needs of students and ensures that educational practices are practical and aligned with best practices. By continuously monitoring and evaluating their efforts, schools can better achieve their educational goals and support student success.

Research Question 4. Is there a significant relationship between the child protection policy and school responsiveness?

Table 4 Result of Test of the Relationship between the Level of Child Protection Policy Awareness and Schools Responsiveness

	Schools' Responsiveness				
	Disciplinary Actions	**Stakeholders Involvement**	**Support Services**	**Monitoring and Evaluation**	**Overall**
Child Protection Policy Awareness	r -value p -value interpretation	r -value p -value interpretation	r -value p -value interpretation	r -value p -value interpretation	r -value p -value interpretation
Establishment of Child Protection Policy Committee	**0.89** **0.04*** **S**	**-0.67** **0.02*** **S**	-2.58 0.06 NS	**0.94** **0.02*** **S**	**-0.355** **0.035*** **S**
Capacity Building of School Personnel	0.77 0.12 NS	**0.94** **0.01*** **S**	**-0.97** **0.03*** **S**	**0.29** **0.01*** **S**	**0.2575** **0.04*** **S**
Procedures in Handling and Management of Cases	**0.16** **0.01*** **S**	**0.58** **0.03*** **S**	**0.88** **0.03*** **S**	**-1.48** **0.01*** **S**	**0.035** **0.02*** **S**
Investigation and Reporting	**0.71** **0.02*** **S**	0.25 0.19 NS	-2.93 0.17 NS	**0.92** **0.03** **S**	-0.2625 0 .102 NS
Referral and Assessment	**-0.29** **0.02*** **S**	**0.45** **0.01*** **S**	0.92 0.08 NS	**-0.85** **0.05*** **S**	**0.0575** **0.04*** **S**

Legend: S – Significant at p<0.05 S- Not Significant

Table 4 presents the result of the test of relationship between the level of child protection policy awareness and schools' responsiveness. The result shows a significant relationship between the child protection policy and school responsiveness; therefore, the null hypothesis is rejected.

Establishing Child Protection Policy Committees shows a statistically significant relationship with several aspects of school responsiveness, including disciplinary actions, stakeholder involvement, and monitoring and evaluation. However, the availability of support services did not show a statistically significant relationship with establishing a child protection policy committee.

The significant relationship between the establishment of these committees and critical areas of school responsiveness highlights the crucial role these committees play in ensuring effective policy implementation. An established committee ensures that incidents are managed appropriately and consistently for disciplinary actions. While stakeholder involvement is significant, there are complexities in engaging stakeholders effectively, suggesting the need for improved communication and collaboration. The strong relationship with monitoring and evaluation underscores the importance of

dedicated committees in maintaining accountability and continuously improving child protection measures. However, the lack of a significant relationship with support services indicates that merely having a committee does not automatically lead to better support services for students and families, necessitating separate strategies and resources.

Research Question 5. Is there a significant difference in the schools' responsiveness on child protection policy when group according to respondents' characteristics?

Table 5 Result of the Test of Difference of School Responsiveness on Child Protection Policy when Group According to Respondents Characteristics

Respondents Characteristic	Schools' Responsiveness				
	Disciplinary Actions	**Stakeholders Involvement**	**Support Services**	**Monitoring and Evaluation**	**OVERALL**
	f- value p-value Interpretation	f- value p-value Interpretation	f- value p-value Interpretation	f- value p-value Interpretation	f- value p-value Interpretation
Teaching Position	**1.40** **0.04*** **S**	**2.56** **0.01*** **S**	**4.76** **0.03*** **S**	**2.67** **0.01*** **S**	**2.85** **0.022*** **S**
Teaching Experience	**3.89** **0.03*** **S**	0.21 0.10 NS	1.09 0.06 NS	**3.54** **0.05*** **S**	**2.18** **0.06*** **S**
Seminars /Training Attended on CPP	**2.64** **0.02*** **S**	**1.28** **0.02*** **S**	**2.45** **0.02*** **S**	**1.65** **0.03*** **S**	**2.01** **0.022*** **S**
Tribal Affiliation	0.02 0.06 NS	0.32 0.07 NS	0.87 0.18 NS	0.68 0.09 NS	0.47 0.10 NS
Attitude towards Child Protection Policy	**4.28** **0.04*** **S**	0.84 0.12 NS	0.63 0.20 NS	0.10 0.15 NS	1.46 0.12 NS

Legend: S – Significant at p<0.05 S- Not Significant

Table 5 presents the result of the test of difference of school responsiveness on child protection policy when group according to rrespondents' characteristics focusing on four aspects of responsiveness: disciplinary actions, stakeholders' involvement, support services, and monitoring and evaluation. The characteristics examined include teaching position, teaching experience, seminars/training attended on child protection policy, tribal affiliation, and attitude towards child protection policy. Results show that there is a significant difference in schools' responsiveness in child protection policy when grouped according to teaching positions, particularly in disciplinary actions stakeholders' involvement, support services and monitoring and evaluation.

Higher-level teaching positions were associated with more effective disciplinary actions and stakeholders' involvement in policy implementation, reflecting greater authority and responsibility. Teaching experience also showed a positive difference between

disciplinary actions and adherence to monitoring and evaluation, emphasizing the value of tenure in enhancing school responsiveness. Capacity building of school personnel emerged as a critical factor, underscoring its role in equipping educators with essential skills. On the other hand, tribal affiliations did not significantly impact responsiveness, suggesting that cultural backgrounds may not directly impact policy implementation. The results reveal several significant factors influencing school responsiveness to child protection policies. Firstly, teaching positions emerged as a critical determinant, showing significant differences in disciplinary actions, stakeholder involvement, support services, and monitoring and evaluation. This suggests that higher and lower-level teaching positions afford significant differences and responsibility in managing disciplinary actions, effectively involving stakeholders, allocating support services, and overseeing monitoring and evaluation processes.

Teaching experience was found to significantly impact disciplinary actions, monitoring, and evaluation. More experienced teachers appeared to handle disciplinary matters more effectively and demonstrated more vital adherence to monitoring and evaluation protocols. This underscores the importance of tenure and accumulated expertise in shaping how schools implement and enforce child protection policies. Attendance at seminars and training on child protection policy also showed a significant difference across all areas of school responsiveness. The statistically significant difference implies that ongoing professional development is crucial in equipping educators with the knowledge and skills necessary to enhance their responsiveness to child protection issues. On the other hand, while attitudes towards child protection policies positively influenced disciplinary actions, tribal affiliations did not show statistically significant differences in school responsiveness. This suggests that while personal attitudes are influential, cultural backgrounds may not directly dictate how schools respond to child protection challenges. In summary, the researcher proposed the Responsiveness Theory, which posits that regular training and seminars enhance awareness. High awareness leads to efficiency in monitoring and evaluation. This approach enables individuals to prevent and mitigate incidents related to child protection while fostering a supportive and nurturing environment for both learners and teachers. Addressing teaching roles, fostering capacity-building initiatives, and nurturing positive attitudes towards child protection policies are essential steps toward improving school responsiveness. Hence, the theory mentioned is necessary and timely in implementing the MATATAG Curriculum.

Research Question 6. Based on the study's finding of the study, what intervention plan on child protection policy can be designed?

Table 6 Matrix of Intervention Plan on Child Protection Policy

Year 1 (2024): Building Foundations							
Areas of Concern	Specific Objective	Strategies and Activities	Time Frame	Person/s Involved	Source of Fund	Estimated Budget	Expected Outputs
Attitude of the teachers	Boost teachers' morale through recognition awards, wellness programs,	Implement a recognition program and rewards system	Annually (end of school year)	Division Personnel School Heads Human	MOOE/ Donations	P30,000	Improved job satisfaction and morale among teachers

	and professional development opportunities for teachers.	Giving of Incentives, Recognition Program and Reward System		Resource Teachers			
Capacity Building of School Personnel	Conduct workshops and training sessions on Child Protection Policy for all school personnel and parents.	Conduct regular, mandatory and standardized training for all school staff.	Quarterly over the school year 2 days per quarter	School Heads Child Protection Committee Teachers	MOOE / GPTA Fund	P30,000	Increased awareness and knowledge among staff and parents; Improved implementation of policy guidelines.
Monitoring and Evaluation	Establish a mmonitoring and evaluation scheme to regularly assess policy implementation, collect data related to child protection policy.	Develop and distribute Standard Operating Procedures and monitoring and evaluation tools.	Team formation and initial training within three months;	School Heads Teachers Child Protection Committee, Administrative officers /Non-Teaching Staff	MOOE/ Donations	P30,000	Developed a Standard Operating Procedures (SOP) and scheme in collecting data related child protection incidents

Year 2 (2025) Empowerment and Collaboration							
Areas of Concern	Specific Objective	Strategies and Objectives	Time Frame	Person/s Involved	Source of Fund	Estimated Budget	Expected Outcomes
Capacity Building of School Personnel	Enhance the collaborative skills and effectiveness of school personnel and parents.	Offer specialized workshops to teachers and parents.	Quarterly over the school year (1 day every quarter)	School Heads External Child Protection Experts Teachers and Parents	MOOE /GPTA Fund	P35,000	Improved implementation of policy guidelines Enhanced Parental Skills
Monitoring and Evaluation	Utilize evaluation tools and methods to gather comprehensive insights into the policy's impact and effectiveness.	Engage stakeholders and conduct regular data collection and reporting	Ongoing evaluations bi-annually	School Heads Monitoring and Evaluation Team External Stakeholders	MOOE/ Donations	P15,000	Increased adherence to the policy's guidelines and procedures and established a supportive environment for children
Year 3 (2026) Continuous Improvement and Feedback							
Areas of Concern	Specific Objective	Strategies and Objectives	Time Frame	Person/s Involved	Source of Fund	Estimated Budget	Expected Outcomes
Monitoring and Evaluation	Maintain and improve the standardized operating procedures and monitoring and evaluation.	Hold regular feedback sessions	Ongoing evaluation s bi-annually	School Heads Monitoring and Evaluation Team External Stakeholders Teachers	MOOE/ Donations	P20,000	Updated Standardized Operating Procedures and monitoring and evaluation tools.

Conclusions

Based on the results and discussion presented, the following conclusions are drawn:

1. Teacher classifications vary widely, predominantly as Teacher 1, with most teachers having 6-10 years of experience, despite variability in their participation in child protection policy training. Teachers generally have a positive attitude towards child protection policies but express slightly less agreement on issues like equal treatment and teacher morale.
2. The highest level of child protection policy awareness pertains to the establishment of a child protection policy committee, indicating a strong commitment within schools. Their

continued presence ensures that the school community remains vigilant and responsive to child protection issues.
3. Disciplinary Actions emerged with the highest-level variables in schools' responsiveness, indicating a consistent and proactive to maintaining order and ensuring a safe environment.
4. Child Protection Policy Awareness significantly impacts disciplinary actions, stakeholder involvement, and monitoring and evaluation processes. However, the lack of significant relationships with support services suggests that the committee's presence may not directly improve child support. The capacity building of school personnel is also crucial, with training being essential but not sufficient. Procedure in handling and managing cases, investigation and reporting procedures, and referral and assessment processes are also linked to these areas. The findings suggest a need for a holistic approach to school responsiveness.
5. Respondents Characteristics significantly influence various aspects of school responsiveness, with teaching position having a significant impact on disciplinary actions, stakeholders' involvement, support services, and monitoring and evaluation, teaching experience influencing disciplinary actions and monitoring/evaluation, and attending seminars or training on child protection policy being significantly related to differences in all four areas of school responsiveness; however, tribal affiliation and attitude towards child protection policy only impacted disciplinary actions, suggesting the need for further investigation and targeted interventions to enhance overall school responsiveness, particularly in the areas of stakeholder involvement, support services, and monitoring and evaluation.

Recommendations

On the basis of the conclusions of the study, the following recommendations are hereby made:

1. The Division of Valencia City officials should offer seminars and training opportunities to teachers at regional and national levels to acquire comprehensive knowledge of child protection policies. Teachers in 1 to 3 positions and with less than 5 years of experience should be given priority. This initiative would capacitate teachers to safeguard children not only at the school level but also on a national scale. Additionally, there is a need to strengthen the career progression program to address potential leadership gaps and boost the morale of the teachers.
2. School heads should provide capacity building for school personnel in child protection policies, such as conducting regular training sessions, workshops, and seminars designed to educate teachers and staff about child protection policies and practices. Collaborating with experts in child psychology, social work, and policymakers can provide valuable insights and strategies for effectively addressing and preventing child abuse and neglect within the school environment.
3. Region X officials should design effective monitoring and evaluation tools; it is essential to prioritize the enhancement of monitoring and evaluation, particularly in the process of providing comprehensive training and support services to staff on data collection related

to child protection policies. This scheme should include methodologies for gathering accurate and relevant data, ensuring consistency and reliability in monitoring efforts.
4. The district supervisor and teachers may adopt the plan of the research and investigate factors influencing stakeholder involvement, support services, and monitoring and evaluation. This can be done through one-on-one interviews and stakeholder meetings to identify factors and implement targeted interventions to enhance performance in these domains. Further, they might as well conduct a rewards system to cultivate a supportive attitude among all stakeholders towards the child protection policy to contribute to more effective implementation.
5. The parents and stakeholders should actively engage with schools to understand and participate in discussions about school responsiveness and the characteristics of teachers involved in child protection policies. Parents need to be aware of how schools manage disciplinary actions, involve stakeholders in policy decisions, and address challenges related to child protection. Stakeholders should advocate for transparent and inclusive practices within schools, ensuring that all voices are heard and considered in policy development. Additionally, promoting open communication channels between parents, stakeholders, and school officials can foster a collaborative approach to enhancing child protection measures and overall school responsiveness
6. Administrative staff and non-teaching personnel should allocate a budget quarterly and annually specifically for the development and implementation of intervention plans. Prioritizing financial resources supporting child protection policies, programs, and plans is essential. This includes funding for training programs, workshops, and seminars to enhance awareness and capacity among school personnel. Moreover, allocating resources for monitoring and evaluation efforts ensures ongoing assessment and improvement of child protection measures. By investing adequately in these areas, administrators can effectively uphold child protection standards and create safer learning environments for all students.

Compliance with Ethical Standards

Before commencing the research, the proposal underwent an ethics review, receiving clearance from the Dean of Graduate Studies and approval from the Office of the Schools Division Superintendent in Valencia City. Respondents provided informed consent and were assured voluntary participation, anonymity, and the right to abstain from answering questions. The administration of questionnaires did not interfere with school functions, and the Division Office received a copy of the results. The Institutional Review Board (IRB) and research committee conducted a thorough evaluation to ensure the research met ethical standards, including assessments of potential risks, informed consent processes, and the protection of participants' confidentiality; only after this rigorous review did the IRB grant approval for the study to proceed. Upon study completion, all findings

were shared with the respondents, and data was securely stored, ensuring no harm to participants.

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CODE OF CONDUCT AND ETHICAL STANDARDS FOR PUBLIC OFFICIALS AND EMPLOYEES (RA6713) IN THE MUNICIPAL GOVERNMENT, PROVINCE OF RIZAL

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ABSTRACT

The purpose of this research is to assess the Municipal Government of Rizal's adherence to Republic Act 6713, often referred to as the Public Employees' Code of Conduct and Ethical Standards. The municipalities in the eastern area of Rizal were the sites of this. The permanent employees and stakeholders of the seven municipalities make up the responders. The towns of Jala-jala, Pililla, Tanay, Baras, Morong, Cardona, and Teresa are the ones that are being surveyed. 61 stakeholders and 370 regular municipal employees made up a total of 431 responses. In contrast to other typical studies that have been done in the past and have linked RA 6713 to job performance, the goal of this study is to determine the level of confidence that stakeholders have for employees in order to promote G2P (government-to-person) collaboration. The descriptive technique of research was employed in the current study. This kind of research design is used to describe a condition or phenomenon. It entails gathering information using questionnaires, interviews, surveys, and observations. Descriptive research seeks to give a precise and in-depth account of a certain group, event, or circumstance. Finding patterns, trends, and linkages in the data can be aided by it (Hassan, 2024). The research employed a self-made, properly validated instrument that comprised the respondent profile and respondent-rated items covering eight areas of RA 6713. The collected data was then subjected to statistical processing, assessment, and analysis. The study's findings showed that, of the eight categories, the employees' ratings were consistent, contrary to the stakeholders'.

Keywords: *Ethics, Trust, Stakeholders, Code of Conduct, Transparency*

INTRODUCTION

Growing incidences of indulgence of employees in unethical acts in various organizations and negative consequences associated with it for the organization such as erosion of reputation because of advanced digital media coverage, shareholder value, and others made it compulsive to study the root cause of unethical behavior at the workplace (Jha and Singh, 2021). The most generally accepted concept of Ethics is that culture is a key determinant of an individual's ethical ideology (Onder, et al, 2020) To be an ethical person is simply to know what is right and wrong. Ethics are often explained by the Golden Rule, which says, "Do unto others as you would have them do unto you." But morality and ethics are two different concepts. According to Wheeler's paper, "individual value choices are the key to implementing an organizational culture that does not tolerate unethical behavior." Furthermore, the collection of rules that professionals in a certain sector must adhere to is known as the ethical standard or code of ethics in that profession.

It seems like more businesses are making an effort to adopt a code of conduct and grow more accountable. The code of conduct currently establishes the parameters that businesses and governments must operate within. All levels of management and staff will be held to the standard established by the actions of the top leader. At the director level, ethical behavior must begin. The department must be dedicated to addressing ethical concerns and not be in the habit of hiding anything from the public during the decision-making process. It all boils down to good intentions. People will detect an ethical aim if it is genuine.

The creation and continuing revision of a code of ethics is part of the natural development of any profession. A code of ethics is a living document that changes as the profession grows and changes. This evolution is reflected in the successive iterations of our ethical standards, which have existed for more than fifty years (Herlihy & Corey, 2015). A code of ethics is something that naturally forms and is constantly modified in any profession. A code of ethics is a living document that changes as the field does. Over the course of more than 50 years, our ethical standards have undergone several revisions to reflect this advancement.

The current study aimed to address the concerns of the stakeholders with reference to the subscription of employees over RA 6713 to harmonize trust and encourage the former in the participation of municipal government affairs, hence yielding to a Government-to-person mutual agreement.

Ethics is more accurately the study of such societal codes and morals concerning how they impact society. In essence, ethics encompasses how moral concepts affect the larger society in which they are employed. The study of ethics is more concerned with how human interaction impacts the ability of the greater society to function. While

many ethical actions are also considered moral in most cultures, it is possible to have an ethical action that is immoral or an amoral action that is unethical, depending on how a specific culture defines its moral code. Moral judgments are often based on adherence to pre-defined codes of conduct, whereas ethical judgments are based on determining how a course of action may impact things and the people around them. Thus, the trust of the people heightened if civil servants performed their tasks without reservations, favoritism, and impartiality. Therefore, ethics are the set of guidelines that specify how public servants should behave to guarantee that the public is treated fairly and equally. Ethics assist public servants in making better decisions that serve the public interest and assist the public in assessing the decisions made by public servants on their behalf.

The nation has the strictest ethical standards in the world, as required by RA 6713 (Code of Conduct and Ethical Standards for Public Officials and Employees),

and has the highest ethical requirements in the nation. In terms of dedication to the public interest, professionalism, fairness and sincerity, political neutrality, public responsiveness, nationalism, patriotism, dedication to democracy, and simple living, the current study evaluated the degree of work ethics practiced by government employees. (https://www.ombudsman.gov.ph/docs/republicacts/Republic_Act_No_6713).

Ordinarily, elections are held on the second Monday of May, as required by the Philippine Constitution. This is regarded as a forum for citizens to engage in government affairs; therefore, if the municipal government and interested parties mutually agree, there may be additional involvement for stakeholders beyond voting.

In conclusion, code of conduct and ethical standards in the government are essential for maintaining public trust, ensuring transparency, and promoting accountability. They serve as the foundation for good governance, guiding officials in making decisions that prioritize the public interest over personal gain. High ethical standards help prevent corruption, foster a culture of integrity, and enhance the credibility of governmental institutions. Ultimately, adherence to ethical principles is crucial for the effective functioning of democracy, as it ensures that the actions of government officials align with the values and expectations of the society they serve. Therefore, to address problems encountered by both groups of respondents an action plan thereby proposed.

Research Questions

The current study aimed to assess how the ethical standard is being subscribed by every employee in the local government unit in the Eastern Province of Rizal. Specifically, it attempts to answer the following questions:

1. What is the profile of the respondents in terms of:
   1.1 municipality
   1.2 sex
   1.3 age

1.4 educational attainment
1.5 length of service (for employees)

2. How do RA 6713 subscribe by the municipal employees in the province of Rizal as perceived by the respondents with respect to:
   2.1 commitment to public interest
   2.2 professionalism
   2.3 justness and sincerity
   2.4 political neutrality
   2.5 responsiveness
   2.6 nationalism and patriotism
   2.7 commitment to democracy; and
   2.8 simple living
3. Is there a significant difference in the subscription of RA 6713 as assessed by the respondents with respect to the cited variables in terms of their profile?
4. What may be the problems encountered by the respondents in the implementation of RA 6713?
5. What solutions may be proposed based on the problems encountered?
6. What plan of action may be designed to strengthen the implementation of RA 6713 in the municipalities of the 2nd district of Rizal?

METHODOLOGY

To give justification on how the conduct of this study materialized, this chapter presents the method of research, population, sampling technique, description of the respondents, instrumentation, procedures in data-gathering, and statistical treatment that will be used.

Method of Research

The researcher utilized the descriptive method of research by using a three-part survey questionnaire that assessed the implementation of a code of ethical standards for public employees in the Province of Rizal.

The descriptive method research approach is used to describe systematically and accurately the facts and characteristics of a given population or area of interest. Hence, it is significant in the current conduct of the study.

Population, Sample Size, and Sampling Technique

To draw a reliable response, this study involved the permanent employees in the seven (7) municipalities in eastern Rizal that is, Tanay, Pililla and Jalajala, Baras, Morong, Cardona, and Teresa. the other group of respondents was chosen through convenient sampling. Of the total number of permanent employees in the municipalities in Eastern Rizal consisting of Eight Hundred Twenty-One (821), there were Three Hundred Seventy responded. For the other group of respondents who were chosen through convenient sampling, sixty-one (61) answered.

Description of Respondents

The respondents utilized in this study were the 370 permanent employees of the municipalities in the eastern part of Rizal and 61 stakeholders, they were described based on their demographic profile that includes municipality-were majority of the are residents of Tanay, sex-were majority are female, age whose highest frequency were those ages 46-50, highest educational attainment-were college graduate outnumbered other levels, and length of service for the employees-on which 5 years and below is the highest.

Municipality	Total Number of Permanent Employees	Actual Number of Employee-Respondents	Total Number of Stakeholder-Respondents
Baras	71	24	8
Cardona	78	72	5
Jala-jala	72	58	10
Morong	113	37	5
Pililla	156	61	14
Tanay	218	86	12
Teresa	113	29	7
No Answer		3	
TOTAL		370	61

Research Instrument

The researcher utilized a self-made instrument that was subjected to content validation. The instrument consists of two parts, the first part includes the demographic profile of the respondents, and the second part consists of a questionnaire divided into eight (8) areas- namely Commitment to Public Interest; Professionalism; Justness and Sincerity; Political Neutrality; Responsiveness to the Public; Nationalism and Patriotism; Commitment to Democracy; and Simple Living. The instrument consists of five items per area and will be rated using a 5-point Likert scale as follows:

Range		Verbal Interpretation
5	-	Very Much Subscribe
4	-	Much Subscribe
3	-	Less Subscribe
2	-	Least Subscribe
1	-	Never Subscribe

Data-gathering Procedure

To arrive at a precise response, the researcher sought approval through a letter to the seven municipalities addressed to the Municipal Mayors through their respective Human Resource Management Officers for their employees to be permitted to participate in the study.

The instrument was distributed to the two groups of respondents and retrieved where results were tallied, evaluated, and interpreted congruent to the statement of the problem.

In terms of retrieving responses from the employees of some municipalities, there was some hesitation in answering the instrument- as stated they are worried that once they responded, and their answers do not appear favorable to the administration, they may be transferred to the office they do not fit, considering that there were incumbent mayors who lost in the then just concluded elections. For the stakeholders, the limited number of respondents was due to the reason that the study was conducted during the pandemic and most of the services were transacted online or electronically, henceforth despite several attempts of going to the municipalities the least that was considered was providing Google forms to the frontline service providers of each municipality and some nearby government institutions within the area.

Statistical Treatment of the Data

To properly analyze and interpret the problems, the following statistical tools were utilized;

For Problem Number 1 and 4, Frequency and Percentage distribution were utilized to provide data on the profile of the respondents.

For Problem Number 2, Weighted Mean was used to assess the subscription of the Municipal in terms of variables.

For Problem Number 3, Analysis of Variance (ANOVA) was used to evaluate the significant difference of the respondents in terms of profile with respect to the variables.

RESULTS

This following deals with the Presentation, Analysis, and Interpretation of the results based on the gathered data of the current study.

Table 1 Profile of the Respondents in terms of Municipality

Municipality	f	%	Rank
Baras	32	7.4	7
Cardona	77	17.9	2
Jalajala	68	15.8	4
Morong	42	9.7	5
Pililla	75	17.4	3
Tanay	98	22.7	1
Teresa	36	8.4	6
No Answer	3	.7	
Total	431	100.0	

Table 1 presents the profile of the respondents in terms of Municipality. According to the number of respondents per municipality, Tanay ranked highest with 98 total respondents, or 22.7 percent, followed by Cardona with 77 total respondents, or 17.9 percent, and Baras has the least with 32 total respondents or 7.4 percent.

The results implied that majority of employees of the government are residing from the municipality of Tanay. In addition, Tanay has the largest population in the 2020 Statistical Data of Population (Atlas, 2020) among the mentioned municipalities above, reason why there are government employees employed in Tanay. Moreover, because of the big population, Tanay have the overall system and service of the government to the public.

Table 2 Profile of the Respondents in terms of Sex

Sex	f	%	Rank
Male	158	36.7	2
Female	262	60.8	1
No Answer	11	2.6	
Total	431	100.0	

Table 2 presents the profile of the respondents in terms of Sex, which shows that the majority of the respondents are female with a frequency of 262 or 60.8 percent, on the other hand, males are 158 or 36.7 percent.

The results indicate that there are more female government employees in the municipality of Tanay. The result also implied that there is a share and equal amount of women in government employment which is an implication of openness and fairness in public sector (OECD, 2013).

Table 3 Profile of the Respondents in terms of Age

Age	f	%	Rank
25 years old and below	49	11.4	5
26-30 years old	52	12.1	4
31-35 years old	46	10.7	7
36-40 years old	31	7.2	8
41-45 years old	47	10.9	6
46-50 years old	65	15.1	1
51-55 years old	55	12.8	3
56 years old and above	62	14.4	2
No Answer	24	5.6	9
Total	431	100.0	

As presented in Table, it was revealed that in terms of age, the majority of the respondents belong to the age bracket of 46-50 years old followed by those ages 56 years old and above, while those who belong to the age bracket of 36-40 got the least.

The results implied that majority of government employees in Tanay are middle aged. There are more middle aged employees because of several reasons, one is that in the public sector government jobs are in occupations requiring specialized training, education or job skills compared to private sector (OECD, 2017).

Table 4 Profile of the Respondents in terms of Highest Educational Attainment

Highest Educational Attainment	f	%	Rank
High School Level	2	.5	10
High School Graduate	9	2.1	4.5
College Level	34	7.9	2
College Graduate	295	68.4	1
Masteral Level	5	1.2	7.5
Masters Graduate	23	5.3	3
Vocational	9	2.1	4.5
Doctoral Degree	6	1.4	6
Senior High School Graduate	5	1.2	7.5
Post Graduate	4	.9	9
With Units in Doctorate	1	.2	11
No Answer	38	8.8	
Total	431	100.0	

Table 4 provides the number of respondents in terms of educational attainment and discloses that college graduate has the most number of 295 or 68.4 percent, followed by those who gained college-level with a frequency of 34 or 7.9 percent, and those with units in Doctorate has the least number of 1 or .2 percent.

The results implied that government employees have finished and obtained a Bachelor's Degree which is obvious and understandable because it it the minimum requirement in applying in public sector. According to RULE VIII "QUALIFICATION STANDARD" Part I. General Policies Sec. 31. The qualification standards are the minimum and basic requirements for positions in the government in terms of education, training, experience, Civil Service eligibility, physical fitness and other qualities required for successful performance of the duties of the position. These shall serve as the basic guide in the selection of the employees and in the evaluation of appointments to all positions in the government (CSC, 2017 Omnibus Rules on Appointments and Other Human Resource Actions). With above mentioned qualifications, having a degree is essential most especially in the government.

Table 5 Profile of the Employees in terms of Length of Service

Length of Service (Employees)	f	%	Rank
5 years and below	103	27.8	1
6-10 years	59	15.9	3
11-15 years	54	14.6	4
16-20 years	43	11.6	6
21 years and above	62	16.8	2
No Answer	49	13.2	5
Total	370	100.0	

Table 5 presents the profile of the respondents in terms of length of service. It was revealed that those who have been connected in the municipality within the last five years have the highest number with a frequency of 103 or 27.8 percent, on the contrary employees who have been serving the municipality for 16-20 years with a frequency of 43 or 11.6 percent were the least.

The results implied that majority of the employees are considered as Casual employees with less or five (5) years of government service (Republic Act no. 6656 - an Act to Protect the Security of Tenure of Civil Service Officers and employees in the implementation of Government Reorganization - Supreme Court E-Library). In addition, length of service is important for the government because it can indicate the quality of an employee. It shows that an employee has been successfully working in the organization for a long period of time and may have developed specific skillsets or knowledge about their role, resulting to a more functional service to the public (Jarvis, 2023).

Table 6 Profile of the Respondents in terms of Category

Category	f	%	Rank
Employee	370	85.8	1
Stakeholder	61	14.2	2
Total	431	100.0	

Table 6 presents the profile of the respondents in terms of category where it depicts that the majority are employees with a frequency of 370 or 85.8 percent while stakeholders got a frequency of 61 or 14.2 percent.

The results indicate that there are more government employees than stakeholder in the government in Eastern part of Rizal province. Government employees are more valuable than ever because they genuinely want a process like this to succeed and have the knowledge and enthusiasm to make sure it does. Band-aid solutions, such as wage freezing, may win popular favor temporarily, but they have a number of unanticipated long-term effects (such as diverting the best and the brightest to the private sector) (December, 2010)

Table 7 Subscription on the RA6713 by the Municipal Employees in the Province of Rizal as Perceived by the Two Groups of Respondents with respect to Commitment to Public Interest

Commitment to Public Interest	Employee		Stakeholder		Overall	
	Mean	VI	Mean	VI	Mean	VI
Practices free exchange of information and ideas regarding policies and implementations of the municipality	4.51	VM	4.16	M	4.46	VMS
Attends to concerns of clients as prescribed by ARTA (anti-red tape act)	4.47	VM	4.07	M	4.41	VMS
Upholds public interest over and above personal interest.	4.66	VM	4.16	M	4.59	VMS
Perform duties even during times of calamities.	4.64	VM	4.36	VM	4.60	VMS
Provides honest information that concern Public interest	4.76	VM	4.31	VM	4.69	VMS
Average	**4.60**	**VM**	**4.21**	**VM**	**4.55**	**VMS**

Legend: VM- Very Much M-Much

In terms of Commitment to Public Interest, despite that Stakeholders do not have the same rating as that of the employees in items 1-3, the overall verbal interpretation is Very Much.

The results indicates that employees are more committed to served the publics interest's, however, stakeholders are also commit to public interest especially in responding and performing during calamities.

According to the study of M Lennon, the 'public interest' has long been used as a concept to justify planning activity, hence expectations from the client or sector should be given optimal consideration, further, it was given highlights the importance of acknowledging how identifying the public interest demands situated ethical judgment (Lennon, 2016).

Table 8 Subscription on the RA6713 by the Municipal Employees in the Province of Rizal as Perceived by the Two Groups of Respondents with respect to Professionalism

	Employee		**Stakeholder**		**Overall**	
Professionalism	**Mean**	**VI**	**Mean**	**VI**	**Mean**	**VI**
Observes official time religiously.	4.64	VM	4.16	M	4.57	VMS
Performs duties and functions with highest degree of excellence	4.73	VM	4.18	M	4.65	VMS
Discourage favors prior to performance of services	4.52	VM	4.00	M	4.44	VMS
Choose appropriate words when dealing to clients	4.80	VM	4.25	VM	4.73	VMS
Observes loyalty in the organization and supports the co-workers	4.75	VM	4.20	VM	4.67	VMS
Average	**4.69**	**VM**	**4.16**	**M**	**4.61**	**VMS**

Table 8 shows that in terms of Professionalism, both groups or respondents have the same assessment with a verbal interpretation of Very Much. However, some areas of Stakeholder have a verbal interpretation of Much which is lower than employee respondents. The results implied that both respondents present professionalism at work and in public service.

As mentioned in the study of Lorilla, it was found that most of the clients experienced the cessation of working hours during lunch break, which they found to be inappropriate since the government issued a "no noon-break" policy in all government offices and agencies. A number of respondents also experienced that the absence of a special lane for persons with disabilities (PWDs) is apparent in most of the offices in the municipal hall.

Furthermore, a significant number of respondents also claimed that they find some employees discourteous or disrespectful towards the clients of the said office, which they are quite aware, that in violation of the law governing the ethics of government employees. Under section 4, paragraph (b) of RA 6713, it was provided that "They shall enter public service with utmost devotion and dedication to duty. They shall endeavor to discourage wrong perceptions of their roles as dispensers or peddlers of undue patronage." Be as it may, in the course of the study, every single respondent admitted that they did not report any misconduct that they experienced by diverse reasons like lack of time, the arduous process of the complaint, to name a few.

Table 9 Subscription on the RA6713 by the Municipal Employees in the Province of Rizal as Perceived by the Two Groups of Respondents with respect to Justness and Sincerity

Justness and Sincerity	Employee		Stakeholder		Overall	
	Mean	VI	Mean	VI	Mean	VI
Observe transparency in performing the job/duties	4.82	VM	4.23	VM	4.74	VMS
Avoids giving out favors to relatives whether by affinity or consanguinity	4.56	VM	3.85	M	4.46	VMS
Respect the rights of others	4.84	VM	4.33	VM	4.77	VMS
Executes impartiality in the performance of duties and responsibilities	4.75	VM	4.02	M	4.64	VMS
Accept shortcomings and rectify actions immediately to correct it.	4.73	VM	4.13	M	4.64	VMS
Average	**4.74**	**VM**	**4.11**	**M**	**4.65**	**VMS**

As revealed in Table 9, all the items were rated by the two groups of respondents as Very Much Implemented which implies that in terms of Justness and Sincerity the Municipal Employees subscribed.

To support this, the study of MJ Somers *Ethical Codes of Conduct and Organizational Context* as cited by Franco (2023) The presence of corporate codes of ethics was associated with less perceived wrongdoing in organizations, but not with an increased propensity to report observed unethical behavior. Further, organizations that adopted formal codes of ethics exhibited value orientations that went beyond financial performance to include responsibility to the commonweal. In contrast to corporate codes of ethics, professional codes of ethical conduct had no influence on perceived wrongdoing in the organization nor did these codes affect the propensity to report observed unethical activities.

Table 10 Subscription on the RA6713 by the Municipal Employees in the Province of Rizal as Perceived by the Two Groups of Respondents with respect to Political Neutrality

Political Neutrality	Employee		Stakeholder		Overall	
	Mean	VI	Mean	VI	Mean	VI
Provide services to everyone without discrimination	4.80	VM	4.18	M	4.71	VMS
Deliver services regardless of party affiliation or preference	4.75	VM	4.02	M	4.65	VMS
Avoids favoring incumbent officials of the municipality	4.56	VM	3.92	M	4.47	VMS
Avoids promotion of elected officials especially during campaign for election	4.57	VM	3.84	M	4.47	VMS
Exercises political rights without considerations to incumbent officials	4.66	VM	3.74	M	4.53	VMS
Average	**4.67**	**VM**	**3.94**	**M**	**4.57**	**VMS**

Table 10 revealed that in terms of subscription to Political Neutrality, Municipal Employees duly pledged to it.

The table presents that in terms of exercising political rights without consideration to incumbent officials, stakeholders ranked it least, which gives an impression that there are employees and/or positions in the municipality that have reference to the incumbent elected officials. Contrary to what was mentioned in the study of Ryzin, it was stated that it is often assumed that citizens evaluate government based on service quality or outcomes (such as safe neighborhoods or good schools), but aspects of administrative process (such as fairness and respect) are also important. Using data from two US surveys, this study examines how service quality and administrative processes influence citizens' evaluations of the government. Results indicate that service quality matters most to ratings of the community; in contrast, the administrative process is the dominant driver of trust; and both quality and process have large effects on judgments about government's overall job performance. Implications for public management research and practice are discussed.

Table 11 Subscription on the RA6713 by the Municipal Employees in the Province of Rizal as Perceived by the Two Groups of Respondents with respect to Responsiveness

Responsiveness	**Employee**		**Stakeholder**		**Overall**	
	Mean	**VI**	**Mean**	**VI**	**Mean**	**VI**
Extends prompt, courteous, and adequate service to the public	4.78	VM	4.28	VM	4.71	VMS
Provides correct information of the policies and procedures in clear and understandable language	4.78	VM	4.31	VM	4.71	VMS
Ensure openness of information, and public hearings whenever appropriate	4.72	VM	4.20	VM	4.64	VMS
Executes immediate actions on the concern of clients	4.75	VM	4.10	M	4.66	VMS
Gives an accurate list of requirements when requesting for documents or other concern	4.75	VM	4.20	VM	4.67	VMS
Average	**4.75**	**VM**	**4.22**	**VM**	**4.68**	**VMS**

Table 11 presents responses from both employees and stakeholders in terms of responsiveness, it was revealed that among five items it was the third that ranked the least, which is *Executes immediate actions on the concern of clients*. Relative to the study of Vigoda, research in public administration (PA) is preoccupied with questions of efficiency and effectiveness which are aimed at improving public sector performance. According to the new public management approach, addressing this prominent challenge must rely upon a comprehensive understanding of citizens'/clients' perceptions of public sector operation and the extent to which public organizations are aware of public needs.

Table 12 Subscription on the RA6713 by the Municipal Employees in the Province of Rizal as Perceived by the Two Groups of Respondents with respect to Nationalism and Patriotism

Nationalism and Patriotism	Employee		Stakeholder		Overall	
	Mean	VI	Mean	VI	Mean	VI
Attends flag raising and retreat at all times	4.74	VM	4.39	VM	4.69	VMS
Maintain loyalty to the Republic and Filipino people	4.84	VM	4.48	VM	4.79	VMS
Promote the use of locally produced goods, resources and technology and encourage appreciation and pride of country and people	4.59	VM	4.39	VM	4.57	VMS
Subscribe to unity on the development that may be proposed by the Municipality	4.74	VM	4.38	VM	4.68	VMS
Complies to the call of the government especially in of times crises, calamities, and the likes.	4.68	VM	4.39	VM	4.63	VMS
Average	**4.72**	**VM**	**4.41**	**VM**	**4.68**	**VMS**

Table 12 on the previous page presents the subscription of employees to Nationalism and Patriotism which *Maintain loyalty to the Republic and Filipino people,* ranked first to both respondents, while for the stakeholders the least is *Subscribed to unity on the development that may be proposed by the Municipality*, and for the employees, it is *Promote the use of locally produced goods, resources and technology and encourage appreciation and pride of country and people.*

On June 1, 2022, the Civil Service Commission through the Philippine Information Agency issued a “reiterated” on the observance of RA 6713, the CSC head urged government workers, as civil servants, to familiarize themselves with the 1987 Philippine Constitution, the Code of Conduct for public officials and employees, and other laws of the land.

According to the Chair, "as public servants, it is incumbent upon us to be examples of good and responsible citizenship. Further, "he urged them to provide excellent service at all times, without discrimination on the basis of age, gender, economic status, or political affiliation. “Always be mindful that our loyalty lies with the country, and that we are all accountable to our people."

Table 13 Subscription on the RA6713 by the Municipal Employees in the Province of Rizal as Perceived by the Two Groups of Respondents with respect to Commitment to Democracy

Table 13 presents the responses of the two groups of respondents with respect to Commitment to Democracy showing that in the item Votes on the scheduled national and local elections, and any other forms of exercising suffrage they have a common

thought. Elections and electoral processes are fundamental to the workings of every democratic setting of the modern state. Elections are the major hallmark of a democratic society. Recognizing this statement from the work of Igbokwe-Ibeto, it implies that in terms of subscribing to democracy both of group groups of respondents are amenable.

Commitment to Democracy	Employee		Stakeholder		Overall	
	Mean	VI	Mean	VI	Mean	VI
Commit themselves to the democratic way of life and values	4.63	VM	4.36	VM	4.59	VMS
Maintain the principles of public accountability, and manifest by deeds the supremacy of civilian authority over the military	4.63	VM	4.20	VM	4.57	VMS
Uphold the constitution and put loyalty to the country above loyalty to persons or party	4.66	VM	4.23	VM	4.60	VMS
Votes on the scheduled national and local elections and any other form of exercising suffrage	4.79	VM	4.44	VM	4.74	VMS
Supports the Sangguniang Bayan in all their programs and projects by disseminating it properly to the community	4.71	VM	4.26	VM	4.64	VMS
Average	**4.68**	**VM**	**4.30**	**VM**	**4.63**	**VMS**

Table 14 Subscription on the RA6713 by the Municipal Employees in the Province of Rizal as perceived by the Two Groups of Respondents with respect to Simple Living

Simple Living	Employee		Stakeholder		Overall	
	Mean	VI	Mean	VI	Mean	VI
Lead modest lives, including his/her family appropriate to their positions and income	4.70	VM	4.11	M	4.61	VMS
Do not indulge in extravagant or ostentatious display of wealth in any form	4.70	VM	4.02	M	4.60	VMS
Wear of uniforms and avoiding use of excessive accessories	4.69	VM	4.23	VM	4.62	VMS
Shows happiness and contentment in their life by performing their task even additional duties without being forced to	4.69	VM	4.15	M	4.61	VMS
Avoids accepting material things in return of the job performed	4.70	VM	4.15	M	4.62	VMS
Average	**4.69**	**VM**	**4.13**	**M**	**4.61**	**VMS**

As revealed by Table 14, it asserts that on the part of employees, items 1,2, and 5 have the same mean of 4.70, on the contrary for the stakeholders' item 3 got the highest rank. This implies that both groups of respondents affirm that employees exercise simple living regardless of rank or position. This empirically examines the article by Feldheim and Wang on the relationship between administrative ethics and public trust mentioned in the study of Muel Kaptein (2015). A model is developed linking the ethical behaviors of public organizations to citizen trust as perceived by managers. The model is tested with data from a survey of cities in the United States. The results show that there are higher perceptions of trust in cities where there are higher perceptions of ethical behaviors. The study indicates that an effective strategy to improve trust should emphasize honest behavior by employees, encourage employee openness, and promote organizational and individual loyalty to the public interest.

Table 15 Composite Table on the Subscription on the RA6713 by the Municipal Employees in the Province of Rizal as Perceived by the Two Groups of Respondents

	Employee		**Stakeholder**		**Overall**	
	Mean	VI	Mean	VI	Mean	VI
Commitment to Public Interest	4.60	VM	4.21	VM	4.55	VMS
Professionalism	4.69	VM	4.16	M	4.61	VMS
Justness and Sincerity	4.74	VM	4.11	M	4.65	VMS
Political Neutrality	4.67	VM	3.94	M	4.57	VMS
Responsiveness	4.75	VM	4.22	VM	4.68	VMS
Nationalism and Patriotism	4.72	VM	4.41	VM	4.68	VMS
Commitment to Democracy	4.68	VM	4.30	VM	4.63	VMS
Simple Living	4.69	VM	4.13	M	4.61	VMS
Grand Mean	**4.70**	**VM**	**4.18**	**M**	**4.62**	**VMS**

Legend: VM- Very Much M-Much

As shown in table 15, in terms of Professionalism, Justness and Sincerity, Political Neutrality, and Simple Living, the two groups of respondents answered contradictory just as how it was narrated, accordingly, Codes of ethics are being increasingly adopted in organizations worldwide, yet their effects on employee perceptions and behavior have not been thoroughly addressed. Just like a study that used a sample of management accountants drawn from the United States to study the relationship between corporate and professional codes of ethics and employee attitudes and behaviors. The presenceof corporate codes of ethics was associated with less perceived wrongdoing in organizations, but not with an increased propensity to report observed unethical behavior. Further, organizations that adopted formal codes of ethics exhibited value orientations that went beyond financial performance to include the responsibility to the commonweal. In contrast to corporate codes of ethics, professional codes of ethical conduct had no influence on perceived wrongdoing in organization nor these codes affect the propensity to report observed unethical activities.

Table 16 on the succeeding page presents the significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to public interest, professionalism, justness and sincerity, political neutrality, responsiveness, nationalism and patriotism, commitment to democracy, and simple living in terms of the municipality.

Table 16 Significant Difference in the Subscription of RA 6713 as Assessed by the Municipal Employees with respect to the Cited Variables in terms of Municipality

	SV	SS	df	MS	F	Sig.	H_O	VI
Commitment to Public Interest	Between Groups	4.585	6	.764	2.985	.007	R	S
	Within Groups	107.523	420	.256				
	Total	112.108	426					
Professionalism	Between Groups	4.688	6	.781	3.302	.003	R	S
	Within Groups	99.630	421	.237				
	Total	104.318	427					
Justness and Sincerity	Between Groups	2.788	6	.465	1.645	.133	FR	NS
	Within Groups	118.656	420	.283				
	Total	121.444	426					
Political Neutrality	Between Groups	3.832	6	.639	1.741	.110	FR	NS
	Within Groups	151.897	414	.367				
	Total	155.729	420					
Responsiveness	Between Groups	2.353	6	.392	1.573	.153	FR	NS
	Within Groups	104.711	420	.249				
	Total	107.064	426					
Nationalism and Patriotism	Between Groups	2.325	6	.388	1.922	.076	FR	NS
	Within Groups	84.705	420	.202				
	Total	87.031	426					
Commitment to Democracy	Between Groups	4.486	6	.748	2.864	.010	R	S
	Within Groups	108.599	416	.261				
	Total	113.086	422					
Simple Living	Between Groups	3.421	6	.570	1.742	.110	FR	NS
	Within Groups	137.483	420	.327				
	Total	140.904	426					

Sig. < 0.05 R S Sig. > 0.05 FR NS

It was revealed that there is a significant difference in the Practice of RA 6713 as assessed by the respondents with respect to commitment to public interest and professionalism in terms of municipality since the computed p-values of .007 and .003

respectively are less than the 0.05 level of significance, hence, the hypothesis is rejected. With respect to justness and sincerity, political neutrality, responsiveness and nationalism and patriotism, there is no significant difference since the p-values of .133, .110, .153, and .076 respectively are greater than 0.05 level of significance. Hence, the study failed to reject the null hypothesis. There is significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to democracy in terms of municipality since the p-value of .010 is less than the 0.05 level of significance. Lastly, with respect to simple living, there is no significant difference in terms of municipality since the p-value of .110 is greater than 0.05 level of significance. Hence, with respect to commitment to democracy, the null hypothesis is rejected, while with respect to simple living, the study failed to reject the hypothesis.

In conclusion of the results above, majority of the cited variables are not significant to the practice of RA 6713 as assessed by the Municipal Employees. To support this result, a study from Magtibay and Caballles (2023), the way people related to another is one of the key factors that helps to easily comply with the required job needs to be done, however as the target job failed to comply the human relations somehow affected also within the workplace. Further, better environmental practices can lead to superior quality, and to improve environmental practices, policies may be modified to shape the culture thereby leading to the superior quality of work.

Table 17 Significant Difference in the Subscription of RA 6713 as Assessed by the Municipal Employees with respect to the Cited Variables in terms of Sex

	SV	SS	df	MS	F	Sig.	H_O	VI
Commitment to Public Interest	Between Groups	2.175	1	2.175	8.287	.004	R	S
	Within Groups	109.465	417	.263				
	Total	111.640	418					
Professionalism	Between Groups	.860	1	.860	3.509	.062	FR	NS
	Within Groups	102.472	418	.245				
	Total	103.332	419					
Justness and Sincerity	Between Groups	.764	1	.764	2.661	.104	FR	NS
	Within Groups	119.795	417	.287				
	Total	120.560	418					
Political Neutrality	Between Groups	1.884	1	1.884	5.072	.025	R	S
	Within Groups	152.656	411	.371				
	Total	154.540	412					
Responsiveness	Between Groups	.217	1	.217	.852	.357	FR	NS
	Within Groups	106.362	417	.255				
	Total	106.580	418					
Nationalism and Patriotism	Between Groups	.521	1	.521	2.530	.112	FR	NS
	Within Groups	85.935	417	.206				
	Total	86.456	418					

Commitment to Democracy	Between Groups	1.352	1	1.352	5.043	.025	R	S
	Within Groups	110.478	412	.268				
	Total	111.831	413					
Simple Living	Between Groups	1.128	1	1.128	3.382	.067	FR	NS
	Within Groups	138.801	416	.334				
	Total	139.929	417					

Sig. < 0.05 R S Sig. > 0.05 FR NS

Table 17 revealed that there is a significant difference in the Practice of RA 6713 as assessed by the respondents with respect to commitment to the public interest in terms of sex since the computed p-value of .004 is less than the 0.05 level of significance, hence, the hypothesis is rejected.

With respect to professionalism, justness and sincerity, there is no significant difference since the p-values of .062 and .104 respectively are greater than 0.05 level of significance. Hence, the study failed to reject the null hypothesis. With respect to political neutrality, there is a significant difference in terms of sex since the p-value of .025 is less than the 0.05 level of significance, hence the hypothesis is rejected. There is no significant difference with respect to responsiveness and nationalism and patriotism since the p-values of .357 and .112 are greater than the 0.05 level of significance, therefore the study failed to reject the hypothesis. There is a significant difference in the Practice of RA 6713 as assed by the respondents with respect to commitment to democracy in terms of sex since the computed p-value of .025 is less than the 0.05 level of significance, hence, the hypothesis is rejected. Lastly, with respect to simple living, there is no significance since the p-values of .067 is greater than 0.05 level of significance. Hence, the study failed to reject the null hypothesis.

These result implied that majority of the variables are not connected or have a relationship with the practice of RA 6713 as assessed by the Municipal Employees. In relation with this, a study of Amit K. Nandkeolyar, 2022, it was revealed that gender discrimination in the workplace remains a significant challenge for organizations worldwide. Despite some advances in gender equality, researchers have concluded that women are still likely to earn less and lose out on promotions to higher positions compared to men. Sizeable literature supports that gender-based role incongruity and stereotypes can lead to differences in performance evaluations across occupations, job levels, and industries, including highly specialized scientific fields.

However, in some other cases, sex may influence and affects on ratings on measures of ethical decision-making, especially in the government. According to Yang et al. (2016), women rated themselves as more ethical than did men; however, this sex effect on ethical decision-making was no longer significant when social desirability response bias was controlled.

Table 18 presents the significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to public interest, professionalism, justness and sincerity, political neutrality, responsiveness, nationalism and patriotism, commitment to democracy, and simple living in terms of age.

The table revealed that there is no significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to public interest, professionalism, justness and sincerity, political neutrality, responsiveness, nationalism and patriotism, commitment to democracy, and

simple living in terms of age since the computed p-values of .421, .244, .276, .697, .162, .186, .351., and .470 respectively are greater than 0.05 level of significance. Hence, the study failed to reject the null hypothesis.

According to the study of Zaneta Balazova, 2015, Motivation can be changed significantly in dependence on meeting human needs, life situations, internal and external environment, etc. It is caused by different factors which affect motivation in different ways. These factors do not act separately but they are a part of a mutually connected network of specific relations. In the paper, it was shown the possibility of the impact of age, education, and seniority on the motivation of employees. The level of employee motivation and employee performance can be influenced by means of their detailed knowledge.

Table 18 Significant Difference in the Subscription of RA 6713 as Assessed by the Municipal Employees with respect to the Cited Variables in terms of Age

	SV	SS	Df	MS	F	Sig.	Ho	VI
Commitment to Public Interest	Between Groups	1.876	7	.268	1.014	.421	FR	NS
	Within Groups	105.201	398	.264				
	Total	107.077	405					
Professionalism	Between Groups	2.234	7	.319	1.310	.244	FR	NS
	Within Groups	97.241	399	.244				
	Total	99.475	406					
Justness and Sincerity	Between Groups	2.505	7	.358	1.246	.276	FR	NS
	Within Groups	114.293	398	.287				
	Total	116.798	405					
Political Neutrality	Between Groups	1.780	7	.254	.671	.697	FR	NS
	Within Groups	148.589	392	.379				
	Total	150.370	399					
Responsiveness	Between Groups	2.597	7	.371	1.510	.162	FR	NS
	Within Groups	97.780	398	.246				
	Total	100.377	405					
Nationalism and Patriotism	Between Groups	2.023	7	.289	1.445	.186	FR	NS
	Within Groups	79.590	398	.200				
	Total	81.612	405					
Commitment to Democracy	Between Groups	2.016	7	.288	1.118	.351	FR	NS
	Within Groups	101.234	393	.258				
	Total	103.250	400					
Simple Living	Between Groups	2.197	7	.314	.947	.470	FR	NS
	Within Groups	131.635	397	.332				

	Total	133.832	404					

Sig. < 0.05 R S Sig. > 0.05 FR NS

Table 19 on the succeeding page presents the significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to public interest, professionalism, justness and sincerity, political neutrality, responsiveness, nationalism and patriotism, commitment to democracy, and simple living in terms of highest educational attainment.

The table revealed that there is no significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to public interest, professionalism, and, justness and sincerity in terms of highest educational attainment since the computed p-values of .348, .158, and respectively are greater than 0.05 level of significance. Hence, the study failed to reject the null

hypothesis. With respect to political neutrality and responsiveness, there is a significant difference since the p-values of .011 and .003 respectively are less than 0.5 level of significance, therefore, the hypothesis is rejected. There is no significant difference in terms of nationalism and patriotism, commitment to democracy, and simple living since the computed p-values of .208, .314, and .090 respectively are greater than 0.05 level of significance. Hence the study failed to reject the hypothesis Dennis Thompson argues that such officials need to do more than oversee the paperwork associated with ethics legislation and the enforcement of specific standards and rules. They also have an "educational responsibility" in reminding public officials of their role in American democracy. Carrying out this "education in democracy" function is difficult, however, because of three paradoxes or misconceptions that plague the work of ethics officials. These include misconceptions surrounding the relative importance of ethical issues, the conflict between public and private ethical behavior, and the importance of appearances. Thompson discusses each of these paradoxes and the need to get beyond them. The major role for ethics officials, he concludes, is involvement in a continuous, positive, and visible effort to educate government employees about their democratic responsibilities.

Table 19 Significant Difference in the Subscription of RA 6713 as Assessed by the Municipal Employees with respect to the Cited Variables in terms of Highest Educational Attainment

	SV	**SS**	**df**	**MS**	**F**	**Sig.**	**Ho**	**VI**
Commitment to Public Interest	Between Groups	2.928	10	.293	1.117	.348	FR	NS
	Within Groups	99.902	381	.262				
	Total	102.830	391					
Professionalism	Between Groups	3.428	10	.343	1.445	.158	FR	NS
	Within Groups	90.605	382	.237				
	Total	94.033	392					
	Between Groups	4.879	10	.488	1.743	.070	FR	NS

Justness and Sincerity	Within Groups	106.675	381	.280				
	Total	111.554	391					
Political Neutrality	Between Groups	8.526	10	.853	2.351	.011	R	S
	Within Groups	135.987	375	.363				
	Total	144.512	385					
Responsiveness	Between Groups	6.554	10	.655	2.762	.003	R	S
	Within Groups	90.404	381	.237				
	Total	96.959	391					
Nationalism and Patriotism	Between Groups	2.581	10	.258	1.339	.208	FR	NS
	Within Groups	73.453	381	.193				
	Total	76.034	391					
Commitment to Democracy	Between Groups	3.015	10	.302	1.164	.314	FR	NS
	Within Groups	97.370	376	.259				
	Total	100.386	386					
Simple Living	Between Groups	5.468	10	.547	1.652	.090	FR	NS
	Within Groups	125.802	380	.331				
	Total	131.270	390					

Sig. < 0.05 R S Sig. > 0.05 FR NS

Table 20 presents the significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to public interest, professionalism, justness and sincerity, political neutrality, responsiveness, nationalism and patriotism, commitment to democracy, and simple living in terms of length of service.

It was shown in the table that there is no significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to public interest and professionalism in terms of length of service since the computed p-value of .644 and .243 respectively are greater than 0.05 level of significance. In terms of justness and sincerity, there is a significant difference since the p-value of .009 is less than the 0.05 level of significance. With respect to political neutrality, values responsiveness, nationalism and patriotism, commitment to democracy, and simple living in terms of length of service, there is no significant differences in the practice of RA 6713 as assessed by the respondents since the p-values of .222, .125, .481, .662, and .664 respectively are greater than 0.05 level of significance. Hence with respect to justness and sincerity, the hypothesis is rejected while with respect to commitment to public interest, professionalism, rejected political neutrality, responsiveness, nationalism and patriotism, commitment to democracy, and simple living, the study failed to reject the null hypothesis.

Table 20 Significant Difference in the Subscription of RA 6713 as Assessed by the Municipal Employees with respect to the Cited Variables in terms of Length of Service

	SV	SS	df	MS	F	Sig.	H_O	VI
Commitment to Public Interest	Between Groups	.501	4	.125	.627	.644	FR	NS
	Within Groups	62.995	315	.200				
	Total	63.496	319					
Professionalism	Between Groups	.932	4	.233	1.374	.243	FR	NS
	Within Groups	53.546	316	.169				
	Total	54.477	320					
Justness and Sincerity	Between Groups	2.291	4	.573	3.414	.009	R	S
	Within Groups	52.853	315	.168				
	Total	55.144	319					
Political Neutrality	Between Groups	1.262	4	.316	1.436	.222	FR	NS
	Within Groups	67.914	309	.220				
	Total	69.176	313					
Responsiveness	Between Groups	1.233	4	.308	1.821	.125	FR	NS
	Within Groups	53.337	315	.169				
	Total	54.570	319					
Nationalism and Patriotism	Between Groups	.597	4	.149	.871	.481	FR	NS
	Within Groups	53.969	315	.171				
	Total	54.566	319					
Commitment to Democracy	Between Groups	.519	4	.130	.601	.662	FR	NS
	Within Groups	67.151	311	.216				
	Total	67.670	315					
Simple Living	Between Groups	.539	4	.135	.598	.664	FR	NS
	Within Groups	70.743	314	.225				
	Total	71.282	318					

Sig. < 0.05 R S Sig. > 0.05 FR NS

Ethics in public administration has been a subject of growing interest for both researchers and practitioners interested in the future of governance. This study examined the relationship between ethics and performance in local governance. We tested the effects over time of an ethics program on employees' perceptions (awareness of the code of ethics, ethical leadership, inclusion of employees in ethical decision making [EDM], ethical climate [EC], organizational commitment, and quality of work life [QWL]) and behavior (organizational citizenship behavior) in one Israeli regional council. We conducted a longitudinal study of 108 employees, using data from a two-phase survey (before implementation of the ethics program and a year after) and objective assessments of employees' behavior through managers' evaluations. The main findings show that the ethics program was very effective, resulting in greater awareness of the code of ethics, increased inclusion of employees in EDM, and an improved EC. Furthermore, ethical leadership was positively related to employees' awareness of the code of ethics, increased inclusion of employees in EDM, an improvement in the EC, greater organizational commitment, and higher QWL. Implications and suggestions for future studies are discussed.

Table 21 Significant Difference in the Subscription of RA 6713 as Assessed by the Respondents with respect to the Cited Variables in terms of Category

	SV	SS	df	MS	F	Sig.	Ho	VI
Commitment to Public Interest	Between Groups	8.016	1	8.016	32.764	.000	R	S
	Within Groups	104.707	428	.245				
	Total	112.722	429					
Professionalism	Between Groups	14.856	1	14.856	71.210	.000	R	S
	Within Groups	89.497	429	.209				
	Total	104.353	430					
Justness and Sincerity	Between Groups	20.529	1	20.529	87.008	.000	R	S
	Within Groups	100.984	428	.236				
	Total	121.513	429					
Political Neutrality	Between Groups	28.038	1	28.038	92.575	.000	R	S
	Within Groups	127.812	422	.303				
	Total	155.851	423					
Responsiveness	Between Groups	15.120	1	15.120	70.235	.000	R	S
	Within Groups	92.140	428	.215				
	Total	107.260	429					
Nationalism and Patriotism	Between Groups	5.171	1	5.171	26.964	.000	R	S
	Within Groups	82.086	428	.192				
	Total	87.257	429					
Commitment to Democracy	Between Groups	7.752	1	7.752	31.107	.000	R	S
	Within Groups	105.415	423	.249				
	Total	113.167	424					
Simple Living	Between Groups	16.562	1	16.562	56.740	.000	R	S
	Within Groups	124.641	427	.292				
	Total	141.204	428					

Sig. < 0.05 R S Sig. > 0.05 FR NS

Table 21 presents the significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to public interest, professionalism, justness and sincerity, political neutrality, responsiveness, nationalism and patriotism, commitment to democracy, and simple living in terms of category.

The table revealed that there is a significant difference in the practice of RA 6713 as assessed by the respondents with respect to commitment to public interest, professionalism, justness and sincerity, political neutrality, responsiveness, nationalism and patriotism, commitment to democracy, and simple living in terms of category since the computed p-values are all .000 and are less than 0.05 level of significance. Hence, the hypothesis is rejected

In the study of Aranas, 2016, it was discussed that the Ethical conduct of public servants is reinforced by political commitment. This political commitment, difficult to benchmark, had been demonstrated by some policies and pronouncements. It is essential to the proper conduct and operation of government that public officials be

independent and impartial and that public office not be used for private gain other than the remuneration provided by law. The public interest, therefore, requires that the law protect against any conflict or interest and establish standards for the conduct of elected officials and government employees in situations where conflicts may exist.

Table 22 Problems Encountered by Employees in the Subscription to RA 6713

Problems Encountered	F	%	Rank
With the bulk of work, I am forced to leave my work station	32	8.6	9
No specific or clear checklist designed by the agency to require from our clientele for every transaction	22	5.9	10
The irregular presence of signatories causes delay on the release of requested documents	76	20.5	2
The attitude like aggressiveness of clients forced the employees to use foul language	38	10.3	8
The culture of family ties favors any relative	59	15.9	3
Favoritism resulted to low motivation and loss of job satisfaction	56	15.1	4
Undefined guidelines or policy from the top officials affects the delivery of basic services	53	14.3	5
The limited budget and with the several rules and laws causes initiated projects to become non-sustainable	83	22.4	1
Loyalty to political parties affects the support or assistance to the clientele	43	11.6	7
There are instances of not properly disseminating information due to instructions of top officials	45	12.2	6

Table 22 on discloses the problems encountered by employees in the implantation of RA 6713.

The table revealed that the highest problems encountered by employees were the limited budget and the several rules and laws causing initiated projects to become non-sustainable with a frequency of 83 or 22.4 percent while the lowest frequency of 22 or 5.9 percent belongs to the problem of no specific or clear checklist designed by the agency to require from our clients for every transaction.

As stated by Whitton (2015) these related questions have been the subject of widespread research over the past two decades. Even so, in seeking to establish ethical standards and norms of professionalism, most public sector agencies today have scarcely advanced beyond the mechanism of the traditional rule-based Code of Conduct, often based on the ‘core values’ of the institution. Such rule-based Codes of Conduct generally aim to prohibit corruption and misconduct, rather than promoting ethical conduct in the exercise of public functions. This outlines the main issues behind these concerns, looks beyond to some of the reasons why traditional methods of managing ethical problems encountered by public officials often fail, and examines how this important deficit might be remedied.

Table 23 Problems Encountered by Stakeholders in the Subscription to RA 6713

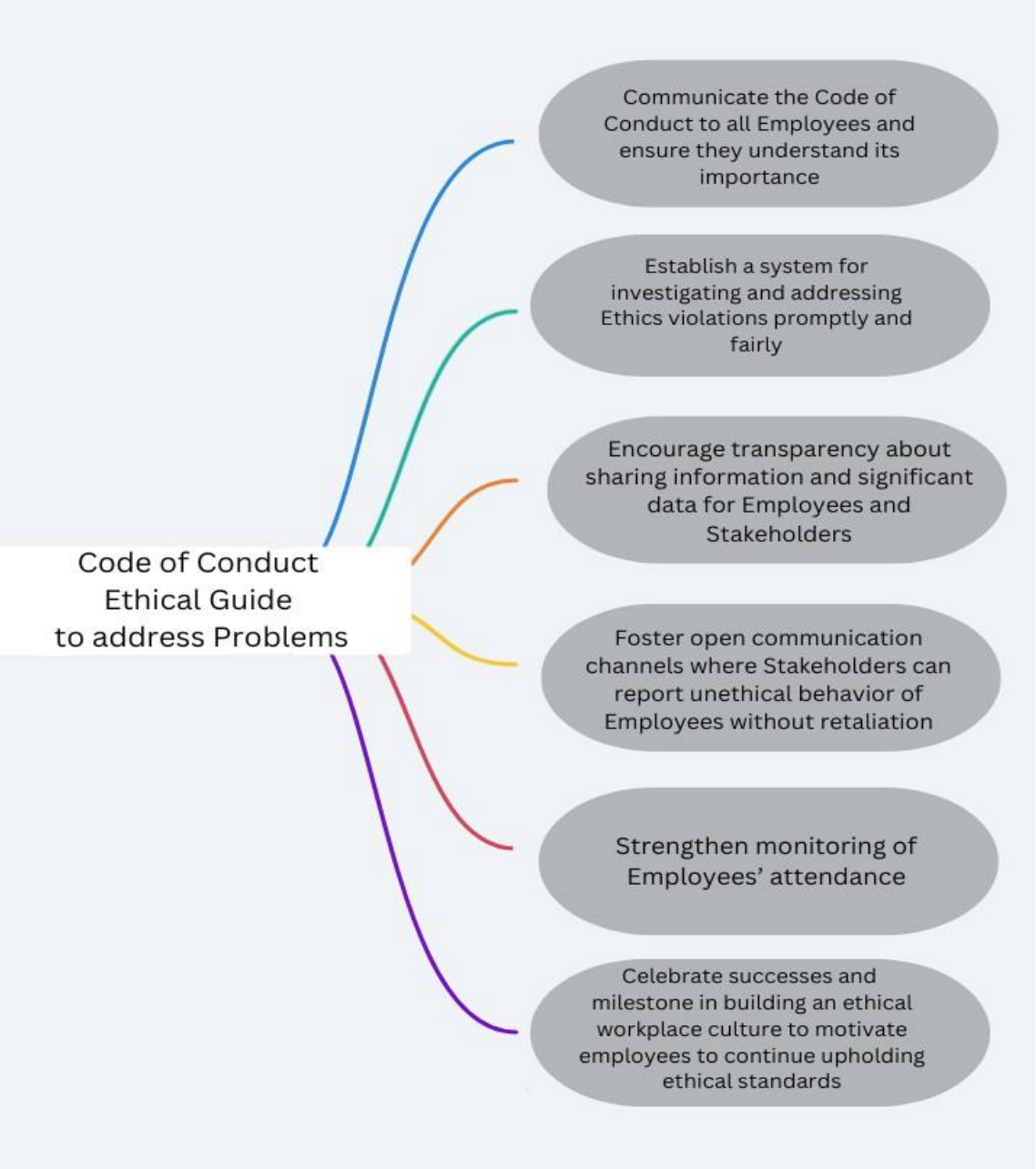
Problems Encountered	f	%	Rank
Availability of official in the assigned unit	-	-	
Inaccurate requirements prior to the requested documents	12	19.7	7
Delayed release of requested documents	33	54.1	2
Using of harsh words when dealing with clients	10	16.4	8
Favors familiarity	43	70.5	1
The official concerned is not respectable	7	11.5	9
The steps given on the procedure for requesting assistance such as basic services are not clear	18	29.5	6
Programs and projects initiated are not sustainable	24	39.3	4
Assistance given depends on political affiliation	25	41.0	3
Information dissemination on public concern is not properly executed	20	32.8	5

Table 23 presents the problems encountered by stakeholders in the implementation of RA 6713.

The table revealed that the highest problem encountered by employees was the delayed release of requested documents with a frequency of 33 or 54.1 percent while the problem of the official concerned is not respectable and has the lowest frequency of 7 or 11.5 percent.

With the enumerated problems encountered by stakeholders, Derek C Bok, 2012, lamented in his article *Can Ethics be Taught?* that it will be difficult to make headway against these problems without a determined effort by the leaders of our national institutions. Regardless of the public is scarcely optimistic over the prospects, for society's faith in its leaders has declined precipitously in recent years.

FRAMEWORK ON THE GUIDELINES TO ADDRESS PROBLEMS ENCOUNTERED BY RESPONDENTS



To guide employees in the scrutiny of subscription to RA 6713 otherwise known as the Code of Conduct and Ethical Standards for Public Officials and Employees, a framework is hereby offered.

Among the problems considered by the employees is the limited budget, followed by the irregular presence of the signatories. Addressing irregular attendance in an

organizational setting necessitates a multifaceted approach that is both proactive and empathetic

On the other side, among stakeholders, the problems they have encountered include favors familiarity and delayed release of requested documents.

Whether it's a manager promoting a protege or a leader showing one employee undue favor, favoritism can erode employee morale and compromise the integrity of the workplace, perpetuating inequality and hindering the pursuit of a truly equitable professional environment. on the other hand, postponed document disclosure may result in legal issues, erode confidence, cause operational disruptions, affect people, and impede research. For successful governance and accountability, timeliness in transparency is essential.

ACTION PLAN

Rationale:

Activity	Objectives	Timeline	Sources of Funds	Key Performance Indicator
Employee Re-orientation on RA 6713	To have employees be prompted of their duties and responsibilities and be reminded of impartiality	Annual	LGU	95-100% of Municipal Employees were re-oriented of the provisions of RA 6713
Employee involvement in Department/Unit Budget Preparation and Accountability	To maximize the budget allocated to every department/unit	Annual	LGU	Executed Budget Allocation and Budget Execution
Orientation of ARTA Revisit of OPCR/IPCR Employee Engagement	To avoid procrastination in the processing of documents	Year-round	LGU	Accurate Individual Work Accomplishment Report

In the conduct and based on the results of the current study the following activities were hereby presented to guide municipal employees- not limited to permanent employees to augment gaps in the subscription of employees and officials in the

government sector. This action plan is offered upon identification of various factors that affect ethical and unethical behaviors in organizations, including a decision-maker's social, government and legal, work, professional, and personal environments.

The study's findings, as stated in Table 21 in particular. Due to the respondents' differing claims in each of the eight categories, this recommended action plan may widen the disparities between the two groups.

Conclusions

Based on the results of the data generated, the following conclusions were hereby drawn:

1. Stakeholders have different assessments compared to the responses of the employees on the areas of RA 6713 otherwise known as the Code of Conduct and Ethical Standards for Public Officials and Employees.
2. The assessment or rating of the Stakeholders illustrates that there is a need for a re-orientation, and reminds the employees of the provisions of RA 6713, particularly in the areas of Commitment to Public Interest, Professionalism, and, Commitment to Democracy.
3. The majority of respondents who were stakeholders believed that familiarity is typically observed in the municipalities.

Recommendations

The following are the recommendations of the researcher after a comprehensive analysis of the findings and conclusion of the study:

1. A re-orientation of the provision of RA 6713 should be offered to the employees to address the areas that were observed differently by the stakeholders.
2. Since the two groups provided a different response on the four areas of RA 6713, it is recommended policies of the municipalities congruent to the Act may be revisited.
3. Fairness and equality in serving people should be of utmost observance of public officials and employees.
4. The same study may be replicated using different locale and respondents.

Compliance with Ethical Standards

In the conduct of this research authorities of the seven municipalities under survey were provided a letter of intent and approval from the Municipal Mayors through their respective Human Resource Management Officer. Further, the voluntary participation of

the respondents was solicited, moreover, compliance to RA 10173 (Data Privacy Act of 2012) was abided.

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CONVERGENCE OF GENDER AND DEVELOPMENT AND DIGITALIZATION EFFORTS IN THE PHILIPPINES: REFLECTIONS FROM THE AQUINO III TO MARCOS JR. ADMINISTRATION

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ABSTRACT

Gender mainstreaming and development efforts have long been part of the modern world's initiatives towards equality in society, and this is no different in the Philippines. The country annually devotes resources for initiatives designed to create a culture of inclusivity, equality, and opportunity for all genders. These efforts include allocating part of the annual budget for these goals and the creation of the "National Entity for Gender Equality and Women Empowerment". Likewise, the country is also expediting digitalization efforts to modernize government initiatives by improving digital connectivity through automated processes, systems, and services. Its goal is to become more responsive to emerging contexts while making government services more accessible to the public. This digitalization shall remain inclusive to all genders and will champion gender equality. At present, both goals are classified as priorities under the Marcos Jr. Administration as articulated in Philippine Development Plan (2023-2028). As such, the researchers have conducted descriptive-qualitative research; Guided by content and thematic analyses, they discussed the convergence between two equally important efforts from the Aquino III administration to the present and proposed recommendations on strengthening points for convergence.

Keywords: *Convergence, Development, Efficiency, Digitalization, Gender Mainstreaming, Transformation*

INTRODUCTION

Gender mainstreaming has been a consistent effort by countries around the world to advance gender equality. Originally introduced in 1985 during the Nairobi World Conference on Women, it was then adopted to policy in 1995 through the Beijing Platform for Action, where it was aimed at "…accelerating the implementation of the Nairobi Forward-looking Strategies for the Advancement of Women and at removing all the obstacles to women's active participation in all spheres of public and private life through a full and equal share in economic, social, cultural and political decision-making." (Fourth World Conference on Women, Beijing 1995, n.d.)

The Council of Europe of 1998 defined Gender mainstreaming as "[t]he (re)organisation, improvement, development and evaluation of policy processes, so that a gender equality perspective is incorporated in all policies at all levels and at all stages, by the actors normally involved in policy-making." (What Is Gender Mainstreaming? - Gender Equality - www.coe.int, n.d.) To put it simply, gender mainstreaming factors in the separate needs and collective wellbeing of both men and women in relation to resources, living conditions, human rights, and access to services and institutions. It requires institutional reforms as well as changes in culture, perception, and practices.

However, gender mainstreaming efforts in the Philippines began even before the term was officially coined. On January 7, 1975, then - President Ferdinand E. Marcos Sr. instituted the National Commission on the Role of Filipino Women (NCRFW) by virtue of Presidential Decree No. 633 (Aliliran, 2022). The Commission's main role was to "review, evaluate and recommend measures, including priorities to ensure the full integration of women for economic, social and cultural development at the national, regional and international levels and to ensure further equality between men and women." (Presidential Decree No. 633, 1975).

From 1975 to 1986, the NCRFW directed its efforts towards the elimination of discriminatory provisions within Philippine law. This is in line with the Convention on the Elimination of All Forms of Discrimination Against Women, which was ratified in 1981. Additionally, under the program of action set forth under the UN Decade for Women, which lasted from 1975 to 1985, the "Balikatan Sa Kaunlaran" was established. This was a "nationwide movement" that focused on "creating opportunities for expanded roles of women in economic, social and political activities of the nation." (Making Government Work for Women's Empowerment and Gender Equity, 2000). Its programs predominantly covered initiatives related to livelihood, leadership, and income generation opportunities for women throughout the country. The movement was incorporated by the NCRFW and continues to be involved in initiatives that focus on the social and economic endeavors of women today.

Moreover, it was during Marcos, Sr.'s administration when the country became the first ASEAN country to adopt the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW), also known as the International Bill of Rights of Women. It was signed on July 15, 1980, and officially ratified on August 5 of the

following year. It is identified as “an international legal instrument that requires countries to eliminate discrimination against women and girls in all areas and promotes women’s and girls’ equal rights.” (Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) for Youth, 2013).

In the years following the 1986 EDSA People Power Revolution, gender mainstreaming officially entered the landscape of Philippine politics under President Corazon C. Aquino's administration. Article II, Section 14 of the 1987 Constitution “recognizes the role of women in nation-building, and shall ensure the fundamental equality before the law of women and men.” (1987 Philippine Constitution, Article II, Section 14). During this period, equality-centric policies were adopted, including the Philippine Development Plan for Women (PDPW) from 1989 to 1992, established through Executive Order 348 (Executive Order No. 348, 1989). The PDPW focused on implementing projects and measures that addressed women's socio-economic needs, calling upon government agencies to oversee the implementation and monitoring of these initiatives.

Gender mainstreaming efforts in the Philippines continued after the PDPW's expiration in 1992 with the enactment of Executive Order 273, which served as the main avenue for the country's application of the Beijing Platform for Action. The order aimed to implement the directives outlined in President Fidel V. Ramos' Philippine Plan for Gender-Responsive Development, 1995-2025, which included the institutionalization of Gender and Development (GAD) initiatives. Like the PDPW, the Plan mandated government offices to incorporate GAD concerns in their planning, programming, and budgeting processes. (Executive Order No. 273, 1995). It also tasked the NCRFW to collaborate with the National Economic and Development Authority (NEDA) in assessing implementation efforts and making necessary adjustments to the Plan's provisions every six years. These efforts were further enhanced during former President Gloria Macapagal-Arroyo’s administration through the enactment of Republic Act. 9710, otherwise known as the “Magna Carta for Women” in 2009. (Republic Act No. 9710, 2009), which continues to be a guiding beacon for GAD initiatives of succeeding administrations.

More than two decades later, the Philippines continues to preserve and support women's socio-economic well-being through the Philippine Development Plan (PDP) 2023-2028. Drawing from the challenges posed by the COVID-19 pandemic, the administration of President Ferdinand "Bongbong" Marcos, Jr. has oriented the PDP towards strengthening social protection systems for vulnerable groups, including women and children. The plan also aims to ensure that marginalized sectors, such as women, children, indigenous peoples, and persons with disabilities, have concrete roles and significant influence in all stages of public decision-making. (National Economic Development Authority, 2023).

Furthermore, the PDP partly focuses on strengthening "social cohesion" by establishing gender-responsive intervention systems, encouraging community participation, and safeguarding the welfare of women and other vulnerable groups,

including the LGBTQIA community. It also seeks to reinforce the implementation of laws that protect women, such as the Anti-Violence Against Women and Their Children Act of 2004, Safe Spaces Act, Anti-Trafficking in Persons Act of 2003, Anti-Mail Order Spouse Act, and the Domestic Workers Act or Batas Kasambahay. (National Economic Development Authority, 2023).

Parallel to the illustrious history of gender mainstreaming efforts in the country is the pursuit of digitalization. In their book titled “Action Fields of Digital Transformation - A Review and Comparative Analysis of Digital Transformation Maturity Models and Frameworks,” Bumman and Peter (2019) consolidate and differentiate digitalization from other associated terms, such as digitization and digital transformation. To summarize, using an Input-Process-Output Model, digitization is associated with input, wherein analog data (words, speech, recordings, etc.) are converted to digital data. Digitalization (process) refers to the shift from manual processing to digital, such as online appointments and bookings. Finally, digital transformation (output) involves the mainstreaming of created online platforms and businesses into society, such as online shopping platforms, digital currency, and artificial intelligence. (Bumann & Peter, 2019).

Like GAD, the origins of digitalization efforts in the Philippines can be traced back to the Marcos Sr. administration when the National Computer Center was created through Executive Order No. 322 in 1971. Under this EO, Electronic Data Processing (EDP) was to be integrated across government agencies' operations and inform government planning, research, and engineering. (Executive Order No. 322, 1971). The NCC was later restructured seven years after its establishment by virtue of Presidential Decree 1480 of 1978.

Despite the political turmoil of that era, digitalization efforts were carried out by the Aquino administration. Article II of the 1987 Constitution emphasizes the vital role of communication and information in nation-building. (1987 Philippine Constitution, Article II, Section 24). The administration focused on rebuilding a democratic government through ICT to improve transparency, accountability, and citizen engagement.

The Ramos administration continued these efforts through emphasis on telecommunications expansion and its importance in economic development and security through Republic Act 7925, also known as the Telecommunications Policy Act of 1995 (Republic Act No. 7925, 1995). Additionally, the National Information Technology Plan for the 21st Century (IT21) was launched in 1997 under his administration, highlighting the country's shared vision and strategy in spurring global competitiveness through Information Technology (National Information Technology Plan for the 21st Century (IT21), n.d.).

Then President Joseph Ejercito “Erap” Estrada sustained the momentum of digitalization and e-government initiatives by establishing the e-Philippines Strategy Government Information Systems Plan and creating the Information Technology and Electronic Commerce Council (ITECC) by virtue of Executive Order No. 264, s. 2000. (Executive Order No. 264, 2000).

This was followed by the Philippine Strategic ICT Roadmap and the Philippine Digital Strategy created under Presidents Gloria Macapagal Arroyo and Benigno "Noynoy" Aquino III, respectively. The Arroyo administration pushed for digital inclusion and literacy, as well as the institutionalization of e-government funds and the diffusion of information and communications technology. (Gurumurthy et al., 2016).

Specifically, the Aquino administration collaborated with the National IT Industry Promotion Agency (NIPA) from South Korea to launch the Philippine e-Government Master Plan. The plan aimed to build a blueprint for future e-Government initiatives that would lead to innovation in government work processes, better public services for businesses and citizens, and the promotion of citizen participation. (National Computer Center & National IT Industry Promotion Agency, 2012).

Meanwhile, digitalization, in the context of the Duterte Administration emphasizes addressing red tape on government bureaucracy through the enactment of Republic Act 11032, otherwise known as the “Ease of Doing Business (EODB)” Law of 2018. Under said act entailed the streamlining of government systems and processes, allowing a more efficient delivery of services to the people. Moreover, this law officially amends the Republic Act 9485 or the Anti-Red Tape Act of 2007. (Republic Act No. 11032, 2018).

On January 2021, the Department of Information and Communications Technology (DICT) and the Anti-Red Tape Authority (ARTA) launched the first phase of the Central Business Portal (CBP), a platform where citizens and business owners can access forms and requirements necessary for business registration. (Crismundo, 2021).

For its part, the Marcos Jr. Administration seeks to build robust data systems to create better programs, such as targeted social protection and more efficient employment-opportunity linking systems. (National Economic Development Authority, 2023). These goals are part of the administration's 8-Point Socioeconomic Agenda, with PHP15.6 billion out of the 2023 National Budget allocated to facilitate the transformation and digitalization of the whole-of-government, aligning with the Marcos Jr. Administration's thrust for a lean, efficient, and responsive government workforce. (GAA 2023 Starting Point for Marcos Jr. Administration’s 8-Point Socioeconomic Agenda, n.d.).

Research Questions

Reflecting from reviewed literature from the Aquino III administration to the Marcos Jr. administration, the study aims to answer the question: What are the current gender mainstreaming initiatives and digitalization efforts that are being implemented by the Philippine government?

Further, through thematic analysis, the study seeks to answer the following:

1) Are there any efforts launched by the government that integrate both Gender and Development (GAD) and digitalization (whether processes or actual programs / projects)?
2) What are the strong points of previous and/or current efforts by the government?
3) What are the perceived limitations and documented gaps of said efforts?
4) What are the recommended strategies or adjustments that the Philippine government can employ to facilitate improvement both on ongoing efforts and proposed to be created and/or reinstated initiatives?

METHODOLOGY

The researchers used qualitative-descriptive research approaches. According to Bhandari (2023), Qualitative Research is “involves collecting and analyzing non-numerical data (e.g., text, video, or audio) to understand concepts, opinions, or experiences”. (Bhandari, 2023). Conversely, Descriptive Research seeks to describe accurately and systematically a population, situation or phenomenon (McCombes, 2023). The abstract is founded on the premise that GAD and digitalization efforts shall be discussed, as well as instances they converge. Hence, the above-mentioned methods were determined to be the most appropriate for this study.

Additionally, to fully understand the literature selected and establish a sound basis for findings and recommendations, the researchers primarily utilized context analysis tool. As defined, it is the “utilization of specific words, themes or concepts in some given qualitative data (texts)”. (Content Analysis Method and Examples | Columbia Public Health, 2023). Furthermore, thematic analysis was employed by the researchers for enhanced depth and brevity. As described, it is “a way of identifying patterns (themes) across a dataset which can be used for subsequent analysis”. (Braun & Clarke, 2006). Thematic analysis is effective in grouping recurring themes across different literatures while avoiding any tendencies towards confirmation biases.

It should be noted that this study will only cover major GAD and digitalization efforts implemented, currently being implemented and/or pipelined for implementation by the Philippine government. Hence, similar interventions from the private sector or non-governmental organizations will not be considered unless it is a joint effort with the government. Moreover, the convergence of GAD and digitalization efforts mentioned are only those adopted by the entire or at least the majority of the government bureaucracy. Hence, agency-specific convergence efforts will not be taken into account. Period coverage will focus on the Aquino III up to the Marcos Jr. administration. However, relevant historical antecedents about preceding administrations were occasionally cited to establish context.

RESULTS

Based on literature review conducted by the researchers, the following themes were identified with regard to the GAD and Digitalization efforts during the Aquino III to the Marcos Jr. administration as follows:

Table 1
Summary of Themes

THEME	DESCRIPTION
DIGITAL ECONOMY	Digital economy, as defined, refers to that "part of economic output derived solely or primarily from digital technologies with a business model based on digital goods or services." (Bukht & Heeks, 2017). In its simplest sense, both manufacturers and consumers in this economy utilize the internet and various electronic platforms to manage, market, and purchase goods and services. In return, this improves business efficiency through cost reduction, deviation from excessive manual labor, minimization of errors, and overall speed enhancement.
BUREAUCRATIC EFFICIENCY	As defined, Bureaucracy is the "specific form of organization defined by complexity, division of labor, permanence, professional management, hierarchical coordination and control, strict chain of command, and legal authority." (Rockman, 1998). On the other hand, efficiency is defined as the "state or quality of being efficient, or able to accomplish something with the least waste of time and effort". ("Dictionary.com | Meanings & Definitions of English Words," 2020). Hence, in the context of governance, bureaucratic efficiency can be defined as the ability of a government institution [or government at large] to operate and facilitate the delivery of its programs and services within their prescribed period and with minimal resources utilized.
CONVERGENCE	In its simplest terms, it is defined as the "act of converging and especially moving toward union or uniformity." ("Convergence," 2024). In the context of information communications technology (ICT), it is the "integration of two or more different technologies in a single device or system." (Rouse, 2023). In the context of project implementation, it can be defined as different project elements coming together to facilitate a shared outcome and/or impact. For this study, converge refers to the efforts wherein GAD and Digitalization are integrated into one geared towards different, but complementary goals.

DISCUSSION

Digital Economy

It is no secret that the internet, cloud computing, and the availability of electronic devices have been facilitating growth in the digital economy. They have revolutionized how business operates and expand its operations – creating new avenues to market products and services, as well as attracting potential clients and investors. It is posited that "Digital technologies and their attendant applications are reshaping whole domains of human activity and are spreading across the world faster than previous waves of technological innovation." (Wermelinger, 2016).

Within this ecosystem rose the gig-economy or "sharing" economy. As defined by the UK government, it "involves the exchange of labour for money between individuals or companies via digital platforms that actively facilitate matching between providers and customers, on a short-term and payment-by-task basis," (The Gig Economy: What Is It, Why Is It in the Headlines and What Does the Future Hold?, 2023). This new type of business model disrupts the traditional corporate-centered industries and instead leans toward a "peer-to-peer commercial exchange". (Sundararajan, 2016).

The Philippines is no stranger to this economy. For instance, the mobile shopping platform Shopee, which was initially launched in 2015, has more than 6 million downloads, and over 3 million active listings by over 200,000 sellers in just three (3) years' time. (Times, 2018). When the COVID-19 outbreak plagued the country in 2020, the country's unemployment rate rose to 17.7%, which is equal to approximately 7.3 million Filipinos. Hence, to cope, one of the alternative options Filipinos pursued is online selling. According to data from Rappler, over 75,000 online businesses registered during the pandemic (Rappler, 2023). Shopee, on the other hand, provided aid through the "Shopee Sellers Education Hub". This is a free online sub-platform that aimed to guide both prospective and newly registered sellers in setting up their pages, facilitating documentary requirements, and promoting their businesses among others. (Seller Education Hub, n.d.). At present, online platforms such as Lazada, GCash and Grab are other examples that continue to be utilized by Filipinos both for the flexibility, convenience and/or income opportunities they offer.

Bureaucratic Efficiency

Digitalization, in the context of the strategic thrusts of each administration, is often focused on two (2) aspects: Spurring greater economic opportunities and improving bureaucracy. These are evident within the past three administrations, from the Aquino III administration to the Marcos Jr. administration.

One of the commitments under the Aquino administration is promoting ease in doing business. As such, in October 2010, the Department of Trade and Industry (DTI) launched the electronic business name registration system (eBNRS), one of the

agency's "anti-red tape initiatives in line with the government's policy of streamlining the bureaucratic processes and curbing corruption in the frontline agencies." (Remo, 2015).

The result of this is the significant reduction of applying for a business name, with the process shortened to 15 minutes through a 1-page application form and signature. Moreover, entrepreneurs and businesses can have their DTI business name registration certificate in less than 30 minutes. (Villamejor-Mendoza et al., 2018). Two years after, the Philippine Business Registry (PBR) was launched. It integrated the eBNRS with other line agencies, such as the Bureau of Internal Revenue (BIR), Social Security System (SSS), Home Mutual Development Fund, Philippine Health Insurance Corp. (PhilHealth), and Securities and Exchange Commission (SEC) (Remo, 2015), serving as a one-stop shop for entrepreneurs and businesses. Finally, this was capped by the introduction of the electronic payment (ePayment) scheme wherein fees can be paid through mobile devices and or computer.

The same agenda was carried by his successor, former President Rodrigo R. Duterte. While the Duterte administration is often associated with its two major agenda, namely the War on Drugs and the Build, Build, Build Program, it also pursued bureaucratic efficiency through digitalization. On, 14 October 2016, then-President Duterte signed Executive Order No. 06, "Institutionalizing the 8888 Citizens' Complaint Hotline and Establishing the 8888 Citizens' Complaint Center". (Executive Order No. 06, 2016). Said hotline provided a platform for the public to report their complaints and or grievances against government agencies, officials, and or employees.

Moreover, as premised earlier, on 22 May 2018, Republic Act No. 11032 otherwise known as the "Ease of Doing Business and Efficient Government Service Delivery Act of 2018" was signed into law. Said RA aimed to streamline [then] current systems and procedures on government services. (Republic Act 11032, 2018). It is ought to be a realization of Point #3 of the 10-Point Socio-Economic Agenda of the Duterte, which is to "Increase competitiveness and the ease of doing business." (GMA News, 2016).

The Fiscal Year (FY) 2023 National Budget is the first full-year budget under the Marcos Jr. administration. A total amount of PHP 5.268 trillion was allotted, guided by the virtue of fiscal responsibility and accountability. The administration remains committed in accelerating recovery from the COVID-19 pandemic while simultaneously aiming in protecting the Filipino people's purchasing power (President Marcos Jr. Signs Historic 2023 National Budget Into Law, n.d.).

Similar to his predecessors, the Marcos Jr. administration's 8-point Socio-economic Agenda espouses the pursuit of digitalization through Agenda 8: Bureaucratic Efficiency. Boasting a total budget of PhP 15.6 billion, it was geared towards efforts "to digitalize government process and operations." (GAA 2023 Starting Point for Marcos Jr. Administration's 8-Point Socioeconomic Agenda, n.d.). This is in line with the thrust for a lean, efficient, and responsive government workforce.

The e-Government Philippines, or simply referred to as eGov PH, is a mobile application that “simplifies transactions between the government and citizens”. (EGOVPH, n.d.). Also referred to as the “super app”, eGov PH serves as the backbone of digitalization efforts in Marcos administration towards the pursuit for global competitiveness. Said app is a one-stop shop wherein users can gather information as well as transact to various agencies such as GSIS, SSS and PhilHealth at the convenience of their mobile devices. In addition to regular internet and mobile devices users in the metro, this application is being gradually pushed among Filipinos in isolated areas with the goal of providing greater connectivity and access.

This endeavour is also in alignment by the agenda of ease of doing business that was pursued by Marcos Jr.’s predecessors, reducing and red tape and enhancing overall user experience. Moreover, it is bound to significantly impact the lives of Filipinos, especially those who may not have access to physical government offices or find it difficult navigating through a bureaucratic maze.

However, it is important to note that several factors may influence whether these digitalization initiatives will succeed or fail, including proper budget implementation, adaptability of government institutions to digital services, and acceptance by citizens. For instance, while rolling out the eGov PH Mobile Application, the government needs to train its employees adequately, raise awareness among members of the public and find ways of bridging the gap between people who can afford digital gadgets and those who cannot particularly among minority races (marginalized and underserved communities).

Consequently, privacy and security concerns must take precedence in implementing any form of electronic service provision by governments. Given this ever-increasing personal identifiable information being captured and processed via platforms like eGov PH Mobile Application necessitates the establishment strong data protection measures along with protocols thus preserving citizen’s rights as well as maintaining trust given to them for their welfare by Filipinos from online state operations.

Convergence

Perhaps the quintessential example of convergence between GAD and Digitalization in the Philippines is the creation of the Gender Mainstreaming Monitoring System (GMMS). Developed in 2014, the GMMS serves as an “e-portal to track the gender mainstreaming initiatives of government agencies at various levels”. (Philippine Commission on Women, 2023).

The GMMS provides government agencies the platform to enter data on their GAD policies and interventions, monitor progress real-time, and overall facilitate compliance with respect to their approved GAD Plans and Budget (GPB). Moreover, the GMMS also acts as a knowledge management system that enables the sharing of insights and best practices associated with GAD among different agencies (Philippine Commission on Women, 2023). This functionality fosters collaboration between

governmental organizations through learning that causes change for better concerning gender mainstreaming.

The development and implementation of the GMMS signify that Philippine's government is committed to employing digital technologies for further advancement towards gender equality and women empowerment. By digitalizing GAD monitoring-reporting mechanisms, collection of data by GMMS becomes well-ordered. This facilitates the analysis and dissemination of said data and allows policy makers and stakeholders to make evidence-based decisions, thereby designing more effective interventions. (Illo et al., 2010). Furthermore, the GMMS aligns with broader national efforts towards e-governance promotion and public sector digitization by the government. The Philippine Digital Strategy puts emphasis on "enhancing the capability of government structures and institutions as well as upgrading the ICT skills of the entire bureaucracy." (Philippine Digital Strategy, 2014).

Even though it is an important step forward in monitoring and evaluation of gender mainstreaming efforts, GMMS should not merely focus on data collection and reporting alone when aiming at achieving gender equality. the GMMS should be harnessed to further bridge the gap between citizens and government agencies, particularly where GAD efforts are concerned. In an age where technology continues to shape society and internal administrative processes as a whole, it is important to utilize available technological options so that any initiative geared towards the betterment of citizens is streamlined and free of any internal and external difficulties. This will reduce instances where people, particularly vulnerable groups such as women and children, are unable to join the government as it spearheads projects and plans for their safety and development.

To summarize, the GMMS encapsulates the convergence of GAD mainstreaming and digitalization efforts in the Philippines. It helps in promoting and advancing the use of digital technologies both on a personal and governmental scale. At the same time, it can also help government agencies in expediting their planning and execution of GAD initiatives by providing them with avenues to store, analyse, compare, and process the data stemming from the results of their efforts. In turn, this can help them launch better projects and implement more effective interventions for vulnerable groups.

Complementary to the GMMS is the establishment of the GAD Corner. As described by the Commission on Filipinos Overseas (CFO), "it is the [CFO's] collection of GAD knowledge materials and its related programs, projects and activities. It serves as a portal for accessing and sharing information on mainstreaming gender and development." (Gender and Development Corner, n.d.). National Agencies, such as the DILG, DSWD and DPWH to name a few have integrated an online GAD corner to their respective official websites, allowing its stakeholders and the general public easier access.

However, this is all dependent on whether the government agencies are committed enough as well as having an understanding on how they can use it, hence

integrating gender perspective into their policies and programs or not. In future, there must be a comprehensive strategy to address all forms of gender disparities while exploiting digital tools to that effect.

Conclusions

It is established that Gender Mainstreaming and Digitalization are consciously being prioritized and sustained across administrations in the Philippines. However, it is also evident that the execution of these initiatives is anchored on different priorities. Digitalization efforts are centered on promoting bureaucratic efficiencies, improved connectivity and stimulating economic activity.

On the other hand, GAD mainstreaming focuses on the issuance of policies that promote gender sensitivity, inclusivity, protection, and capacity building. This is very evident in the numerous issuances and development plans from Presidential Decree No. 633 to RA 9710.

While the convergence of these two efforts has taken place, such as the implementation of the GMMS and GAD Corner, reviewed literature suggests that it is still not greatly emphasized on and convergent efforts are more agency-specific rather than a collective conscious effort. This current state or limitation can be transformed as an avenue for improvement and innovation.

Recommendations

As premised earlier, the Philippines' GAD mainstreaming and Digitalization efforts have been ingrained in the social fabric across administrations. This shows a clear sense of commitment and dedication to growth and development. However, greater convergence between these two equally efforts is essential if these are aspired to yield maximum results. This can be facilitated through the following:

Inclusive Policy and Program Integration – The government must ensure that today's technology integrates both GAD efforts and digitalization to readily bring its initiatives directly to its citizens. At the same time, it must continue to ensure the development of gender-responsive policies through inclusion that caters for specific needs and challenges faced by women as well as other marginalized groups seeking to access and benefit from digital technologies. (Gurumurthy & Chami, 2014).

Greater Accessibility and Capacity Building – The government should facilitate greater accessibility on both GAD and Digitalization efforts. Complement access with capacity building for civil servants, non-governmental organizations, and the general public – especially those from the vulnerable sectors to enable them gain relevant skills on how to maximize ICTs in promoting GAD as well as addressing gender related issues. (Hernandez & Roberts, 2018).

Robust Monitoring, Evaluation, Accountability, and Learning (MEAL) System – Another viable step would be to create a comprehensive MEAL system that tracks the progress, impact, and challenges of GAD and digitalization initiatives, promoting greater transparency, accountability, and continuous learning. (EvalCommunity, 2024).

The Philippine government can continue reaching out its citizens better by remaining adaptive innovative and sustainable. Ultimately, this is aimed at achieving a digitally literate society that puts gender at its core while ensuring equal access of benefits that come with digitization regardless of one's geographical location and socio-economic status.

Compliance with Ethical Standards

As part of the ethical standards of conducting research, the researchers have exercised due diligence in the proper citation of literature used as well as ensuring that both physical and online copies were sourced only from reputable sources. Moreover, to avoid plagiarism, the researchers subjected the manuscript to multiple iterations of proofreading and internal vetting. Finally, as stated in the abstract and methodology, the analysis and recommendations will be based primarily on the analysis of the literature cited and done purely for academic purposes.

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COPING WITH JOB INSECURITY: EXAMINING ANXIETY, FINANCIAL SECURITY, AND SOCIAL SUPPORT AMONG CONTRACT WORKERS IN THE PHILIPPINE GOVERNMENT

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ABSTRACT

This study investigates the resource management and stress mitigation factors among contract workers in the Philippine government through the lens of the Conservation of Resources (COR) theory. Using a quantitative research design, data were collected via an online survey from 162 contract workersfrom various government offices. The survey instruments included the Anxiety Self-Rating Scale, Financial Security Scale, Social Support Questionnaire (ISEL-Short Version), and Coping Scale. Data analysis involved descriptive statistics, bivariate correlations, and multi-linear regression analysis using SPSS version 20. The results indicated that financial security did not significantly correlate with anxiety and coping strategies. However, tangible support, a subscale of social support, showed a significant negative correlation with anxiety, emphasizing the importance of practical support in reducing anxiety levels. Other subscales of social support, such as appraisal and belonging, did not show significant correlations with anxiety and coping strategies. These findings highlight the necessity of enhancing tangible support to mitigate anxiety among contract workers. The study underscores the need for comprehensive support programs that include practical assistance to address the psychological impacts of job insecurity. Future research should explore these relationships further with larger samples and in different sectors to generalize the findings.

Keywords: *Job insecurity, anxiety, financial security, social support, coping strategies, contract workers*

INTRODUCTION

The shifting dynamics of employment have increasingly subjected workers to job insecurity, including those in contractual positions. This phenomenon is exacerbated by global economic uncertainties, technological advancements, and organizational restructuring (Shoss, 2017). Contract workers in the Philippine government are no exception, experiencing heightened anxiety as their contract termination dates approach. This study aims to assess the levels of anxiety and the coping strategies employed by these workers, contributing to a deeper understanding of how these mechanisms can mitigate the psychological impacts of job insecurity.

Recent research emphasizes the significant role of job insecurity as a stressor in the modern workforce. Job insecurity is defined as the perceived threat to the continuity and stability of employment as it is currently experienced (Shoss, 2017). This phenomenon has been associated with several negative effects, including mental distress, reduced job satisfaction, and decreased organizational commitment (Sverke, Hellgren, & Näswall, 2006).

Research highlights the significance of coping strategies in managing job insecurity. Coping involves constantly adjusting cognitive and behavioral efforts to handle specific internal and external demands perceived as overwhelming (Giunchi, Vonthron, & Ghislieri, 2019). Coping strategies are typically categorized into problem-focused and emotion-focused strategies. Problem-focused coping involves addressing the root cause of stress directly, while emotion-focused coping seeks to alleviate the emotional distress associated with the stressor (Giunchi et al., 2019).

Several studies have explored the coping strategies employed by individuals facing job insecurity. For instance, recent research has identified proactive coping behaviors, such as job search behaviors, organizational citizenship behaviors (OCB), and impression management, as common strategies used by employees to manage job insecurity (Nath et al., 2024; Sora et al., 2013). These strategies can significantly influence an individual's psychological well-being and their ability to adapt to stressful situations (Giunchi et al., 2019; Nath et al., 2024).

Moreover, financial security and social support have been identified as critical factors in mitigating the negative impacts of job insecurity. Financial security can reduce anxiety by providing a buffer against economic uncertainties, while social support can enhance emotional resilience by offering a sense of belonging and security (Bhowmick, Padhi, & Pattnaik, 2022; Patterson, 2003). This study aims to explore the relationship between these factors and the anxiety levels experienced by contract workers in the Philippine government.

Theoretical Framework

This study is grounded in the Conservation of Resources (COR) theory, which suggests that individuals strive to obtain, retain, and protect their resources. When these

resources are threatened or lost, stress ensues (Hobfoll, 1989). Job insecurity represents a significant threat to these resources, triggering anxiety and necessitating coping strategies to manage this stress.

Research Gap and Rationale

Despite extensive research on job insecurity, there needs to be more focus on the unique context of government contract workers in the Philippines. These workers often face uncertain rehiring, and delayed contracts or salaries, further exacerbating their stress and anxiety. This study addresses this gap by examining how financial security and social support influence anxiety and coping strategies in this specific population. The researchers of this study hypothesize that financial security and social support play crucial roles in mitigating anxiety among contract workers.

Research Questions

1. Does financial security influence anxiety levels and coping mechanisms of government contract workers?
2. Does social support system influence the levels of anxiety and the effectiveness of coping mechanisms among government contract workers?

METHODOLOGY

Locale of the Study

The study was conducted among contract workers in various government agencies in the Philippines, encompassing both local and national levels. A total of 59 offices participated, including 53 local government units and 6 national agencies. The participants (*N* = 162) comprised of (44%) males and (56%) were females, all on one-year contracts. The majority of participants (72%) were between the ages of 21 and 45, 27% were between 45 and 65, and a small percentage (2%) were aged 67 and 70.

Data Gathering Procedure

The participants were selected using an online survey method, ensuring that contract workers from various government agencies, including local government units such as cities and municipalities, and national government agencies, could participate, resulting in a wide and diverse pool of respondents. The study involved contract workers in the Philippines, aged 18 to 65 years, with diverse educational backgrounds.

Informed consent was collected from all participants prior to their involvement in the study. The survey ran from May 22, 2024, until June 8, 2024. Before participating, respondents were provided with detailed information about the study, including its purpose, procedures, and potential risks and benefits. This information was presented in an online consent form, which participants had to read thoroughly. They were informed

of their rights, including the right to withdraw from the study at any time without any negative consequences. Confidentiality and anonymity were strictly maintained, with assurances that their identities would not be disclosed and that the data collected would be used solely for research purposes. Participants indicated their consent and interest to participate by entering their email address in the online form, thus confirming their voluntary participation in the study.

Instruments Used

The study utilized several validated instruments to measure key variables such as anxiety, financial security, social support, and coping strategies.

The ***Anxiety Self-Rating Scale*** is a psychological assessment tool designed to measure the severity of anxiety symptoms in individuals. It is a self-report questionnaire that enables individuals to reflect on their experiences and rate the frequency and intensity of their anxiety symptoms. Adapted from the Zung Self-Rating Anxiety Scale (SAS), this scale comprises 10 items rated on a 5-point Likert scale ranging from 0 (never) to 4 (always). The scores range from 0 to 40, with higher scores indicating higher levels of anxiety (Dunstan, D. A., & Scott, N. (2020). The instrument demonstrated good reliability in this study, with a Cronbach's alpha of 0.82.

The ***Financial Security Scale*** is a self-report instrument designed to measure an individual's perception of their financial stability and security. Adapted from Munyon, Carnes, Lyons, and Zettler (2024), it consists of 5 items rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores on the scale indicate greater perceived financial security, allowing researchers to quantify and interpret an individual's financial stability effectively. This scale has been tested for reliability and validity in previous studies, with a Cronbach's alpha (α) of 0.91, indicating good internal consistency (Munyon et al., 2024).

The ***Social Support Questionnaire - Interpersonal Support Evaluation List (ISEL-Short Version)*** is a self-report measure designed to assess the perceived availability of social support across different domains. Adapted from Cohen, Mermelstein, Kamarck, and Hoberman (1985), it includes 12 items divided into three subscales (Appraisal, Belonging, and Tangible Support) rated on a 4-point scale ranging from 1 (definitely false) to 4 (definitely true). Higher scores on each subscale indicate greater perceived support in that domain, providing a comprehensive assessment of an individual's social support network. The scale has been validated for internal consistency and constructs validity, with a Cronbach's alpha (α) of 0.82 (Merz et al., 2014).

The ***Coping Scale***, adapted from Hamby, Grych, and Banyard (2013), is a self-report measure designed to assess coping strategies across different domains. It includes 13 items categorized into problem-focused and emotion-focused strategies, rated on a 4-point Likert scale ranging from 1 (not true about me) to 4 (mostly true about me). Higher scores indicate more frequent use of coping strategies, allowing for an assessment of how individuals manage stress and adversity. The scale was tested for reliability and validity with a Cronbach's alpha (α) of 0.91 (Hamby et al., 2013).

Data Analysis

Quantitative data analysis was performed using Statistical Package for the Social Sciences (SPSS) version 20. Descriptive statistics, including mean, standard deviation, and frequency distributions, were calculated to describe the sample characteristics and key variables. Pearson correlation coefficients were computed to examine the relationships between job insecurity, anxiety, financial security, social support, and coping strategies. Finally, a multi-linear regression analysis was conducted to test the influence of job insecurity on anxiety.

Scope and Limitations

The scope of the study is limited to contract workers in government agencies in the Philippines. The findings may not be generalizable to contract workers in other sectors or countries. The self-reported nature of the survey may also introduce response biases, despite assurances of anonymity.

RESULTS

TABLE 1: Descriptive Statistics and Correlations for Study Variables

	Variable	*N*	*M*	*SD*	1	2	3	4	5	6
1.	Financial	162	15.48	6.41	-	.098	.104	.075	.087	.037
2.	Appraisal Support	162	11.60	2.54	.098	-	.621**	.636**	-.183*	.047
3.	Belonging Support	162	11.20	2.35	.104	.621**	-	.501**	-.117	-.031
4.	Tangible Support	162	11.72	2.09	.075	.636**	.501**	-	-.196*	-.073
5.	Anxiety	162	11.48	6.10	.087	-.183*	-.117	-.196*	-	-.025
6.	Coping	162	2.99	.484	.037	.047	-.031	-.073	-.025	-

***Note**: * Correlation is significant at the 0.05 level (2-tailed).*
*** Correlation is significant at the 0.01 level (2-tailed*).

Scores on each scale were computed, and the descriptive statistics are presented in Table 2. The mean score for financial security is 15.48 (*SD*= 6.41), indicating that the participant's financial security is moderately secured, as their scores are around the midpoint. The mean score of their anxiety is 11.48 (*SD*= 6.10), suggesting that the participants are experiencing mild anxiety. Scores on the Social Support Scale were categorized into three subscales: Appraisal with a mean score of 11.60 (*SD*=2.54), Tangible with a mean of 11.72 (*SD*= 2.09), and Belonging with a mean score of 11.20 (*SD*= 2.35). The mean scores for these subscales indicate that they have lesser perceived Social Support in all three dimensions, as their scores are below the mean. Furthermore, scores on the Coping Scale have a mean score of 2.99 (*SD* = .484). This indicates that participants have lower scores on the said test, suggesting a lower level of coping.

As shown in the correlation Table 1 Bivariate correlations were conducted in each variable to check the relation between the predictor variables and criterion variable. Analysis shown that Financial Security is not correlated to Anxiety (r = .270, p = .087, N = 162). Similarly, with Financial Security is not also correlated to Coping (r =.641, p = .037, N = 162). This means that that having stable finances does not necessarily influence the anxiety and coping level of the participant, suggesting that other factors may significantly contribute on these factors.

Social Support and its subscales to Anxiety results shown the table that the subscales Appraisal (r= .020, p = -.183, N = 162), and Tangible support (r= .013, p = -.196, N = 162) are correlated to Anxiety. On the other hand, the subscale Belonging Support is not correlated to Anxiety (r= .138, p = -.117, N = 162). This means while Belonging Support does not influence the Anxiety level of the participants, results indicated that Appraisal and Tangible Support are effective on this context. Finally, Social Support and its Subscales the Appraisal Support (r= .557, p = .47, N = 162), Belonging Support (r= .691, p = -.031, N = 162), and Tangible Support (r= .356, p = -.073, N = 162) were not correlated to Coping. It implies that having a social support does not necessarily enhance an individual's ability to manage stress, indicating that coping mechanisms may rely more on personal attributes or other external factors.

TABLE 2: Regression Table

Source	*B*	*SE B*	B	*t*	*p*
Appraisal	-.235	.241	-.098	-.978	-.183
Tangible	-.388	.293	-.133	-1.325	-.196

***Note**: R^2 = .044*

A linear regression was calculated to predict anxiety based on Tangible Support. A significant regression equation was found in Appraisal and Tangible Support (F (2, 160) = 3.664 p = .028), with an R^2 of .044. The regression equation indicates that for each unit increase in Appraisal Support, the Anxiety score decreases by -.235, and for each unit increase in Tangible Support, the Anxiety score decreases by -.388. This suggests that both appraisal and tangible support are significant predictors of lower anxiety levels among government contract workers.

DISCUSSION

The study's findings reveal that financial security does not significantly influence anxiety levels among contract workers in the Philippine government. Despite the common assumption that financial stability is crucial for mental well-being, the results indicate that financial security alone may not be the primary determinant of anxiety in this context. This suggests that improving financial security may not be sufficient to reduce anxiety levels, pointing to the need for a broader approach in addressing mental health issues among contract workers (Kim & von dem Knesebeck, 2015; Selenko & Batinic, 2013).

In contrast, social support, particularly appraisal and tangible support, significantly influences anxiety levels among contract workers. The results show that higher levels of these types of support are associated with lower anxiety levels. This finding underscores the importance of a supportive work environment where employees feel valued and assisted. Previous research supports this claim, highlighting that social support in the workplace significantly reduces stress and anxiety (Taylor, 2012). More recent studies by Uchino (2009) emphasize the role of social support in enhancing psychological well-being. This practical approach can significantly reduce anxiety levels and improve overall well-being among contract workers. Theoretically, this aligns with the Conservation of Resources (COR) theory, which posits that bolstering resources through organizational support reduces stress (Hobfoll et al., 2018).

However, the study found no significant correlation between social support and coping mechanisms. This suggests that while social support can effectively reduce anxiety, it does not necessarily improve coping strategies. Although the relationship between social support and anxiety reduction is well-documented (Taylor et al., 2021; Ozbay et al., 2007), there is limited research directly examining the impact of social support on coping mechanisms. Thus, this finding highlights a gap in the existing literature and suggests the need for further research to explore how social support influences coping strategies.

Overall, the study underscores the complex interplay between financial security, social support, anxiety, and coping mechanisms. While financial security alone does not significantly mitigate anxiety or enhance coping, strong social support, particularly tangible and appraisal support, plays a crucial role in reducing anxiety. This highlights the importance of a multifaceted approach to employee well-being that incorporates robust social support systems alongside financial stability. By understanding and addressing these dynamics, government agencies can better support their contract workers, leading to improved mental health and productivity.

Theoretical Implications

These findings contribute to the theoretical understanding of job insecurity and coping by highlighting the nuanced roles of different types of support. The Conservation of Resources (COR) theory posits that individuals strive to obtain, retain, and protect their resources, and when these resources are threatened or lost, stress ensues (Hobfoll, 1989). The significant role of tangible support in reducing anxiety among contractual workers supports the idea that practical resources are vital for managing job insecurity.

Empirical evidence extends our understanding of the COR theory by demonstrating that not all forms of support are equally effective in reducing stress. For instance, while tangible support significantly reduces anxiety, appraisal support, which involves evaluative feedback and encouragement, also plays a crucial role. This finding aligns with recent studies suggesting that different types of social support can buffer against the adverse effects of job insecurity in various ways.

Additionally, the lack of significant correlation between social support and coping mechanisms suggests that while support systems are effective in mitigating anxiety, they do not directly enhance coping strategies. This implies that the COR theory might need to be expanded to account for the complexity of coping mechanisms, which appear to be influenced more by personal traits and individual resilience than by external support alone.

Furthermore, the findings suggest that financial security, often considered a crucial resource, may not directly alleviate anxiety or improve coping strategies among contract workers. This challenges the traditional understanding within the COR framework that resource gain directly correlates with stress reduction. Instead, it highlights the importance of a comprehensive approach that includes both resource provision and the development of personal coping skills.

Practical Implications

The results suggest that interventions aimed at reducing anxiety among contractual workers should focus on enhancing tangible support. Practical assistance, such as providing financial aid, resources for daily living, and material support, could significantly alleviate anxiety. Organizations and policymakers should consider implementing programs that offer tangible support to contractual workers to help mitigate the adverse effects of job insecurity.

Conclusions

This study sought to understand the influences of financial security and social support on anxiety levels and coping mechanisms among contract workers in the Philippine government. Addressing the first research question, the findings reveal that financial security does not significantly impact anxiety levels or coping strategies. This suggests that financial stability alone may not be sufficient to address the mental health needs of contract workers. Theoretically, this challenges the traditional view within the Conservation of Resources (COR) theory that resource gain directly correlates with stress reduction. Practically, it implies that interventions solely focused on improving financial security may not effectively reduce anxiety or enhance coping mechanisms among these workers. A more comprehensive approach that includes the development of personal coping skills and resilience is necessary.

The second research question focused on the role of social support in influencing anxiety levels and coping mechanisms. The study found that social support, particularly appraisal and tangible support, significantly reduces anxiety levels among contract workers. This underscores the importance of a supportive work environment where employees feel valued and assisted. Government agencies should prioritize enhancing social support systems, focusing on practical assistance and constructive feedback to mitigate anxiety effectively. However, the lack of significant correlation between social support and coping mechanisms indicates that while support systems are effective in reducing anxiety, they do not necessarily enhance coping strategies. This suggests that

interventions aimed at improving coping mechanisms need to incorporate specific training in coping techniques and programs designed to build individual resilience.

Recommendations

A holistic approach to well-being is essential. Government agencies should develop integrated wellness programs that combine financial support, social support, and personal development. Regular monitoring of employee well-being and feedback mechanisms should be implemented to assess the effectiveness of the support programs. Surveys, focus groups, and one-on-one meetings can provide valuable insights into employee needs and the impact of implemented programs.

Future research should further explore the nuanced roles of different types of support in managing job insecurity and stress. Researchers should examine the varying levels of anxiety that contract workers experience and how these are influenced by different support mechanisms.

Moreover, future studies should control for the longevity of contract service as a variable, as the duration of contract work may influence participants' behavior and ability to adjust to their situations over time. Understanding how contract workers adapt across different contract lengths could shed light on long-term strategies for improving their mental health and coping mechanisms.

Compliance with Ethical Standards

The researchers of this study ensured total compliance with ethical standards throughout the research process. Informed consent was obtained from all respondents, who were clearly informed about the nature, purpose, and procedures of the study. Respondents were assured of their freedom to withdraw from the study at any time without any consequences. Anonymity was strictly maintained by ensuring that no identifying information was collected or disclosed, thereby safeguarding the privacy and confidentiality of the respondents. The well-being of all respondents was a top priority, and measures were taken to ensure that participation did not cause any harm or distress.

There were no conflicts of interest in the conduct of this study. The researchers adhered to strict anti-plagiarism policies, ensuring that all sources were properly cited and that original research was conducted. The interpretation of the findings was conducted objectively, without bias, and the results were used solely for research purposes. This adherence to ethical standards guarantees the integrity and credibility of the study.

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CORRELATIONAL STUDY OF QUALITY OF LIFE AND DIABETES MELLITUS II: EXPLORING THE RELATIONSHIP BETWEEN HEALTH-RELATED QUALITY OF LIFE AND DIABETES MANAGEMENT OUTCOMES

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ABSTRACT

Diabetes has become a serious threat to people's health. In recent years, the number of diabetic patients has gradually increased. It has the characteristics of a long course of disease, high incidence and easy occurrence of complications. In severe cases, it can lead to multiple organ damage and negatively affect the quality of life of patients. Therefore, the researchers wanted to determine the quality of life of people with diabetes to inform the development of diabetes interventions. This study decided to investigate the relationship between quality of life and disease management outcomes in people with type 2 diabetes, with the aim of providing a basis for developing measures that can improve quality of life in people with type 2 diabetes. The study used the WHO-BREF questionnaire and Spearman correlation analysis to determine statistical significance. There were significant correlations between blood glucose control ($P < 0.01$) and complication prevention ($P < 0.01$) and quality of life in patients with type 2 diabetes. The results reveal the importance of controlling blood sugar and preventing complications in improving quality of life for people with type 2 diabetes.

Keywords: d*iabetes mellitus , quality of life, disease management, patients with diabetes*

INTRODUCTION

Diabetes is a metabolic disorder caused by genetic and environmental factors, resulting in insulin insensitivity, insulin deficiency, and impaired biological function. Due to the high prevalence of diabetes and the associated disability and mortality, the disease has become a critical health issue worldwide. According to data from the International Diabetes Federation (IDF) in 2021, approximately 537 million adults worldwide have diabetes, with a prevalence of 10.5%, and three-quarters of those living with diabetes live in low - and middle-income countries. If countries do not take appropriate measures in time, the total number of people with diabetes worldwide is expected to increase to 643 million by 2030, with the prevalence rising to 11.3%. Since the 21st century, diabetes has become one of the most important chronic non-communicable diseases in China, seriously affecting the quality of life of residents (Guariguata et al., 2014). IDF data show that in 2021, China ranks first in the world in the number of people with diabetes, Chinese adults with diabetes reached 141 million, accounting for 24% of the global diabetes patients. Among the various types of diabetes, type 2 diabetes is the main diabetes in the Chinese population, accounting for 93.7% of the total number of diabetes patients(Zheng et al., 2020). The incidence of diabetes is on the rise globally. According to a newly released epidemiological survey, the prevalence of type 2 diabetes among Chinese adults has increased from 11.2% in 2018 to 12.8% in 2023, showing an upward trend.

With the rapid development of China's economy, the acceleration of urbanisation, the increasingly serious ageing of the population and the prevalence of obesity, diabetes has become one of the major public health problems affecting the health of Chinese residents (Tang &Peng,2023). Diabetes is a metabolic disease characterised by hyperglycemia, which is caused by the inability to reduce blood sugar due to the impaired metabolic function of the human body (Li, 2023). Diabetes is divided into type 1 diabetes, type 2 diabetes mellitus (DM II), gestational diabetes and other diabetes. Type 2 diabetes mellitus is the deficiency or abnormal function of insulin secretion in the human body, resulting in the relative or absolute insufficiency of insulin in the body, which leads to the reduction of glucose uptake and utilization.

The health management of diabetes plays an important role in the treatment process, which is mainly reflected in the prevention and control of blood sugar, diet, medication, exercise and so on (Gao, 2023). Studies have shown that the management results of diabetes patients in China are poor, which is reflected in poor blood sugar control, inadequate blood sugar monitoring, lack of exercise and poor awareness of foot care (Liang, 2020) . Now diabetes has become a chronic disease that endangers the physical and mental health of patients. If the blood sugar is not well controlled, it will cause corresponding complications, such as diabetic foot, retinopathy, etc., which will affect their work and seriously affect their quality of life (Zhuang et al, 2021). Diabetes health management through various methods to improve patients' cognitive level, enhance cooperation in the treatment process, change bad living and eating habits, so that patients with diabetes have the ability to regulate diet, exercise and drug treatment, so as to improve treatment compliance, control the disease, reduce or delay the occurrence of

diabetes complications, improve the quality of life of patients(Li, 2020). Therefore, it is an urgent problem to improve the health management level of type 2 diabetes patients, improve their blood sugar control level, improve their physical and mental health, reduce the risk of complications of diabetes patients, and thus improve the quality of life. Through relevant research, the researchers of this study aimed to investigate and statistically analyze the disease management outcomes and quality of life of patients with type 2 diabetes in Qufu People's Hospital, provide a theoretical basis for the direction and focus of clinical nursing education, formulate reasonable education plans, and improve education effectiveness, in order to achieve the goal of improving the overall quality of life of patients with type 2 diabetes.

Research Questions

The study aims to determine the relationship between quality of life and disease management outcomes in patients with type 2 diabetes.
Guided by the overall objective, the study aims to answer the following questions:

1. To describe the respondents according to their socio-demographic characteristics
2. To identify the respondents' Diabetes mellitus II management outcomes in terms of:
    a. Glycemic control
    b. Treatment adherence, and
    c. Complication prevention;
3. To assess the overall health-related Quality of Life of respondents with Diabetes mellitus II according to:
    a. Physical,
    b. Environmental,
    c. Social, and
    d. Psychological.
4. To determine the relationship between health-related Quality of Life and Diabetes mellitus II management outcomes.

METHODOLOGY

1. Study design and local

This study mainly explores the relationship between health-related quality of life and diabetes management outcomes. Because it studies the relationship between two variables, this is a descriptive-correlational study. For this study, researchers determined the demographic characteristics, blood sugar control, complication prevention, treatment compliance, and quality of life of the participants. The study was conducted in the Endocrinology Ward of Qufu People's Hospital, which is an authoritative tertiary general hospital in the local area. The hospital has 1,200 beds and is also equipped with a variety

of equipment. The researchers focused on the behavior of the participants in their natural environment without any manipulation of the variables in the study.

2. Study participants

2.1. Sample Size and Sampling

The sample size is measured because the sample population is representative of the total population of the study. The target number of participants for the study was calculated using the Raosoft® tool. Considering the unknown size of the population, a margin of error of 5%, a confidence level of 95%, and a response distribution of 50%; the researcher calculated that the recommended minimum size is 377 participants. The researcher used a convenience sampling method to obtain the sample for this study. This is a non-probability sampling method in which the researcher randomly selects respondents at a specific time and in a specific hospital for research purposes. This sampling method was simpler and faster to implement.

2.2. Inclusion and Exclusion Criteria

The researchers included a total of 377 people with type 2 diabetes who met the diagnostic criteria of the 2018 Chinese Type 2 Diabetes Prevention and Treatment Guidelines, had a disease course of ≥ 3 months, were over 18 years old, were local residents, and could communicate correctly and express their true feelings and wishes. Patients with mental disorders, cognitive disorders who could not cooperate to complete the answer sheet, and those with severe acute and chronic complications and other serious heart, brain, lung, and kidney diseases were excluded.

3. Research Instruments

This study mainly used questionnaires as a research tool. According to the variables of this study, the researchers set 9 questions to collect the basic socio-clinical demographic information of the patients, set 2 questions to obtain the data of complications through their views on the control of glycemic index, set 4 questions to collect the blood sugar control status of the patients, and used R studio version 4.2.1 software to describe the answers to these 15 questions.

The World Health Organization Brief Table On Quality of Life Measurement was used. This is a 26-item self-directed multiple-choice questionnaire with the following evaluative components:General QOL (one question); HRQOL (one question);Physical Domain (7 questions): Activities of daily living; Dependence on medical substance and medical aids; Energy and fatigue; Mobility;Pain and discomfort and Sleep and rest; Work capacity ; Psychological Domain (6 questions): Bodily image and appearance; Negative feelings; Positive feelings; Self-esteem; Spirituality/ religion/ personal beliefs, Thinking, learning, memory, and concentration; Social Relationship Domain (3 questions): Personal Relationships ;Social Support; Sexual Activity ; Environmental Domain (8 questions):

Financial Resources ; Freedom, physical safety, and security; Health and social care: accessibility and quality ;Home environment; Opportunities for acquiring current information and skills; Participation in opportunities for recreation and leisure activities ; Physical environment (pollution, noise, traffic, climate); Transport.

The World Health Organization Brief Table On Quality of Life Measurement was translated into Chinese. This questionnaire was used in this study because: the questionnaire has been widely used and validated by the World Health Organization; it provides a comparison of quality of life between different diseases; no subject would encounter any difficulty in filling out the questionnaire; it can be used for all types of respondents and the results are wide-ranging; the instrument is also very reliable, with a Cronbach's alpha of 0.85.

The reliability of the treatment compliance questionnaire in diabetic patients was 0.83. The questionnaire included five dimensions: diet, medication, exercise, self-monitoring and regular review, and the validity of each dimension was 0.85, 0.84, 0.79, 0.78, 0.82, respectively. The questionnaire consists of 20 items in 5 dimensions, and each item adopts a 3-level scoring method, namely: often(1 point), occasionally (2 points), and never (3 points). Questionnaire scores ranged from 20 to 60, with higher scores indicating better patient compliance and lower scores indicating worse patient compliance. In this study, a compliance score of 40 points is taken as the critical point, a compliance score of ≥40 points is considered to be good, and a compliance score of < 40 points is considered to be poor.

The questionnaire will take an estimate of 30 minutes to fill out.

4. Specific Procedures Based on Study Objectives

4.1. Procedure 1: Communication Letters

A letter to the World Health Organization (WHO) was sent to ask permission to use the World Health Organization Brief Table On Quality of Life Measurement; The researchers had obtained approval from the hospital to conduct this study and allowed eligible patients in the hospital to participate in the study. With the approval of the hospital, the researchers signed a confidentiality agreement. The researchers also presented an informed consent form and obtained the consent of the participants.

4.2. Procedure 2: Data Collection

The researcher followed the information provided by the nurse, understood the schedule of the respondents, asked the respondents to fill in the questionnaire, asked the respondents to complete the questionnaire within 30 minutes, collected the questionnaire from the respondents, and checked whether all questions were answered.

4.3. Follow up responses

The respondents had the right to express their withdrawal from the study at any time without any questions; If a participant did not fill out the questionnaire due to doubt, the researcher contacted the participant to explain the questionnaire if necessary, and the participant was informed that there were no right or wrong answers.

5. Statistical Analysis of Data

Guided by the statistician, the R studio version 4.2.1 software was used for data analysis, and the general situation of type 2 diabetes patients was described: the Count data expressed as percentages; Measurement data conforming to normal distribution are expressed as mean ± standard deviation (x ± s), median and quartile range otherwise. Mean ± standard deviation was used to described disease management and quality of life, while Pearson correlation analysis was used to analyze the correlation between disease management and quality of life. If the data did not conform to a normal distribution, Spearman's statistical method was used for analysis. $P<0.05$ was considered statistically significant. Blood glucose control and treatment compliance scores of patients with type 2 diabetes were expressed by mean ± standard deviation (x ± s), the number of complications was expressed by mean ± standard deviation (x ± s).

RESULTS

A total of 377 people with diabetes were included in the study. Table 1 shows the demographic characteristics of the respondents it showed that the demographic characteristics of the respondents in this study indicate a mean age of 64.43 years with a standard deviation of 11.210 years. The sample comprised predominantly male participants (57.82%) compared to females (42.18%). Most respondents were married (76.39%), with smaller percentages being single (4.24%), cohabitation (3.98%), divorced or legally separated (5.57%), and widowed (9.81%). In terms of occupation, a majority were farmers or workers (65.52%), followed by retirees (27.32%), unemployed individuals (6.37%), and students (0.80%). Regarding educational attainment, more than half had completed junior high school or below (55.70%), while others had completed high school or technical secondary school (34.22%), college or undergraduate courses (6.63%), and graduate studies or higher (3.45%). Family history of diabetes mellitus was reported by 38.73% of respondents, while 61.27% reported no such history. The duration of diabetes varied, with 72.41% having had diabetes for less than 10 months, 17.24% for 10-20 months, and 10.34% for more than 20 months. Complications associated with diabetes were reported by many, with 24.93% having no complications, and others suffering from cardiovascular disease (21.49%), cerebrovascular disease (11.67%), eye disease (19.36%), kidney disease (13.53%), and diabetic foot (9.02%). The mean duration of complications varied, with cardiovascular disease lasting on average 5.08 years (SD =

4.612), cerebrovascular disease 3.34 years (SD = 2.011), eye disease 2.51 years (SD = 1.628), kidney disease 3.55 years (SD = 2.703), and diabetic foot 3.65 years (SD = 2.753).

Table 1. Demographic characteristics of the respondents.

	M	SD
Age	64.43	11.210
	n	%
Sex		
Male	218	57.82%
Female	159	42.18%
Civil status		
Single	16	4.24%
Married	288	76.39%
Cohabitation	15	3.98%
Divorce/Legally Separated	21	5.57%
Widow/Widower	37	9.81%
Occupation		
Unemployment	24	6.37%
Student	3	0.80%
Farmer or Worker	247	65.52%
Retirement	103	27.32%
Highest educational attainment		
Junior high school and below	210	55.70%
High school/Technical secondary school	129	34.22%
College/Undergraduate course	25	6.63%
Graduate and above	13	3.45%
Family history of diabetes mellitus		
Yes	146	38.73%
No	231	61.27%
Duration of diabetes (in months)		
less than 10	273	72.41%
10-20	65	17.24%
> 20	39	10.34%
Complications		
None	94	24.93%
Cardiovascular disease	81	21.49%
Cerebrovascular disease	44	11.67%
Eye disease	73	19.36%
Kidney disease	51	13.53%
Diabetic foot	34	9.02%
	M	SD
Years of complication		
Cardiovascular disease	5.08	4.612
Cerebrovascular disease	3.34	2.011

Eye disease	2.51	1.628
Kidney disease	3.55	2.703
Diabetic foot	3.65	2.753

The descriptive statistics on DM II management outcomes in terms of glycemic control showed in Table 2.1. reveal that the respondents had an average last blood sugar level of 11.04 mmol/L with a standard deviation of 3.633 mmol/L. The mean blood glucose concentration two hours after a meal was notably higher at 17.68 mmol/L, with a standard deviation of 3.391 mmol/L. On average, respondents reported their blood sugar levels being higher than normal 5.89 times, with a standard deviation of 3.635. The majority of respondents (82.23%) had undergone fasting blood sugar (FBS) diagnostics, while 17.77% had random blood sugar (RBS) tests. When categorizing the frequency of elevated blood sugar levels, 29.97% of respondents experienced high blood sugar levels more than three times, 25.73% reported elevated levels three to five times, and 44.30% experienced high levels more than five times.

Table 2.1. Descriptive statistics on the DM II management outcomes in terms of Glycemic control.

	M	SD
Last blood sugar (in mmol/L)	11.04	3.633
Blood glucose concentration 2 hours after meal (in mmol/L)	17.68	3.391
Times were blood sugar levels are higher than normal	5.89	3.635
	n	%
Last blood sugar (in mmol/L) category		
Normal	1	0.27%
Impaired fasting glucose	7	1.86%
Provisional diagnosis of diabetes	369	97.88%
Type of blood diagnostics		
FBS	310	82.23%
RBS	67	17.77%
Times were blood sugar levels are higher than normal (in category)		
>3	113	29.97%
3-5	97	25.73%
5 and above	167	44.30%

The descriptive statistics on DM II management outcomes in terms of treatment adherence indicate several areas of concern among the respondents. A significant portion reported often forgetting to take their medicine or inject insulin (49.07%), with 40.05% occasionally doing so. Many respondents were influenced by non-medical staff to change their medication, with 18.57% doing so often and 61.01% occasionally. Nearly half of the respondents (47.75%) often reduced or stopped their medication when symptoms improved, while 31.83% did so occasionally. Conversely, when symptoms worsened or blood sugar levels were high, 38.73% often increased their dosage or changed their medication, and 39.52% did so occasionally. Irregular eating habits were also prevalent, with 23.61% often overeating and 61.80% occasionally doing so. Dietary inflexibility was reported by 16.98% often and 57.82% occasionally. A notable 43.50% often relaxed diet control, substituting exercise with daily activities, and 35.81% occasionally did so. Some

respondents (35.81%) often ate less or no food to control blood sugar, with 42.97% doing so occasionally.

Exercise adherence was also notable, as 18.83% often gave up exercise therapy and 65.25% did so occasionally. Leisure activities such as playing mahjong or watching TV were common, with 22.55% often engaging in these activities and 35.81% occasionally. Monitoring challenges were evident, with 20.16% often failing to monitor themselves during changes in their environment, and 69.50% doing so occasionally. Long-term monitoring lapses were reported, with 35.01% often giving up monitoring for more than a month due to feeling good, and 45.09% doing so occasionally. Regular blood sugar measurement was maintained by most, but 56.23% often did not monitor other critical health indicators. Lastly, hospital visits in response to worsening conditions were frequent, with 67.37% often doing so. Overall, the average treatment adherence score was 37.42 with a standard deviation of 6.985, reflecting considerable variability and highlighting the need for improved adherence strategies in managing DM II.

Table 2.2. Descriptive statistics on the DM II management outcomes in terms of Treatment adherence.

Items	Often n (%)	Occasionally n (%)	Never n (%)	Mean	SD
1. Have you ever forgotten to take medicine or inject insulin?	185（49.07%）	151（40.05%）	41（10.88%）		
2.Have you ever listened to the persuasion of non-medical staff and changed your own drugs?	70（18.57%）	230（61.01%）	77（20.42%）		
3.When you feel that your symptoms have improved or your blood sugar control is better, have you ever reduced your medication or stopped taking it?	180（47.75%）	120（31.83%）	77（20.42%）		
4. When you feel that your symptoms	146（38.73%）	149（39.52%）	82（21.75%）		

are getting worse or your blood sugar level is high, have you ever increased your dosage or changed your medicine?					
5. Do you have any experience of eating at will, overeating and eating irregularly?	89（23.61%）	233（61.80%）	55（14.59%）		
6. Is your diet single and inflexible, and you can't adjust it in time when your illness changes?	64（16.98%）	218（57.82%）	95（25.20%）		
7. Do you relax your diet control whereplace exercise with daily life?	164（43.5%）	148（39.26%）	65（17.24%）		
8. Do you deliberately eat less or no food when	135（35.81%）	162（42.97%）	80（21.22%）		

controlling blood sugar?					
9. Have you ever given up exercise therapy for various reasons?	71（18.83%）	246（65.25%）	60（15.92%）		
10. Do you take playing mahjong and watching TV as your main leisure ways?	85（22.55%）	135（35.81%）	157（41.64%）		
11. Do you often replace exercise with daily life?	107（28.38%）	134（35.54%）	136（36.07%）		
12. Have you ever exercised several times a day or only once a few days?	83（22.02%）	241（63.93%）	53（14.06%）		
13. Do you fail to monitor yourself in time when your internal and external environment changes such as climate change, improper diet, stress and fatigue, and mood swings?	76（20.16%）	262（69.50%）	39（10.34%）		

14. Have you ever given up monitoring for more than 1 month because you feel good?	132（35.01%）	170（45.09%）	75（19.89%）		
15. Do you only measure blood sugar regularly, but do not monitor blood pressure, blood lipid, glycosylated hemoglobin, etc.	212（56.23%）	133（35.28%）	32（8.49%）		
16. Do you not insist on monitoring when you go out, travel or change your lifestyle?	71（18.83%）	233（61.80%）	73（19.36%）		
17. Have you ever forgotten to review?	110（29.18%）	229（60.74%）	38（10.08%）		
18. Do you go to the hospital only when your condition worsens?	254（67.37%）	98（25.99%）	25（6.63%）		

19. Do you think the blood sugar level can be felt by yourself, but you have not checked it as required?	89（23.61%）	202（53.58%）	86（22.81%）		
20. Have you ever had an intermittent review for more than 3 months due to various reasons?	71（18.83%）	232（61.54%）	74（19.63%）		
Overall				37.42	6.985

The descriptive statistics on DM II management outcomes in terms of complication prevention reveal that a significant number of respondents struggle with blood sugar control. Only 8.22% reported having very good control of their blood sugar, while 20.69% described their control as good. A larger proportion, 23.34%, indicated moderate control, and a worrying 37.67% reported poor control, with 10.08% having very poor control. When it comes to the steps taken to manage blood sugar, the majority (63.13%) take their medicine as prescribed, while smaller percentages control their diet (10.88%), exercise moderately (10.88%), and quit smoking (14.32%). A negligible 0.80% reported taking no steps to manage their blood sugar.

Table 2.3. Descriptive statistics on the DM II management outcomes in terms of Complication prevention.

	n	%
How well do you control your blood sugar		
Very good control	31	8.22%
Good control	78	20.69%
Moderate control	88	23.34%
	14	
Poor control	2	37.67%
Very poor control	38	10.08%
Steps to take control of blood sugar		
Control diet	41	10.88%

Exercise moderately	41	10.88%
Quit smoking	54	14.32%
	23	
Take medicine as prescribed	8	63.13%
None	3	0.80%

The descriptive statistics on overall quality of life and general health among the respondents indicate a generally low perception of well-being. The average overall quality of life and general health score was 5.52, with a standard deviation of 2.122, reflecting considerable variation in responses. A substantial proportion of respondents rated their quality of life as poor (49.34%) or very poor (6.63%), while 12.47% felt neither poor nor good about their quality of life. On a more positive note, 23.87% were satisfied with their quality of life, and 7.69% were very satisfied. Satisfaction with health was similarly low, with 46.68% rating their health as poor and 9.28% as very poor. Only 10.34% felt neutral about their health, while 26.53% were satisfied and 7.16% very satisfied.

Table 3.1. Overall quality of life and general health.

Items	Very poor n (%)	Poor n (%)	Neither poor and good n (%)	Good n (%)	Very good n (%)	Mean	SD
1.How would you rate your quality of life ?	25(6.63)	186 (49.34%)	47 (12.47%)	90 (23.87 %)	29 (7.69%)		
2.How satisfied are you with your health?	35 (9.28%)	176 (46.68%)	39 (10.34%)	100 (26.53 %)	27 (7.16%)		
Overall						5.52	2.122

The physical health domain of the respondents, as measured by an average transformed scale score of 46.80 with a standard deviation of 17.355, reflects various challenges. Physical pain significantly impacts daily activities for many, with 27.32% reporting it prevents them "very much" and 5.04% indicating an "extreme" impact. Medical treatment is necessary to function for a significant portion, with 21.49% requiring it "very much" and 4.24% to an "extreme" extent. Energy levels are low, as 33.42% feel they have "a little" energy and 7.69% report having none. Mobility is also a concern, with 18.30% rating their

ability to get around as poor, although 32.36% are satisfied with their mobility. Sleep satisfaction is low, with 38.73% dissatisfied and 13.79% very dissatisfied. Satisfaction with daily living activities is mixed, with 25.46% dissatisfied and 10.61% very dissatisfied, while 27.59% are satisfied. Similarly, satisfaction with work capacity varies, with 25.73% dissatisfied and 9.55% very dissatisfied, but 25.46% are satisfied. These findings suggest significant physical health challenges among the respondents, impacting their daily activities, mobility, energy levels, and overall quality of life.

Table 3.2. Physical health domain.

Items	Not al all n (%)	A little n (%)	A moderat e amount n (%)	Very much n (%)	An extreme amount n (%)	M	SD
3. To what extent do you feel that physical pain prevents you from doing what you need to do?	16.18 %	36.34%	15.12%	27.32 %	5.04%		
4. How much do you need any medical treatment to function in your daily life?	21.22 %	36.34%	16.71%	21.49 %	4.24%		
Items	Not al all n (%)	A little n (%)	Moderat ely n (%)	Mostl y n (%)	Complet ely n (%)	M	SD
10. Do you have enough for everyday life?	7.69%	33.42%	27.59%	20.42 %	10.88%		
Items	Very poor n (%)	Poor n (%)	Neither poor and good n (%)	Good n (%)	Very good n (%)	M	SD
15. How well are	6.90%	18.30%	32.63%	32.36	9.81%		

you able to get around?				%			
Items	Very dissatisfied n (%)	Dissatisfied n (%)	Neither satisfied nor dissatisfied n (%)	Satisfied n (%)	Very satisfied n (%)	M	SD
16. How satisfied are you with your sleep?	13.79 %	38.73%	15.65%	23.08 %	8.75%		
17. How satisfied are you with your ability to perform your daily living activities?	10.61 %	25.46%	26.26%	27.59 %	10.08%		
18. How satisfied are you with your capacity for work?	36 (9.55%)	97 (25.73%)	115 (30.50%)	96 (25.46 %)	33 (8.75%)		
Overall						46. 80	17. 355

The psychological domain of the respondents, reflected by an average transformed scale score of 45.80 with a standard deviation of 21.562, highlights several areas of concern. Enjoyment of life is limited for many, with 13.79% reporting no enjoyment at all and 34.22% enjoying life only a little. However, 27.06% enjoy life very much, and 11.14% enjoy it to an extreme degree. The sense of life being meaningful is similarly varied, with 15.38% feeling life is not meaningful at all and 30.77% feeling it is only a little meaningful, while 26.79% find it very meaningful, and 15.12% to an extreme extent.

Concentration is another challenge, as 13.26% are unable to concentrate at all and 32.10% can concentrate only a little. Meanwhile, 24.93% can concentrate moderately, and 21.49% mostly. Acceptance of bodily appearance is low for many, with 6.37% not accepting it at all and 37.14% accepting it only a little. Moderately and mostly accepting respondents comprise 25.20% and 20.42%, respectively.

Self-satisfaction shows a mixed picture: 7.43% are very dissatisfied, 30.24% are dissatisfied, and 23.61% are neither satisfied nor dissatisfied. However, 26.79% are

satisfied, and 11.94% are very satisfied. Negative feelings such as blue moods, despair, anxiety, and depression are common, with 18.04% experiencing them quite often, 17.77% very often, and 3.98% always. Nevertheless, 28.65% never experience these feelings, and 31.56% seldom do.

Table 3.3. Psychological domain.

Items	Not al all n (%)	A little n (%)	A moderat e amount n (%)	Very much n (%)	An extreme amount n (%)	M	SD
5.How much do you enjoy life?	52 (13.79 %)	129 (34.22%)	52 (13.79%)	102 (27.06 %)	42 (11.14%)		
6.To what extent do you feel your life to be meaningful?	58 (15.38)	116 (30.77%)	45 (11.94%)	101 (26.79 %)	57 (15.12%)		
7. How well are you able to concentrate?	50 (13.26 %)	121 (32.10%)	94 (24.93%)	81 (21.49 %)	31 (8.22%)		
Items	Not al all n (%)	A little n (%)	Moderat ely n (%)	Mostl y n (%)	Complet ely n (%)	M	SD
11.Are you able to accept your bodily appearance?	24 (6.37%)	140 (37.14%)	95 (25.20%)	77 (20.42 %)	41 (10.88%)		
Items	Very dissatis fied n (%)	Dissatis fied n (%)	Neither satisfied nor dissatisfi ed n (%)	Satisfi ed n (%)	Very satisfied n (%)	M	SD

19. How satisfied are you with yourself?	28 (7.43%)	114 (30.24%)	89 (23.61%)	101 (26.79 %)	45 (11.94%)		
Items	Never n (%)	Seldom n (%)	Quite often n (%)	Very often n (%)	Always n (%)	M	SD
26. How often do you have negative feelings such as blue mood, despair, anxiety, depression?	108 (28.65 %)	119 (31.56%)	68 (18.04%)	67 (17.77 %)	15 (3.98%)		
Overall						45. 80	21. 562

The social relationships domain of the respondents, with an average transformed scale score of 62.67 and a standard deviation of 20.993, indicates a generally positive perception of social interactions and support. Satisfaction with personal relationships is relatively high, with 39.26% satisfied and 15.12% very satisfied, though 2.92% are very dissatisfied and 14.59% dissatisfied. Satisfaction with sex life is similarly positive, with 42.18% satisfied and 10.61% very satisfied, while 4.77% are very dissatisfied and 9.81% dissatisfied. Support from friends is also well-regarded, with 41.64% satisfied and 19.36% very satisfied. However, 5.84% are very dissatisfied and 10.34% are dissatisfied with the support they receive.

Table 3.4. Social relationships domain.

Items	Very dissatisfied n (%)	Dissatisfied n (%)	Neither satisfied nor dissatisfied n (%)	Satisfied n (%)	Very satisfied n (%)	M	SD
20. How satisfied are you with your personal relationships?	11 (2.92%)	55 (14.59%)	106 (28.12%)	148 (39.26 %)	57 (15.12%)		

21. How satisfied are you with your sex life?	18 (4.77%)	37 (9.81%)	123 (32.63%)	159 (42.18 %)	40 (10.61%)		
22. How satisfied are you with the support you get from your friends?	22 (5.84%)	39 (10.34%)	86 (22.81%)	157 (41.64 %)	73 (19.36%)		
Overall						62. 67	20. 993

The results from Table 3.5 shed light on various aspects of individuals' perceptions within the environment domain. Overall, the average environment transformed scale score indicates a moderate level of satisfaction across the surveyed population (M = 58.05, SD = 18.028). When asked about safety in daily life, a majority (71.26%) reported feeling either very much or extremely safe, while concerns about physical environment health were more evenly distributed, with 51.99% indicating their environment is very much or extremely healthy. However, financial security emerges as a significant issue, with only 29.44% reporting having enough money to meet their needs moderately, mostly, or completely. Access to information and leisure opportunities show moderate satisfaction levels, with 57.91% reporting moderate to complete access to needed information and 64.99% indicating at least moderate opportunities for leisure activities. Satisfaction with living conditions is relatively high, with 54.64% reporting satisfaction or higher, while satisfaction with access to health services and transportation is even higher, with 65.25% and 56.96% expressing satisfaction or higher, respectively.

Table 3.5. Environment domain.

Items	Not al all n (%)	A little n (%)	A moderat e amount n (%)	Very much n (%)	An extreme amount n (%)	M	SD
8. How safe do you feel in your daily life?	25 (6.63%)	99 (26.26%)	98 (25.99%)	113 (29.97 %)	42 (11.14%)		
9. How healthy is your physical	34 (9.02%	44 (11.67%	103 (27.32%	132 (35.01	64 (16.98%		

environment?	)	)	)	%)	)		
Items	Not al all n (%)	A little n (%)	Moderately n (%)	Mostly n (%)	Completely n (%)	M	SD
12. Have you enough money to meet your needs?	38 (10.08 %)	140 (37.14%)	88 (23.34%)	72 (19.10 %)	39 (10.34%)		
13. How available to you is the information that you need in your day-to-day life?	25 (6.63%)	96 (25.46%)	114 (30.24%)	98 (25.99 %)	44 (11.67%)		
14. To what extent do you have the opportunity for leisure activities?	18 (4.77%)	119 (31.56%)	93 (24.67%)	107 (28.38 %)	40 (10.61%)		
Items	Very dissatisfied n (%)	Dissatisfied n (%)	Neither satisfied nor dissatisfied n (%)	Satisfied n (%)	Very satisfied n (%)	M	SD
23. How satisfied are you with the conditions of your living place?	22 (5.84%)	43 (11.41%)	106 (28.12%)	160 (42.44 %)	46 (12.20%)		
24. How satisfied are you with your access to health services?	19 (5.04%)	53 (14.06%)	59 (15.65%)	192 (50.93 %)	54 (14.32%)		
25. How satisfied are you with your	26 (6.90%)	39 (10.34%)	101 (26.79%)	153 (40.58 %)	58 (15.38%)		

transport?							
Overall						58.05	18.028

The correlation analysis between Quality of life (QoL) and type II diabetes (DM II) management outcomes reveals several significant associations. Notably, treatment adherence showed a negative correlation with glycemic control ($r = -0.14$, $p < 0.01$), suggesting that higher levels of treatment adherence were associated with lowering blood sugar levels. Complication prevention demonstrated a weak positive correlation with glycemic control ($r = 0.10$, $p < 0.05$), indicating an increase in blood sugar levels for as control for blood sugar levels gets very poorly controlled. A weak negative correlation is also seen for complication prevention and treatment adherence ($r=-0.18$, $p < 0.01$), suggesting that higher levels of treatment adherence were associated with very good control of blood sugar.

Physical health shows a significant negative correlation with glycemic control ($r = -0.06$, insignificant p-value), complication prevention ($r = -0.48$, $p < 0.01$) and a weak positive correlation with treatment adherence ($r = 0.09$, insignificant p-value). This indicates that individuals with better physical health tend to lower blood sugar levels, associated with a very good control of blood sugar, and a high treatment adherence. Overall quality of life and general health score shows a significant negative correlation with glycemic control ($r = -0.04$, insignificant p-value), complication prevention ($r = -0.49$, $p < 0.01$) and a weak positive correlation with treatment adherence ($r = 0.05$, insignificant p-value). This indicates that individuals with better overall quality of life and general healths core tend to lower blood sugar levels, associated with a very good control of blood sugar, and a high treatment adherence.

Psychological scores shows a significant negative correlation with complication control ($r = -0.51$, $p < 0.01$) and a weak positive correlation with treatment adherence ($r = 0.09$, insignificant p-value) and glycemic control ($r = 0.0003$, insignificant p-value). This indicates that individuals with better psychological scores is associated with a very good control of blood sugar. Social relations demonstrate a weak negative correlation with complication prevention ($r = -0.14$, $p < 0.01$) and with treatment adherence ($r = -0.12$, $p < 0.05$). Similarly, environmental factors exhibit a moderate negative correlation with complication prevention ($r = -0.28$, $p < 0.01$) and with treatment adherence ($r = -0.14$, $p < 0.05$).

Table 4. Correlation analysis between Quality of life and DM II management outcomes.

	n	M	SD	1	2	3	4	5	6	7
1. Glycemic control	377	11.04	3.633	-						

2. Treatment adherence	377	37.42	6.985	-0.14**	-					
3. Complication prevention[a]	377	-	-	0.10*	-0.18**	-				
4. Overall QoL	377	5.52	1.122	-0.04	0.05	-0.49**	-			
5. Physical health	377	46.80	17.355	-0.06	0.09	-0.48**	0.61**	-		
6. Psychological	377	45.80	21.562	0.00003	0.09	-0.51**	0.76**	0.77**	-	
7. Social relations	377	62.67	20.993	-0.06	-0.12*	-0.14**	0.44**	0.40**	0.43**	-
8. Environment	377	58.05	18.028	-0.01	-0.14**	-0.28**	0.65**	0.54**	0.62**	0.65**

*p<0.05, **p<0.01, [a]Spearman correlation coefficient
1 Glycemic control, 2 Treatment adherence, 3 Complication prevention, 4 Overall Quality of Life, 5 Physical health, 6 Psychological, 7 Social relations, 8 Environment

DISCUSSION

Among all 377 T2DM patients in this survey, there were more males than females; the average age was 64.43±11.21 years, and most were over 60 years old. With the rapid development of my country's aging population, the number of elderly patients with diabetes has increased year by year(Huang et al., 2018). In terms of occupation, farmers and workers accounted for the majority; marital status was mostly married (288 cases, 76.39%); in terms of education level, most were high school, technical secondary school or below. Among all the subjects, the average duration of complications was 5.08±4.61 years; most patients had complications, and most had only one complication.

Rose et al. believed that the evaluation criteria for the effect of diabetes treatment include good blood sugar control and improvement of the patient's quality of life. They believed that in the diagnosis and treatment of diabetic patients, attention should not only be paid to blood sugar, but also to the patient's quality of life, so that their lives are as constrained as possible (Rose et al., 2002). Therefore, in addition to biological indicators, the

evaluation of the effect of diabetes treatment should also include the evaluation of quality of life. Quality of life is a set of indicators proposed in the context of the renewal of the medical model to comprehensively measure human health. It is a comprehensive indicator for comprehensively evaluating the individual's physiological, psychological, social functions and material living conditions, and represents the measurement trend of modern health (Fan et al., 1996). It is a multidimensional concept, and its measurement content includes: physiological, psychological state, social relations, environment, spirit, etc. (WHOQol Group, 1994). Quality of life has become an internationally accepted health evaluation method and is widely used in various fields of medical research.

Quality of life evaluation can provide doctors with comprehensive information from the patient's physiological, psychological, social adaptation and other aspects, quantitatively evaluate the impact of the disease on the patient's health, find its possible influencing factors, and thus take targeted intervention measures. With the research on quality of life, a variety of quality of life assessment scales have been produced at home and abroad, such as the Nottingham Health Scale (NHP), the Comprehensive Quality of Life Questionnaire (GQOL I-74), etc. This study uses the World Health Organization Quality of Life Questionnaire (WHOQOL-100). By using this scale, we can have a deeper understanding of the quality of life of patients with type 2 diabetes, thereby providing a strong basis for improving their quality of life.

This study showed that the average score of the overall quality of life and overall health status of diabetic patients was 5.52, the average conversion scale score of the physical health dimension was 46.8, the score of the psychological dimension was 45.8, the average score of the social relationship dimension was 62.67, and the environmental score was 58.05. Among these four dimensions, the physical health dimension and psychological dimension scores of diabetic patients were low, and the social relationship dimension score was high, which is contrary to the research results of Chen Ailing (Chen et al., 2006). This may be related to the older average age of the subjects in this study and the fact that the publicity of chronic diseases in my country's health care in recent years has improved the public's awareness of the disease. As the disease progresses, patients with type 2 diabetes gradually develop organ damage, namely diabetic retinopathy, nephropathy, neuropathy, etc., which have a greater impact on physical function. At work, we should strengthen the guidance of the behavior of diabetic patients in their lives, encourage their families to actively support and actively participate in the patients' daily lives and disease treatment, and improve the patients' sense of belonging, security and confidence in outpatient continuity treatment.

Diabetes is a long-term chronic disease, and its blood sugar control depends largely on the patient's own understanding of the risk of the disease and the disease control measures taken, as well as how the patient should cooperate with the doctor's treatment. Mastering more diabetes-related knowledge is of great benefit to blood sugar control. The results of this study showed that the treatment compliance level of patients with type 2 diabetes was basically at a medium level, which was higher than the reported data of similar studies in China (Liu et al., 2020; Yu, 2018; Chang, 2018), and most patients had a more serious non-compliance phenomenon. However, patients deviated from the

specific treatment methods. This may also be related to the compliance scale used in this study. Patients with type 2 diabetes need long-term or even lifelong medication to control blood sugar, but long-term medication will not only bring them a greater economic and psychological burden, but also affect the patient's treatment compliance. The average treatment compliance score was 37.42, and medication compliance was higher than other compliance in all dimensions, which may be related to the traditional medical thinking of the Chinese population (Li, & Cai, 2004). It can be seen that patients with type 2 diabetes pay slightly more attention to drug treatment and diet control than exercise therapy, blood sugar monitoring and regular review. The level of compliance directly affects the treatment effect, and medication compliance is one of the key factors affecting the effect of blood sugar control (Li, & Cai, 2004). Therefore, during hospitalization, diabetes education should be strengthened for diabetic patients, and patients should be encouraged to actively participate in various educational activities, such as diabetes education lectures. Emphasizing the importance of persisting in exercise and regular review for disease treatment, and providing one-to-one guidance when discharged from the hospital are all important measures to improve the treatment compliance of diabetic patients. Scientific management of type 2 diabetes not only increases the survival of patients, but also greatly reduces complications such as blindness, disability, cognitive impairment, etc., and improves the quality of life of patients.

Complications and comorbidities are important factors affecting the quality of life of patients with type 2 diabetes. The number of complications and comorbidities is significantly correlated with the decline in patients' quality of life. The greater the number of complications and comorbidities, the lower the quality of life (Liang et al., 2014). Among them, combined cardiovascular disease significantly affects the quality of life of patients with type 2 diabetes (Wang et al., 2015). Surveys show that the quality of life of type 2 diabetes patients with cardiovascular disease is significantly lower than that of patients without cardiovascular disease complications (Liu et al., 2016). This is consistent with the results of this study. The gradual progression of diabetes can have an impact on large blood vessels and capillaries. If it is combined with cardiovascular disease, it will accelerate the occurrence of complications of type 2 diabetes. The affected areas include cardiovascular, peripheral nerves, brain, and eyes. Multiple systems or tissues such as the retina, renal microvessels, and feet increase the mortality or disability rate of diabetic patients. Because the complications of diabetes are mostly chronic diseases such as kidney disease, eye disease, and foot disease, the course of the disease is long, the prognosis is poor, and the cost of long-term treatment is high. While the physical functions of type 2 diabetes patients are damaged, their mental state and mental state are also affected. Social functioning can also have serious adverse effects. In addition, if diabetes is not treated properly, some acute complications may occur, such as diabetic ketoacidosis or hyperosmolar nonketotic diabetic coma. Severe acute complications can endanger the patient's life. Therefore, actively controlling and delaying the progression of the primary disease in patients with type 2 diabetes and reducing the probability of

complications and comorbidities are important measures to improve the health of patients with type 2 diabetes.

At present, with the improvement of people's living standards, the aging of society and the change of lifestyle, the incidence of diabetes is gradually increasing ("Guidelines for the Prevention and Treatment of Type 2 Diabetes in China (2017 Edition)", 2018). Diabetes is one of the most common chronic endocrine diseases in the world, which can lead to many short - and long-term adverse outcomes. Diabetic patients have long-term high blood sugar and metabolic disorders, which lead to dysfunction of multiple organs and tissues such as kidneys, blood vessels, nerves, and eyes. As the course of the disease progresses, various complications or complications appear, and their treatment plans become more and more complicated. Although the research on the treatment of diabetes has been continuously deepened for decades, there is still no radical treatment drug. Diabetic patients have been receiving long-term combined treatment of multiple drugs in their lives, and the torture of the disease itself brings great physical and psychological burdens to patients, which seriously affects the quality of life of diabetic patients (Zhang et al., 2018). These complications reduce the quality of life of diabetic patients, aggravate negative emotions, and thus affect treatment compliance, leading to poor control of blood sugar levels. At present, there are about 114 million adult (20-79 years old) diabetics in my country, making it the country with the largest number of diabetics in the world. This means that at least one in every 10 adults is a diabetic. Therefore, the health impact and social medical burden of diabetes cannot be underestimated. Accordingly, it is important to find out the factors that affect the quality of life of patients with type 2 diabetes.

Quality of life refers to an individual's perception of their physical, emotional and social status (Dickerson, F et al., 2011; Rubin, R.R, et al., 1999). For patients with chronic diabetes, the possibility of complete cure is low. Elderly patients with type 2 diabetes have greater treatment pressure and lower quality of life than healthy people (Neumann, A et al., 2014; Donald, M et al., 2013). In addition, many factors can affect the quality of life of patients. Therefore, understanding and identifying the predictive factors and risk factors of life in patients with type 2 diabetes is of great significance for controlling and delaying the progression of diabetes and preventing the deterioration of the health status and quality of life of diabetic patients. Type 2 diabetes is a chronic metabolic disease, and its occurrence, development and prognosis are closely related to the results of disease management. In this study, the disease management status and quality of life were first evaluated, and the impact of disease management and other factors on quality of life was preliminarily analysed.

Studies have shown that patients with poor self-management levels are associated with more bad behaviors, which can easily affect treatment compliance, increase the risk of complications, aggravate the condition, and affect the patient's quality of life (Ji et al., 2014). It is speculated that the self-management level of patients with T2DM may be related to the quality of life. The results of this study show that overall quality of life and overall health scores are significantly negatively correlated with blood sugar control ($r = -0.04$, p value is not significant), complication prevention ($r = -0.49$, $p < 0.01$), and with

treatment compliance There is a weak positive correlation (r = 0.05, p value is not significant). The reason is that diabetic patients with poor disease management often lack health awareness and are often accompanied by fear and avoidance when facing the disease, which in turn aggravates negative emotions, affects treatment compliance, affects recovery, and reduces quality of life. Cao et al. (2017) studied that poor disease management of diabetic patients is often accompanied by a variety of bad habits, such as lack of healthy diet, poor medication compliance, lack of disease awareness, etc., which can affect treatment compliance. sex, delaying disease recovery, increasing the risk of adverse events, aggravating the condition, and ultimately affecting their quality of life (Ni et al., 2017). In addition, patients with poor disease management levels lack awareness of the disease, are unable to recognize the harm the disease brings to their health, have difficulty making healthy behavioural changes, and have poor enthusiasm for treatment, which in turn leads to continued aggravation of the disease and increases the difficulty of treatment. Affect patients' quality of life (Zhao et al., 2017). Previous studies reported that nearly 88.5% of Chinese patients with diabetes failed to achieve blood glucose control (Yang et al., 2020). T2DM patients perform poorly in blood glucose monitoring, which seriously affects their ability to control the disease and respond to emergencies, and affects the patient's quality of life. Good disease management behaviors can affect the blood sugar control level of diabetic patients. Patients can correctly manage their disease and have enough confidence to achieve disease management goals, which is extremely important for improving their quality of life (Ji et al., 2014; Xia et al., 2022). Studies such as Huang Jin (Huang et al., 2013) and Sun Shengnan (Sun et al., 2013) also pointed out that strengthening diabetes education and improving patients' diabetes management knowledge and skills can improve patients' disease management behaviors, thereby improving the quality of diabetes patients. Quality of life level. Therefore, for patients with type 2 diabetes, health education and psychological intervention should be strengthened during treatment to improve the patient's emotional state and self-management level, so as to promote the disease outcome and improve the patient's quality of life.

Conclusions

This study confirms that quality of life in patients with type 2 diabetes is indeed significantly related to patient disease management outcomes, specifically in terms of glycemic control and complication prevention in patients with type 2 diabetes, as a result of treatment adherence scores. . Correlation analysis is mainly used to explore the relationship between disease management outcomes and health-related quality of life in patients with type 2 diabetes.

In terms of diabetes disease management, 97.88% of the respondents were initially diagnosed with diabetes. Most of the respondents used fasting blood glucose as the last way to measure blood glucose. In terms of treatment compliance, the average score was low, which indicates the impact of type 2 Regarding the quality of life of diabetic patients, a considerable number of respondents use medications to control blood sugar, but this also indicates that blood sugar control is not good.In terms of quality of life, respondents rated their happiness as low. The area with the highest scores was the social relationships

domain. The area with the lowest scores was the psychological domain. Specifically, in the psychological domain, the emotional state and self-satisfaction of the respondents are key factors to pay attention to because they elicit negative reactions.In terms of the association of variables with quality of life, patients with poorer glycemic control had lower QOL scores. The psychological domain score was related to complication prevention, and the environmental domain score was affected by diabetes complications and treatment compliance, as those with complications and poor treatment compliance had the lowest scores.

In order to correctly interpret the results of this study, some limitations should be acknowledged. Due to the limited sample size, the study results may deviate from reality. This study is a correlational study that only explores the relationship between type 2 diabetes and patients' quality of life, so it cannot directly improve patients' quality of life. This study also has certain limitations. If the impact of disease management level on the long-term prognosis of patients with type 2 diabetes was not observed, more in-depth research on patients with type 2 diabetes is still needed in the future, focusing on analysing the impact of disease management level on the long-term prognosis of patients with type 2 diabetes. improvement effect.

Recommendations

According to the study's conclusions, glycemic control and complication prevention are important factors in improving the quality of life of patients with type 2 diabetes. Therefore, we should pay more attention to patients with type 2 diabetes, control their blood sugar levels, and delay the occurrence and development of complications, so as to improve the quality of life. Based on the above conclusions, the recommendations are put forward:

(1) Strengthen blood sugar monitoring. Strengthen multi-point blood sugar monitoring on fasting and two hours after meals, with special focus on blood sugar levels during the period of adjusting medications or switching to insulin, to fully understand blood sugar control.
(2) Pay attention to mental health. Use non-invasive and economical scales to screen for anxiety and depression in diabetic patients; provide psychological counselling to patients with these conditions, and at the same time provide patients with more care and improve negative emotions.
(3) Pay attention to health education. Strengthen the standardised diagnosis and treatment training of diabetes for medical staff, especially for grassroots medical staff, continuously improve the quality of health education for diabetic patients, improve patient satisfaction, prevent the occurrence and development of complications, and improve patients' disease management levels, thereby helping patients improve their Quality of Life.

Compliance with Ethical Standards

The researchers got an ethical clearance from the Ethics Review Committee and Institutional Review Board.The researchers informed consent from participants by

disclosing information regarding the study before they made an informed decision, facilitating understanding and promoting their voluntariness. The participants proceed to answer the survey once they agree and sign the informed consent. Participants can freely withdraw from the study without any questions and potential loss of any benefits. The data is electronically stored and protected and does not include the name of the participants which means there is no way that data analysis can be traced back to the participants. The data was accessed by the research team for data analysis and stored as a computer file a year after publication for reference and will then be deleted. Data and statistics will be published for public access.

The researchers do not see any conflicts of interest in this work. Plagiarism was strictly avoided, there was no bias in the interpretation of the findings and that the results were used purely for research. The authors would also like to declare that this research was not funded and conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest and was purely research in nature.

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DEVELOPMENT AND ACCEPTABILITY OF A MULTI-PURPOSE DRAFTING TABLE

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ABSTRACT

This research project aimed to develop and evaluate the acceptability of a multi-purpose drafting table. The Project Development Method (PDM) was employed to conceptualize the design and specifications, followed by construction and assembly. A descriptive-evaluative research design was utilized to evaluate the table's design, construction, functionality, comfort, durability, safety, and instructional applicability. Data was collected through questionnaires, interviews, and observations from industry experts, TVE teachers, and senior/junior drafting students. The results indicated that the multi-purpose drafting table received high acceptability ratings across all criteria, deemed "very good" in design and construction, "very functional," "very comfortable," "very durable," and "very safe." ANOVA analysis revealed significant differences in the evaluations of the three groups of respondents regarding functionality, comfort, durability, and safety, highlighting varying needs and preferences. The study concludes that the multi-purpose drafting table is a highly accepted project with potential for mass production and income generation. Recommendations include incorporating more features, utilizing high-quality materials, and exploring unique designs to enhance its overall functionality and user experience.

Keywords: *Multi-purpose Drafting Table, Instructional Applicability, Project Development Method, Industry Experts, Functionality*

INTRODUCTION

The primary objective of the teaching and learning process is to facilitate significant behavioral changes through active participation and critical thinking of the learner. This transformation is heavily dependent on the availability and proper use of school facilities, equipment, and other necessary resources (Turano, 2005). For classroom instruction to be effective, the classroom environment, particularly its physical aspects including fixtures and facilities, must enable students to perform at their highest potential (Landau, 2004; Stewart et al., 1997).

The physical environment is the foundation for creating an orderly setting conducive to learning (Stewart et al., 1997). Crafting this environment involves selecting and arranging furniture, organizing seating to facilitate learning, and ensuring materials, tools, and areas are accessible. Studies have shown that the classroom's physical environment directly impacts teachers' and students' behavior and thought processes (Marzano & Marzano, 2003).

Furniture plays a crucial role in the physical environment, shaping traffic patterns and ensuring materials are easily accessible to students (Landau, 2004). Proper furniture arrangement can foster a cooperative working environment, enhancing student interactions and allowing activities to proceed without interruption (Stewart et al., 1997). School facilities, including equipment, furniture, and instructional materials, are pivotal for the smooth operation of the teaching and learning process. They enable teachers to accomplish their tasks effectively and help students learn and achieve their fullest potential (Marzano & Marzano, 2003).

However, many schools in the Philippines face a shortage of instructional equipment and materials. In Technical Vocational Schools, for instance, shop work is challenging for both students and teachers due to a lack of materials and equipment (Salandanan, 2008). In Drafting shops, students struggle with their drawing tables. Maintaining a clean, smooth surface for drawing, painting, and other exercises is crucial, but existing tables are often worn out and gritty (Ramos, 2010).

Moreover, students frequently need to move to different rooms for AutoCAD drawing, which is stressful and time-consuming. The lack of ventilation in these areas further adds to the discomfort (Torres, 2012). This highlights the need for an innovative solution: the "Multi-Purpose Drafting Table." This table addresses these issues and offers versatility for various tasks such as drawing, sketching, cutting, tracing, painting, writing, silk screening, T-shirt printing, and architectural drawing using Computer-Aided Design (CAD).

The proposed Multi-Purpose Drafting Table features a transparent tempered glass surface for smoothness and easy cleaning, an adjustable top that can incline between 15 to 80 degrees, a built-in computer set, an electric fan, a clip table lamp, and a fluorescent tube for silk screening. It is also movable for easy transfer. This table is particularly

beneficial for Drafting students in Technical Vocational schools, as well as for home and office use, providing a comfortable workspace (Fernandez, 2015).

This project exemplifies Filipino inventiveness in constructing and innovating a multi-purpose drafting table suitable for Drafting, CAD, and Technical Drawing. It fosters a partnership between the academe and draftsmen, aiming to create high-quality devices for classroom instruction and laboratory classes. Administrators and curriculum planners should recognize vocational and technical programs that meet societal demands for CAD expertise (Garcia, 2013). Strengthening the relationship between industry and academe is crucial for economic development (Pascua, 2018).

This study encourages innovation for teachers in creating homemade multipurpose equipment for shops and laboratory sessions. This project can also serve as baseline data for future researchers in their inventive endeavors (Santos, 2016).

Given these potential benefits, this study aims to develop, design, and evaluate a multi-purpose drafting table.

Research Questions

The main purpose of this research study was to design, construct, and evaluate the acceptability of a *Multi-purpose Drafting Table* to help address the problem of inadequate instructional tools and equipment at Reina Mercedes Vocational and Industrial School, specifically in Drafting Technology.

Specifically, this study sought answers to the following questions:

1. What is the process involved in the design and construction of the proposed Multi-purpose Drafting Table?
2. What is the level of acceptability of the Multi-purpose Drafting Table as evaluated by Industry Experts, Technical Vocational Education (TVE) Teachers, and Senior and Junior Drafting students, in terms of:
   a. Design and construction;
   b. Functionality;
   c. Comfort;
   d. Durability;
   e. Safety; and
   f. Instructional applicability?
3. Is there a significant difference in the evaluation of the three groups of respondents as to the acceptability of the Multi-purpose Drafting Table?
4. What further improvements can be made to the developed Multi-purpose Drafting Table?

METHODOLOGY

Method of Research Used

This research used the Project Development Method (PDM) whereby the design and specifications of the Multi-purpose Drafting Table were conceptualized. PDM aims to give students theoretical and practical knowledge on how to make projects by following appropriate steps in consonance with the research development process, i.e., from the research design to the research finalization.

The multi-purpose drawing table was constructed and assembled in conformity with the design. Then, revisions were made for any defect, and the table was reassembled until it was found to be functional and acceptable.

Furthermore, the descriptive-evaluative research design was applied to evaluate the equipment along design and construction of the multi-purpose drafting table. The main data-gathering instrument used was a set of questionnaire checklists supplemented by unstructured interviews and observation.

Source of Data

A total of seventy (70) respondents were included in the study composed of ten (10) industry experts from business firms and schools such as architects, draftsmen, civil engineers, and innovators. Likewise, the twenty (20) Technical Vocational Education (TVE) teachers and forty (40) senior and junior drafting students from the Reina Mercedes Vocational and Industrial School were included as respondents of the study. On the other hand, the purposive sampling technique was used to get the necessary data for the evaluation.

Data Gathering Instruments

The modified instrument taken from Mr. Manuel E. Ruma of Isabela State University Cauayan Campus consisted of the following criteria for evaluating the acceptability of the developed project in terms of *design and construction*, *functionality*, *and safety.*

The data needed were gathered through the administered and retrieved questionnaire checklist from the respondents.

Data-Gathering Procedure

Permission to conduct the study was requested from the office of the Principal, Industry Experts, TVE Teachers, and Junior and Senior Drafting students of Reina Mercedes, Vocational and Industrial, School, Reina Mercedes, Isabela.

After permission was granted, administration of the questionnaires followed. Directions about the accomplishment of the questionnaires were done individually. Copies of the questionnaire checklist were retrieved after being accomplished by the respondents.

The survey questionnaire checklist was used to gather information about the acceptability of the Drawing table. And the observation method was also applied to determine the whole structure of the project particularly its acceptability to the users.

Statistical Treatment of the Data

The following statistical tools were used to analyze the data that were gathered.

Weighted Mean (WM). This was used to determine the level of acceptability of this newly developed multi-purpose drafting table in terms of its *design and construction*, *functionality*, *comfort*, *durability safety, and instructional applicability* and to interpret the equivalent meaning of the data gathered.

ANOVA (Analysis Of Variance)**.** This was used to determine the significant differences in the responses and evaluation of the respondents in terms of the identified variables. Meanwhile, the five-point Likert's rating scale as seen in Table below was used to determine the descriptive meaning of the indicators of the variables used.

The collected data were tallied and analyzed using the 5-point scale as shown below:

A. Design and Construction

Weight	Mean Range	Qualitative Description
5	4.20 – 5.00	Very Good
4	3.40 – 4.19	Good
3	2.60 – 3.39	Moderately Good
2	1.80 - 2.59	Sometimes Good
1	1.00 – 1.79	Not at all Good

B. Functionality

Weight	Mean Range	Qualitative Description
5	4.20 – 5.00	Very Functional
4	3.40 – 4.19	Functional
3	2.60 – 3.39	Moderately Functional
2	1.80 - 2.59	Sometimes Functional
1	1.00 – 1.79	Not at all Functional

C. Comfort

Weight	Mean Range	Qualitative Description
5	4.20 – 5.00	Very Comfortable
4	3.40 – 4.19	Comfortable
3	2.60 – 3.39	Sometimes Comfortable
2	1.80 - 2.59	Least Comfortable
1	1.00 – 1.79	Not at all Comfortable

D. Durability

Weight	Mean Range	Qualitative Description
5	4.20 – 5.00	Very Durable
4	3.40 – 4.19	Durable
3	2.60 – 3.39	Fairly Durable
2	1.80 - 2.59	Least Durable
1	1.00 – 1.79	Not Durable

E. Safety

Weight	Mean Range	Qualitative Description
5	4.20 – 5.00	Very Safe
4	3.40 – 4.19	Safe
3	2.60 – 3.39	Fairly Safe
2	1.80 - 2.59	Least Safe
1	1.00 – 1.79	Not Safe

F. Instructional Applicability

Weight	Mean Range	Qualitative Description
5	4.20 – 5.00	Very Applicable
4	3.40 – 4.19	Applicable
3	2.60 – 3.39	Fairly Applicable
2	1.80 - 2.59	Least Applicable
1	1.00 – 1.79	Not Applicable

Activities in the Design and Construction of the Multi-Purpose Drafting Table

A. Designing and Layout. The researcher spent some time reading related literature and studies on similar Drafting tables. For the design and layout of the drafting table, the following were taken into consideration:

1. The multi-purpose drafting table should be suited to the students, TVE teachers, and industry expert's level of understanding.
2. It will be constructed using locally and commercially available supplies and materials.
3. It should be manually operated
4. It should have unique and innovative features that make it different from existing drafting tables

B. Construction of the Project. This drafting table was constructed following the procedures below.

1. Prepare and use working drawings (design).
2. Materials preparation.
3. From ¾" thick by 4' x 8' marine plywood and 2" x 2" x 14' hardwood, lay out the desired size and cut the different parts of the Drafting Table using a crosscut saw.
4. Smoothen all straight edges by using a jack plane, with curved edges by the spokeshave.
5. Sandpaper all parts.
6. Assemble and nail the frame and different parts of the drafting table using a claw hammer.
7. Attach the keyboard tray with a drawer slide, a top portion, and the door to the drafting table with the piano hinges using a screwdriver.
8. Attach the back bar or round bar under the top portion of the drafting table with a clamp lock using a screwdriver.
9. Polish drafting table with clear gloss lacquer or with paint using an air compressor.
10. Install all the electrical parts with Cord, PVC wall Molding, safety breaker, Florescent lamp, Snap switch, 4 Gang outlet, electric box fan, and clip table lamp with bulb.
11. Attach the tempered glass on the top portion of the drafting table.

RESULTS AND DISCUSSION

A. Project Presentation



Figure 1. The Multi-Purpose Drafting Table

Description of the Parts and Functions of the Completed Project

1. **Keyboard tray with drawer slide** keeps the mouse, keyboard for closer touch typing, and art materials for painting. The tray is in line with the elbow and hand-rested for comfortable typing and painting.
2. **The top of the Drafting table** is the adjustable top portion from flat to 80 degrees angle /vertical with main work surface dimensions of 48" x 32".It is used for tracing, cutting, photographic silk screen printing, designing, sketching, mechanical, freehand drawing, reading, writing, and so on. It is a Transparent Tempered Glass.
3. **Adjustable back used** to adjust the inclination of the top portion of the drafting table into flat to 80-degree angles/ vertical. It is a 9mm galvanized iron bar.
4. **Lightings**- used for tracing and photographic silk screen printing and it can be used according to situation and condition. There are two types of lighting, the clip table lamp and the light-emitting-diode fluorescent lamp.
5. **Storage of built-in computer set**- the computer storage is directed to the users, easy to open and close, and well secured. It is used for computer-aided design operation and encoding.
6. **Electric fan for** better ventilation purposes. It is directed to the users.
7. **Padded footrest to** keep the feet flat, slightly under the table.
8. **Build in pencil groove-**serve as a stopper for pencil, triangles, pen, and other drawing tools and materials.
9. **Electrical Part-** with Cord, PVC wall Molding, safety breaker, Florescent lamp, Snap switch, 4 Gang outlet, electric box fan, and clip table lamp with bulb. Used to operate and manipulate the different parts and functions of the drafting table.

10. **Ball Caster**-serve as a table wheel, so that the drafting table is easy to maneuver and transfer.

Uses of the Multi-Purpose Drafting Table

1. **Tracing** – Tracing paper and drawing paper (Architectural layout and detail drawing)
2. **Prepare and operate Computer-Aided-Design (CAD)** - Architectural layout and detail
3. **Painting** – using Canvas painting
4. **Photographic silk screen printing or process** – T-shirt Printing
5. **Cutting** – using paper, cardboard, illustration board, styrofoam, and drafting cutter. (Letters cutting and pattern development)
6. **Mechanical Drawing** – isometric, orthographic and other axonometric drawing
7. **Freehand Drawing** – lettering on the title block and another freehand drawing
8. **Office Works**- Writing, reading, and encoding.
9. **Others**- Sketching, blueprint reading, and so on.

Evaluation of the Project

Table 1. Level of Acceptability of the Multi-Purpose Drafting Table as Evaluated by Industry Experts, Technical Vocational Education (TVE) Teachers, and Senior and Junior Drafting Students in terms of Design and Construction

A. Design and Construction Indicators	Industry Experts Mean	Q D	TVE-Teachers' Mean	Q D	Seniors & Junior-Students' Mean	Q D
1. The overall look of the design and construction of the Multi-Purpose Drafting Table	4.7	VG	4.95	VG	4.9	VG
2. The components and parts of the Multi-Purpose Drafting Table	4.8	VG	4.9	VG	4.85	VG
3. The uniqueness of the design and construction of the Multi-Purpose Drafting Table	4.6	VG	4.9	VG	4.85	VG
4. The flexibility of the Multi-Purpose Drafting Table	4.8	VG	4.8	VG	4.8	VG
5. The electrical components of the Multi-Purpose Drafting Table	4.8	VG	4.75	VG	4.88	VG
Overall Weighted Mean	4.74	VG	4.86	VG	4.85	VG

As can be seen in the table above, the computed overall mean of the industry experts is 4.74, 4.86 for the TVE teachers, and 4.85 for the junior and senior drafting

students. On the whole, the three groups of respondents rated the multi-purpose drafting table as "*very good*". This shows that the overall appearance of the drafting table is attractive. The respondents appreciated how the project was designed and constructed.

In support of the above finding, Ombos (2015) concluded in his study on furniture and cabinet making and fabrication that properly designed and constructed furniture is presentable and good-looking.

Table 2. Level of Acceptability of the Multi-Purpose Drafting Table as Evaluated by Industry Experts, Technical Vocational Education (TVE) Teachers, and Senior and Junior Drafting Students in terms of Functionality

B. Functionality Indicators	Industry Experts Mean	Q D	TVE-Teachers' Mean	Q D	Junior & Senior - Students Mean	Q D
1. The design of the Multi-Purpose Drafting Table is effective as intended for shop plates and exercises.	4.9	VF	4.9	VF	4.9	VF
2. The Multi-Purpose Drafting Table can perform other related activities and operations for students' use, properly.	4.5	VF	4.85	VF	4.80	VF
3. The overall performance of the Multi-Purpose Drafting Table in all its intended use for different activities	4.6	VF	4.65	VF	4.68	VF
4. The developed Multi-Purpose Drafting Table is serving its purpose efficiently and effectively.	4.8	VF	4.85	VF	4.85	VF
5. The different parts of the Multi-Purpose Drafting Table are working properly in their specific desired function.	4.9	VF	4.9	VF	4.9	VF
Overall Weighted Mean	4.74	VF	4.83	VF	4.83	VF

As to the level of acceptability of the multi-purpose drafting table, the industry experts gave an overall weighted mean of 4.74. Meanwhile, the TVE teachers and junior and senior drafting students gave the same overall weighted mean of 4.83 respectively. The ratings given by three groups of respondents yielded a qualitative description of "*very functional*". This shows that the multi-purpose drafting table is very useful and suitable for artwork and other drafting activities.

Meanwhile, Table 4 presents the level of acceptability of the multi-purpose drafting table as evaluated by industry experts, Technical Vocational Education (TVE) teachers, and senior and junior drafting students along comfort.

Table 3. Level of Acceptability of the Multi-Purpose Drafting Table as Evaluated by Industry Experts, Technical Vocational Education (TVE) Teachers, and Senior and Junior Drafting Students in terms of Comfort

C. Comfort Indicators	Industry Experts Mean	Q D	TVE-Teachers' Mean	Q D	Junior & Senior - Students Mean	Q D
1. The adjustable keyboard, mouse, and art tray	4.7	VC	4.95	VC	4.68	VC
2. The height of the Multi-Purpose Drafting Table	4.5	VC	4.95	VC	4.6	VC
3. The position of the top surface (adjustable from flat to 80 degrees angle/vertical)	4.7	VC	4.8	VC	4.7	VC
4. The work surface is by the paper size	4.7	VC	4.9	VC	4.75	VC
5. The desk lamp and fluorescent tube used as a light table	4.7	VC	4.8	VC	4.8	VC
Overall Weighted Mean	4.66	VC	4.88	VC	4.71	VC

As appearing in Table 3, the acceptability level of the multi-purpose drafting table concerning comfortability gained overall weighted means of 4.88, 4.71, and 4.66 as evaluated by TVE teachers, junior and senior drafting students, and industry experts respectively. Generally, the multi-purpose drafting table was found "*very comfortable*". This shows that it is very comfortable to use as it is convenient and relaxing.

Table 4 presents the level of acceptability of the multi-purpose Drafting Table as evaluated by the respondents along with durability.

Table 4. Level of Acceptability of the Multi-Purpose Drafting Table as Evaluated by Industry Experts, Technical Vocational Education (TVE) Teachers, and Senior and Junior Drafting Students in terms of Durability

D. Durability Indicators	Industry Experts Mean	Q D	TVE-Teachers' Mean	Q D	Junior & Senior - Students Mean	Q D
1. The tempered glass surface of the Multi-Purpose Drafting Table	4.6	VD	4.95	VD	4.83	VD

2. The hardwood frame and the parts of the Multi-Purpose Drafting Table	4.9	VD	4.85	VD	4.9	VD
3. The various materials used in making Multi-Purpose Drafting Table	4.6	VD	4.95	VD	4.78	VD
4. The storage shelf for the computer set	4.8	VD	4.9	VD	4.85	VD
5. The adjustable back bar of the Multi-Purpose Drafting Table	4.8	VD	4.95	VD	4.83	VD
Overall Weighted Mean	4.74	VD	4.92	VD	4.84	VD

The table reflects the acceptability level of the multi-purpose drafting table as to durability. The computed overall weighted mean of 4.92 TVE teachers, 4.84 junior and senior drafting students, and 4.74 industry experts yielded a common description of “very durable”.

This implies that the multi-purpose drafting table is strong and long-lasting. It is resilient due to the hardwood used.

Meanwhile, Table 5 gives the level of acceptability of the multi-purpose drafting table as evaluated by industry experts, Technical Vocational Education (TVE) teachers, and senior and junior Drafting students along with safety.

Table 5. Level of Acceptability of the Multi-Purpose Drafting Table as Evaluated by Industry Experts, Technical Vocational Education (TVE) Teachers, and Senior and Junior Drafting Students in terms of Safety

E. Safety Indicators	Industry Experts Mean	Q D	TVE-Teachers’ Mean	Q D	Junior & Senior - Students Mean	Q D
1. The Multi-Purpose Drafting Table is safe to use and user-friendly	4.9	VS	4.95	VS	4.75	VS
2. The safety condition of the parts and components of the Multi-Purpose Drafting Table	4.9	VS	4.9	VS	4.6	VS
3. The installed electrical components of the Multi-Purpose Drafting Table	4.8	VS	4.85	VS	4.68	VS
4. The various materials used in making Multi-Purpose Drafting Table	4.8	VS	4.85	VS	4.78	VS
5. The working edge of the Multi-Purpose Drafting Table	4.9	VS	4.95	VS	4.65	VS

Overall Weighted Mean	4.86	VS	4.9	VS	4.69	VS

As indicated in the table, on safety the multi-purpose drafting table got an overall weighted mean of 4.86 from industry experts and 4.9 TVE teachers while it received a mean average of 4.69 from the junior and senior drafting students. Overall, the multi-purpose drafting table was rated as "*very safe*" to use. This means that the table is safe to use and user-friendly. The major parts and electrical components are properly assembled and safely installed.

Table 6 below presents the level of acceptability of the multi-purpose drafting as regards instructional applicability.

Table 6. Level of Acceptability of the Multi-Purpose Drafting Table as Evaluated by Industry Experts, Technical Vocational Education (TVE) Teachers, and Senior and Junior Drafting Students in terms of Instructional Applicability

F. Instructional Applicability Indicators	Industry Experts Mean	Q D	TVE-Teachers' Mean	Q D	Junior & Senior - Students Mean	Q D
1. The Multi-Purpose Drafting Table can be effective for instructional and shop use	4.9	VA	4.95	VA	4.88	VA
2. The use of a Multi-Purpose Drafting Table for letter cutting, pattern development, painting, mechanical and freehand drawing, sketching, silk screen printing, CAD, and other drafting outputs	4.9	VA	4.95	VA	4.85	VA
3. The use of a Multi-Purpose Drafting Table in general as a normal student desk, for reading, writing, blueprint reading, and other related activities	4.8	VA	4.75	VA	4.8	VA
4. The use of the Multi-Purpose Drafting Table for better following of teaching instructions	4.8	VA	4.95	VA	4.75	VA
5. The operation and manipulation of the Multi-Purpose Drafting Table according to the needed action for each activity	4.9	VA	4.9	VA	4.75	VA
Overall Weighted Mean	4.86	VA	4.9	VA	4.81	VA

As the data indicate, the computed overall weighted means of 4.9, 4.86, and 4.81 from evaluation of industry experts, TVE teachers, and junior and senior drafting students respectively, yielded the corresponding qualitative description "*very applicable*".

This shows that the multi-purpose drafting table is effective for instructional and shopwork use. The drafting table can be used in teaching the proper method of cutting letters, pattern development, painting, mechanical and freehand drawing, sketching, silk screen printing, CAD, and other drafting outputs.

Comparison in the Evaluation of the Three Groups of Respondents as to the Acceptability of the Multi-Purpose Drafting Table

Table 7. Analysis of Variance of Respondents' Evaluations on the Acceptability of the Multi-Purpose Drafting Table in terms of Design and Construction

Source of Variation	df	SS	MS	$F_{computed}$ Value	*Critical* Value (α =5%)	Result	Decision
Between Groups	2	0.05	.025	3.33	3.88	Not Significant	Accept the null hypothesis
Within Groups	12	0.09	.0075				
Total	14	.14					

Note: df – Degrees of freedom SS – Sum of squares MS – Mean of squares
α– Level of Significance Ho – Null hypothesis

Along with design and construction, the F-computed value is 3.33 while the F-critical value is 3.88. At 4 degrees of freedom, the Analysis of Variance (ANOVA) exhibited a non-significant result. This implies that there is no significant difference between the evaluations of the three groups of respondents as to the acceptability of the multi-purpose Drafting table along with design and construction. Hence, the null hypothesis is " *accepted*". This denotes that the three groups of respondents had the same evaluation regarding the design and construction of the multi-purpose drafting table. Furthermore, this is acceptable for them because of its uniqueness, flexibility, design, and construction.

Table 8. Analysis of Variance of Respondents' Evaluations on the Acceptability of the Multi-Purpose Drafting Table in terms of Functionality

Source of Variation	df	SS	MS	$F_{computed}$ Value	*Critical* Value (α =5%)	Result	Decision
Between Groups	2	.17	.085	12.69	3.88	Significant	Reject the Null Hypothesis
Within Groups	12	.08	.0067				

Total	14	.25					

As to the functionality of the multi-purpose Drafting table, the F-computed value is 12.69 much greater than the F-critical value of 3.88. At 4 degrees of freedom, the ANOVA gave a significant result. Meaning, there is a significant difference in the evaluations of the respondents on the acceptability of the Drafting table in terms of functionality. In this case, the null hypothesis is "*rejected*." This implies that the three groups of respondents have different evaluations of the acceptability of its functionality by its purposes, uses, and suitability in their respective activities or works.

Table 9. Analysis of Variance of Respondents' Evaluations on the Acceptability of the Multi-Purpose Drafting Table in Terms of Comfort

Source of Variation	df	SS	MS	$F_{computed}$ Value	*Critical* Value (α =5%)	Result	Decision
Between Groups	2	.133	.665	10.73	3.88	Significant	Reject the Null Hypothesis
Within Groups	12	.074	.0062				
Total	14	.027					

As to the significant difference between the evaluations of the three groups of respondents on the acceptability of the multi-purpose Drafting table along with comfort, the ANOVA exhibited a significant result. This shows that there is a significant difference between the evaluations of the respondents in terms of acceptability along comfort. Hence, the hull hypothesis is "*rejected*". This indicates that the three groups of the respondents have different views in terms of the acceptability along comfort of the multi-purpose drafting table. Therefore, it implies that some of the respondents preferably want to work comfortably based on their height, position, work surface, and lighting on the drafting table for a long period
.

Table 10. Analysis of Variance of Respondents' Evaluations on the Acceptability of the Multi-Purpose Drafting Table in terms of Durability

Source of Variation	df	SS	MS	$F_{computed}$ Value	*Critical* Value (α =5%)	Result	Decision
Between Groups	2	0.081	.0405	6.43	3.88	Significant	Reject the Null Hypothesis
Within Groups	12	0.076	0.0063				
Total	14	.157					

As seen in the Table, the F-computed value of 6.43 is much greater than the F-critical value of 3.88. At 4 degrees of freedom, the ANOVA exhibited a significant result.

This goes to show that there is a significant difference between the evaluations of the respondents on the acceptability of the multi-purpose Drafting table along with its durability. In this case, the null hypothesis is "*rejected*". Thus, the respondents would like to ensure the quality of the drafting table like the storage shelf and various materials so that it will become more useful over a long period.

Table 11. Analysis of Variance of Respondents' Evaluations on the Acceptability of the Multi-Purpose Drafting Table in terms of Safety

Source of Variation	df	SS	MS	$F_{computed}$ Value	*Critical* Value (α =5%)	Result	Decision
Between Groups	2	.14432	.07216	9.05	3.88	Significant	Reject the Null Hypothesis
Within Groups	12	.09568	.00797				
Total	14	.24					

As to the significant difference between the evaluations of the three groups of respondents on the acceptability of the multi-purpose Drafting table along safety, the F-computed value is 9.05 while the F-critical value is 3.88 at a .05 level of significance. Since the F-computed value is much greater than the tabular value, the ANOVA exhibited a significant result. This shows that there is a significant difference between the evaluations of the respondents in terms of acceptability along safety. Hence, the hull hypothesis is "*rejected*". This implies that the respondents have different evaluations in terms of the acceptability along safety of the drafting table. Consequently, this shows that the table should be safer in terms of the safety condition of the parts and installed electrical components.

Table 12. Analysis of Variance of Respondents' Evaluations on the Acceptability of the Multi-Purpose Drafting Table in terms of Instructional Applicability

Source of Variation	Df	SS	MS	$F_{computed}$ Value	*Critical* Value (α =5%)	Result	Decision
Between Groups	2	.02	.01	3.03	3.88	Not Significant	Accept the Null Hypothesis
Within Groups	12	.04	.0033				
Total	14	.24					

Along with instructional applicability, the F-computed value is 3.03 while the F-critical value is 3.88. At 4 degrees of freedom, the Analysis of Variance (ANOVA) exhibited a non-significant result. This means that there is no significant difference between the evaluations of the three groups of

respondents as to the acceptability of the multi-purpose Drafting table along with instructional applicability. Hence, the null hypothesis is "*accepted*".

This implies that the respondents have the same satisfaction in terms of the functionality of the drafting table that could help them in working with their different tasks or activities, especially in effective instructional purposes like painting, letter cutting, pattern development, mechanical and freehand drawing, sketching, silk screen printing and computer-aided design operation and other.

Suggested Improvement Checklist of the Multi-purpose Drafting Table Parts

The following tables present the suggested improvement checklist of the different parts and components of the designed and constructed multi-purpose drafting table.

Table 15 below shows the suggestions of the respondents as to the keyboard of the multi-purpose drafting table.

Table 13. Suggested Improvement Checklist of the Keyboard of the Drafting Table

Indicators	Industry Experts			Teachers			Students			Total		
	F	%	R	F	%	R	F	%	R	F	%	R
1. The keyboard tray should have a hand-rest for comfortable typing	7	70.00	1	5	25.00	1	22	55.00	1	34	48.57	1
2. Size	3	30.00	2	5	25.00	1	11	27.50	3	19	27.14	2
3. The keyboard tray should be closer	1	10.00	3	0	0.00	3	13	32.50	2	14	20.00	3
4. The keyboard tray should be farther	0	0.00	4	1	5.00	2	2	5.00	5	3	4.29	4
5. The keyboard tray should be in line	0	0.00	4	0	0.00	3	3	7.50	4	3	4.29	4

with the elbow												
Total	10	100.00		20	100.00		40	100.00		70	100.00	

As seen in the Table, 48.57% of the respondents suggested that the *"Keyboard tray should have a handrest for comfortable typing."* The respondents have rated this item as the highest having 70% from industry experts, 25% from teachers, and 55 % from students. This denotes that most respondents preferred to work with a comfortable place to rest their wrists while typing on the keyboard to avoid exhaustion.

Meanwhile, Table 16 presents the suggestions of the respondents at the top of the drafting table.

Table 14. Suggested Improvement Checklist at the Top of the Drafting Table

Indicators	Industry Experts			Teachers			Students			Total		
	F	%	R	F	%	R	F	%	R	F	%	R
1. Surface area should be wider	1	10.00	4	3	15.00	1	12	30.00	1	16	22.86	1
2. Change the surface for better maintenance of the top	2	20.00	2	2	10.00	2	10	25.00	2	14	20.00	2
3. The size of the top should fit the size of the paper	3	30.00	1	0	0.00	4	5	12.50	3	8	11.43	3
4. Adjust the Inclination of the top	2	20.00	3	1	5.00	3	4	10.00	4	7	10.00	4
5. Construction material of the top	1	10.00	4	0	0.00	5	3	7.50	5	4	5.71	5
Total	10	100.00		20	100.00		40	100.00		70	100.00	

Based on the above data, 22.86% or a majority of the respondents recommended that the *"surface area of the table be wider."* This was based on the response of 15% from the teachers, 30% from the students, and 10% from the industry experts.

Moreover, 20% of industry experts, 10% of teachers, and 25% of students having a total of 20% suggested the *"change surface for better maintenance of the top."*

This implies that the respondents preferred to work in a wider space for a spacious working area and recommended changing the surface of the top to avoid any markings, scratches, and scattered paints that could stain or damage the top of the table.

Table 15 indicates the suggestions of the respondents as to the adjustable back bar of the drafting table.

Table 15. Suggested Improvement Checklist of the Adjustable Back Bar of the Drafting Table

Indicators	Industry Experts			Teachers			Students			Total		
	F	%	R	F	%	R	F	%	R	F	%	R
1. Rotational adjustment	6	60.00	1	2	10.00	2	20	50.00	1	28	40.00	1
2. Stainless round bar	2	20.00	2	4	20.00	1	8	20.00	2	14	20.00	2
3. Bigger size of round bar	1	10.00	3	1	5.00	3	4	10.00	3	6	8.57	3
4. Smaller size of round bar	0	0.00	4	1	5.00	3	1	2.50	4	2	2.86	4
5. Galvanize Iron round bar	0	0.00	4	0	0.00	4	1	2.50	4	1	1.43	5
Total	10	100.00		20	100.00		40	100.00		70	100.00	

The adjustable back bar should be in a *"rotational adjustment"* as suggested by 60% of the Industry Experts, 50% of the students, and 10% of the teachers. This item was ranked as number one (1) or 40% of the respondents. On the other hand, 20% of the total respondents or the item that was ranked as number two (2) was the back bar should be *"made of the stainless round bar"* as suggested by 20 % of the industry experts, 20 % of teachers and 20% of the students.

This denotes that the majority of the respondents preferred that the adjustable back bar be in a rotational adjustment so that the user will easily adjust the top of the table when needed. Furthermore, it should be made of a stainless round bar for the assurance of its durability and non-rust.

Table 16 presents suggestions of the respondents as to the dimensions of the drafting table.

Table 16. Suggested Improvement Checklist of the Dimensions of the Drafting Table

Indicators	Industry Experts			Teachers			Students			Total		
	F	%	R	F	%	R	F	%	R	F	%	R
1. The table should be wider	3	30.00	1	4	20.00	1	9	22.50	2	16	22.86	1
2. The table should be lower	3	30.00	2	1	5.00	2	10	25.00	1	14	20.00	2
3. The table should be higher	0	0.00	3	0	0.00	4	8	20.00	3	8	11.43	3
4. The table should be longer	0	0.00	4	1	5.00	3	2	5.00	4	3	4.29	4
5. The table should be shorter	0	0.00	5	0	0.00	4	1	2.50	5	1	1.43	5
Total	10	100.00		20	100.00		40	100.00		70	100.00	

As shown in the table, 30% of the industry experts, 20 % of the teachers, and 22.5 % of the students, having a total of 22.86% of the respondents have proposed that the dimensions of the table should be *"wider"*. Similarly, 30% of the industry experts, 5% of the teachers, and 25 % of the students having a total of 20% have recommended that it should be *"lower"*.

This implies that the respondents are more comfortable working with a wider top dimension of the table for them to spread out the other materials that they need while working on the table as well as for their convenience. Moreover, it should be lower to provide versatility and ease of use for the respondents.

The suggestions of the respondents to improve the brightness of lighting for tracing and photographic silk screen printing are presented in Table 17.

Table 17. Suggested Improvement Checklist of the Brightness of Lighting for Tracing and Photographic Silk Screen Printing

Indicators	Industry Experts			Teachers			Students			Total		
	F	%	R	F	%	R	F	%	R	F	%	R
1. Lights' brightness should be adjustable	5	50.00	1	11	55.00	1	23	57.50	1	39	55.71	1
2. Lights should be brighter	1	10.00	3	3	15.00	2	6	15.00	2	10	14.29	2

3. Lights should be dimmer	2	20.00	2	0	0.00	5	5	12.50	3	7	10.00	3
4. Lights should be light-emitting-diode for user-friendliness	1	10.00	3	2	10.00	3	4	10.00	4	7	10.00	3
5. Lights should be light-emitting-diode for economic purposes	1	10.00	3	1	5.00	4	4	10.00	5	6	8.57	4
Total	10	100.00		20	100.00		40	100.00		70	100.00	

As shown in the table, 50% of Industry experts, 55% of teachers, and 57.5% of students having a total of 55.71% have suggested that the "*brightness of the light should be adjustable*". This implies that the user can easily adjust the lighting once he needs a brighter or dimmer light during his/her work on the table. Furthermore, 10% of industry experts, 15% each from the teachers and students with a total of 14.29% proposed that the *"lights should be brighter."* This denotes that some of the respondents preferred to work with brighter lights in favor of photographic silk screen printing. This could be in some instances that the mesh screen is then coated with a layer of light-reactive emulsion, which will harden when developed under bright light.

Table 18 presents the suggested improvement checklist for the storage built-in computer set of the drafting table.

Table 18. Suggested Improvement Checklist of the Storage of built-in computer set

Indicators	Industry Experts			Teachers			Students			Total		
	F	%	R	F	%	R	F	%	R	F	%	R
1. Well-secured		60.00	1	3	15.00	2	15	37.50	1	24	34.29	1
2. The computer storage should be directed to the users	2	20.00	2	4	20.00	1	12	30.00	2	18	25.71	2

3. The computer storage should be bigger	2	20.00	2	3	15.00	2	7	17.50	4	12	17.14	3
4. Easy to open and close	1	10.00	3	1	5.00	3	9	22.50	3	11	15.71	4
5. The computer storage should be smaller	0	0.00	4	0	0.00	4	3	7.50	5	3	4.29	5
Total	**10**	**100.00**		**20**	**100.00**		**40**	**100.00**		**70**	**100.00**	

As seen in the Table, industry experts (60 %), teachers (15 %), and students (37.5%) with a total of 34.29 % suggested that the built-in computer set should *"be secured with lockers"*. This denotes that the computer set must be secured for the safety of the files being saved at the computer and safety storage. Furthermore, The *"computer storage should be directed to the users"* as suggested by 20% of industry partners, 20% of teachers, and 30% of students. This implies easy or direct access to the eyes of the users and proper posture through their work on the computer.

Finally, Table 19 gives the suggested improvement checklist from the respondents as to the ventilation of the multi-purpose drafting table.

Table 19. Suggested Improvement Checklist of the Ventilation

Indicators	Industry Experts			Teachers			Students			Total		
	F	%	R	F	%	R	F	%	R	F	%	R
1. The size of the installed electrical fan should be bigger or should have better ventilation	3	30.00	1	3	15.00	1	19	47.50	1	25	35.71	1
2. Installation of the electric fan should be directed to the user	1	10.00	2	0	0.00	3	9	22.50	2	10	14.29	2
3. Installation of electric fan.	1	10.00	2	3	15.00	1	6	15.00	3	10	14.29	2
4. Location of the electric fan on the table	3	30.00	1	1	5.00	2	5	12.50	4	9	12.86	3
Total	10	100.00		20	100.00		40	100.00		70	100.00	

As shown in the table, 30% of the industry experts, 15% of teachers, and 47.5% of students having a total of 35.71% of the respondents suggested that the *"installed fan should be bigger for better ventilation."* This denotes that the respondents feel more comfortable working with better ventilation.

Conclusions

The creation of the Multi-purpose Drafting Table is made possible through a process. Its design and layout are in accordance with its usefulness and suitability for drafting students, TVE teachers, and industry experts. Local hardwood materials like *Red Lawan* and highly polished marine plywood which are used in making the drafting table are readily available in the market. Based on respondents' testing and evaluation, the multi-purpose drafting table is useful, user-friendly, strong, long-lasting, safe to use, and effective in Drafting Technology instructional activities. Generally, it is a highly accepted project.

Evaluations of the three groups of respondents on the acceptability of the multi-purpose drafting table vary along with functionality, comfort, durability, and safety due to their different perceptions, degrees of specialization, and areas of concern. However, the respondents' common evaluation of the acceptability of the drafting table along with instructional applicability, design, and construction is explained by their satisfaction with the features of the drafting table and its usefulness for instructional purposes. Finally, the respondents' suggestions for some improvements are based on the different parts and components of the developed multi-purpose drafting table.

Recommendations

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

1. More features should be incorporated into the Multi-purpose Drafting Table to be more useful.
2. High-quality materials should be used for the different parts of the table to make it more durable and lasting.
3. More unique and innovative features, design, and layout of the drafting table be done to make the product different from existing other projects.
4. The drafting table should perform other related activities and functions.
5. The height of the drafting table should be adjustable for the user's comfort.
6. The drafting table should be proposed to the school for mass production and income.
7. The electrical parts of the drafting table should be safely and properly installed.
8. The design and functions of the drafting table should be in a wider scope to become more equally functional to the users.
9. The keyboard tray should have a hand-test for comfortable typing.
10. The dimensions of the Drafting Table be wider for a spacious working area.

11. The adjustable back bar should be in rotational adjustment for easy manipulation of the table when it is needed.
12. The light's brightness should be adjustable for other activities.
13. The computer storage should be secured with lockers for the security of the files.
14. The size of the installed electric fan should be bigger for better ventilation.
15. A similar study should be conducted to increase the number of instructional materials in technological areas.

Compliance with Ethical Standards

As the author of this study, I declare my adherence to ethical standards. Informed consent was obtained, and respondents could withdraw at any time. Anonymity was maintained, and their well-being was safeguarded. There were no conflicts of interest, and plagiarism was strictly avoided. I ensured an unbiased interpretation of the findings, and the results were intended solely for research purposes.

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DEVELOPMENT OF ORGANIC VINEGAR USING OREGANO *(Origanum vulgare)*, LEMONGRASS *(Cymbopogon citratus)*, AND GINGER *(Zingiber officinale)*: HEALTH BENEFITS AND ECONOMIC POTENTIAL IN THE PHILIPPINES

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ABSTRACT

This study explored the development and acceptability of organic vinegar made from oregano, lemongrass, and ginger. The production process involved selecting, washing, boiling, fermenting, and bottling each type of vinegar. The study aimed to assess the vinegars' sensory characteristics—sourness, smell, and color. Evaluations from different respondent groups revealed high acceptability across all characteristics, with Lemon Grass vinegar rated the highest for sourness and Oregano vinegar for smell and color. ANOVA results showed no significant differences in acceptability based on age or professional background. Shelf-life analysis indicated that the vinegars maintained their sensory qualities for up to 21 days at normal temperatures without spoilage. The findings suggest these organic vinegars meet high acceptability standards and exhibit good shelf stability. Recommendations include further research on enriched food products, validation of shelf life, and appropriate packaging. Farmers and producers are encouraged to cultivate more oregano, lemongrass, and ginger to benefit economically. This study provides a valuable reference for future research in organic vinegar production.

Keywords: *Organic vinegar, Sensory characteristics, Acceptability, Shelf-life, Oregano, Lemongrass, Ginger*

INTRODUCTION

Vinegar is a widely used sour condiment known for its versatility in culinary applications and household benefits. As a food condiment, it plays a significant role in the food industry, offering both flavor enhancement and preservation properties. Vinegar can be derived from various raw materials, including grains such as sorghum, rice, wheat, and other grains, as well as fruits like grapes and apples. Additionally, vinegar can be fermented from sugar and alcohol, providing a diverse range of sources for its production (Budak et al., 2014).

The production of vinegar involves fermentation processes that yield acetic acid, the primary component responsible for its characteristic sour taste and antimicrobial properties. This acid makes vinegar an effective agent against bacteria, molds, and germs, and it is environmentally safe. Traditional vinegar production utilizes local materials such as sugarcane, bananas, pineapples, and coconuts, undergoing infusion or fermentation to produce the final product (Johnston & Gaas, 2006).

According to Yong et al. (2013), different types of vinegar share common main components: water and acid. Vinegar contains several acids, including acetic, citric, lactic, malic, oxalic, and succinic acids. These nutrients contribute to the total acidity content (TAC), which is closely linked to the quality of vinegar.

Ison (2019) reported that in response to the government's efforts to eliminate "fake" vinegar from the market, the Department of Agriculture (DA) and the Philippine Coconut Authority (PCA) initiated nationwide training for farmers and women's groups. This training focused on producing natural vinegar using agricultural products to address the anticipated supply gap. Vinegar production involves a two-step fermentation process where yeast consumes sugar or starch from a substrate such as fruits, grains, potatoes, or rice, converting it into alcohol. Subsequently, the alcohol undergoes further fermentation in the presence of oxygen and Acetobacter bacteria, producing acetic acid over several weeks or months.

The use of local ingredients like oregano, ginger, and lemongrass in making organic vinegar presents an opportunity for Filipinos to engage in a promising business venture. These ingredients are commonly grown in backyards across the Philippines, making them accessible and sustainable.

Oregano (Origanum vulgare) is known for its medicinal properties, including its use in treating coughs, colds, inflammatory disorders, headaches, and rheumatism. Oregano oil, derived from this herb, is utilized in cooking and as an efficascent oil for relieving muscle and nerve pain. Oregano's bioactive compounds are essential for treating various illnesses and diseases (Agriculture Monthly, 2015). Sakkas and Papadopoulou (2016) highlighted oregano's widespread use as a condiment and its essential oil's antiseptic and antispasmodic effects. Oregano also possesses potent antioxidant properties due to its high thymol and carvacrol content, though its strong smell can limit its use as a food preservative.

Lemongrass (Cymbopogon citratus) is another valuable ingredient. Hasim et al. (2015) found that ethanol extract of lemongrass leaves contains alkaloids, saponins, tannins, flavonoids, phenols, and steroids, which are beneficial for preventing oil oxidation.

Ginger (Zingiber officinale Rosc.) is extensively used worldwide as a spice and traditional herbal medicine. It is employed to manage symptoms such as colds, digestive disorders, rheumatism, neuralgia, colic, and motion sickness. Ginger is also widely used to flavor foods and beverages (Yeh et al., 2014).

Vinegar's diverse applications, including its use as a healthful treatment, cleaner, condiment, preservative, and key cooking ingredient, make it a versatile product. Its therapeutic uses extend to digestive aids, antimicrobial wound dressings, and cough remedies. Today, vinegar is often promoted as a remedy for various ailments, from minor aches to chronic disorders (Johnston & Gaas, 2006).

This study aims to utilize oregano, lemongrass, and ginger in producing organic vinegar, benefiting the people of Quirino Province and Isabela. By promoting the use of popular indigenous herbal elements known for their health benefits, this research seeks to improve local health conditions and support farmers' economic well-being.

Research Questions

This study was conducted to determine the development and acceptability of Oregano, Lemongrass, and Ginger as organic vinegar.

Specifically, it sought to answer the following questions:

1. What are the processes involved in the development of organic vinegar made of oregano, lemongrass, and ginger?
2. What is the level of acceptability of vinegar made of lemongrass, ginger, and oregano in terms of:
   a. sourness
   b. smell; and
   c. color?
3. Is there a significant difference in the level of acceptability of organic vinegar made of oregano, lemongrass, and ginger as evaluated by:
   a. teenagers
   b. adults
   c. faculty and staff
   d. food experts
4. What is the shelf life of organic vinegar made of oregano, lemongrass, and ginger at normal room temperature?

METHODOLOGY

Materials

The following utensils, tools, and ingredients were used in the conduct of the study.

Table 1. Tools and equipment used in the conduct of the study

Preparation Tools	Measuring Tools	Mixing Tools	Cutting Tools	Equipment
Basin	Measuring spoon	Wooden spoon	Knife	Gas Range
Bottle	Measuring Cup	Spoon	Chopping board	
Funnel		Mixing bowl		
Muslin cloth/cotton				
Saucepan				
Strainer				

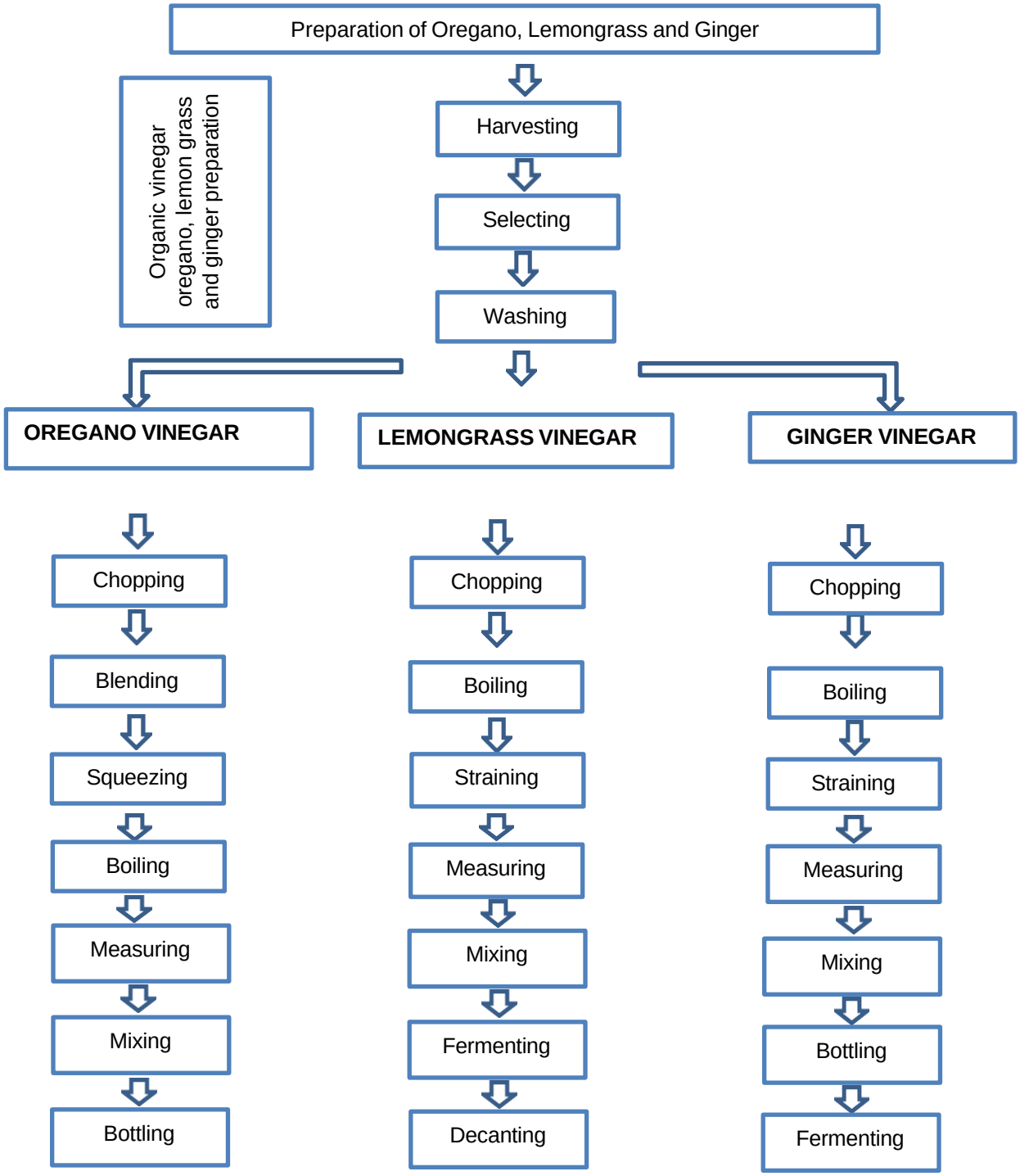
Ingredients

Table 2. Ingredients and measurements used in the preparation of homemade vinegar

Ingredients	Measurement	Ingredients	Measurement	Ingredients	Measurement
Oregano extract	2 ½ cup	Lemongrass Boiled water	2 ½ cup	Ginger boiled water	2 ½ cup
Sugar	¼ cup	Sugar	¼ cup	Sugar	¼ cup
Yeast	1 tsp	Yeast	1 tsp	Yeast	1 tsp

Developmental Procedure

This study used organic materials such as oregano, lemongrass, and ginger as main ingredients in preparing vinegar. The development procedure began with selecting organic herbs such as oregano, lemongrass, and ginger. After the preparation of organic, the preparation of all ingredients in vinegar making comes next.



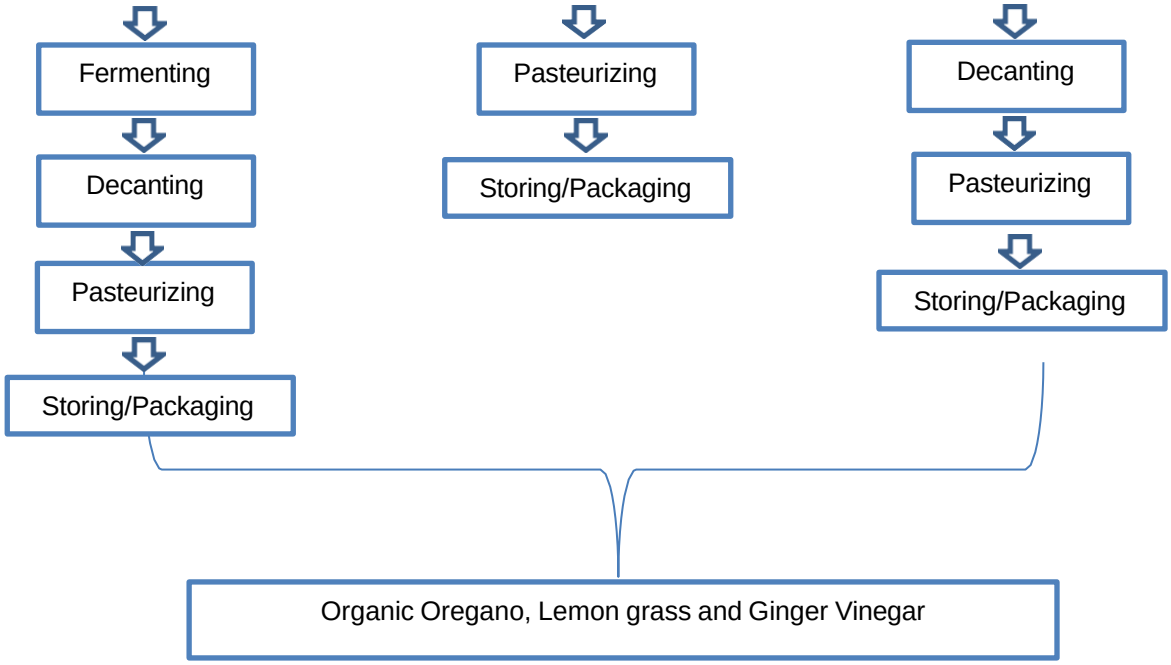


Figure 1. Flow Diagram of the Procedure in Homemade vinegar from Oregano, Lemongrass and Ginger

The finished products were subjected to sensory evaluation. Forty (40) evaluators among varied age groups were selected and properly oriented on what and how to evaluate the products using the scorecard depicting the sample code. The evaluators comprised household members of Brgy. Poblacion Sur Maddela, Quirino and faculty members of Maddela Comprehensive High School in Quirino, Province.

The finished products were served on the table. Each evaluator was asked to taste a sample of each organic vinegar. Data on the sourness, smell, color, and general acceptability of organic vinegar were collected, decoded, and subjected to statistical analysis.

A score sheet was used for qualitative analysis, determining the acceptability of the organic vinegar. The responses as to the level of acceptability of vinegar using the different organic (oregano, lemongrass, and ginger) in terms of sourness, smell, and color were solicited using the five-point Likert Scale and given as shown below.

Table 3. The range of numerical ratings and their descriptive equivalent

Scale	Numerical Rating	Descriptive Rating
5	4.50 - 5.00	Highly Acceptable
4	3.50 - 4.49	Moderately Acceptable
3	2.50 - 3.49	Acceptable
2	1.50 - 2.49	Slightly Acceptable
1	0.50 - 1.49	Not Acceptable

RESULTS AND DISCUSSION

Product Development

The organic vinegar process underwent different stages of development starting from selecting, washing, cutting, extracting, boiling, measuring, blending, bottling, fermenting, and packaging. Through these stages of development, careful observation and analysis were done to come up with organic vinegar.

The developmental procedure began with the preparation of the three-organic vinegar. The procedure started with selecting fresh young oregano leaves, lemongrass stalk, and ginger. The three were thoroughly cleaned and washed to remove any dirt or insecticide residues; boiled the lemon grass and ginger for three (3) minutes separately, blended the oregano leaves using a food processor, squeezed to get the extract, and boiled for one (1) minute.

Preparation of Organic Oregano Vinegar

Ingredients:

- 2 ½ cups Oregano extract
- ¼ cup Brown Sugar
- 1 tsp Yeast

To prepare organic oregano vinegar, begin by selecting fresh oregano leaves. Thoroughly wash the leaves to remove any dirt or insecticide residues. Blend the oregano leaves using a food processor to obtain the extract. Use a clean cloth to strain the extract from the blended leaves. Next, boil the strained oregano extract for one minute and let it cool. Measure 2 ½ cups of the oregano extract into a bowl. Add ¼ cup of brown sugar and 1 teaspoon of yeast to the bowl, stirring the mixture well. Pour the mixture into a sterilized bottle and cover it with a muslin cloth. Allow it to ferment for 3-4 weeks. After fermentation, decant the vinegar to remove any sediments or residues. Pasteurize the vinegar, then transfer it into a clean bottle. Finally, cover, label, and store the organic oregano vinegar.

Preparation of Lemon Grass Vinegar

Ingredients:

- 2 ½ cups Lemon grass boiled water
- ¼ cup Brown Sugar
- 1 tsp Yeast

To prepare lemongrass vinegar, start by harvesting fresh lemon grass. Wash the stalks thoroughly to remove any dirt or insecticide residues. Chop the lemon grass stalks and boil them in water for three minutes. Strain the boiled lemon grass water and let it

cool. Measure 2 ½ cups of the boiled lemon grass water into a bowl. Add ¼ cup of brown sugar and 1 teaspoon of yeast to the bowl, stirring the mixture well. Pour the mixture into a sterilized bottle and cover it with a muslin cloth. Allow it to ferment for seven days. After fermentation, decant the vinegar to remove any sediments or residues. Pasteurize the vinegar, then transfer it into a clean bottle. Finally, cover, label, and store the lemon grass vinegar.

Preparation of Ginger Vinegar

Ingredients:
- 2 ½ cups Ginger boiled water
- ¼ cup Brown Sugar
- 1 tsp Yeast

To prepare ginger vinegar, begin by thoroughly cleaning and washing fresh ginger to remove any dirt or insecticide residues. Slice the ginger and boil it in water for three minutes. Strain the boiled ginger water and let it cool. Measure 2 ½ cups of the boiled ginger water into a bowl. Add ¼ cup of brown sugar and 1 teaspoon of yeast to the bowl, stirring the mixture well. Pour the mixture into a sterilized bottle and cover it with a muslin cloth. Allow it to ferment for seven days. After fermentation, decant the vinegar to remove any sediments or residues. Pasteurize the vinegar, then transfer it into a clean bottle. Finally, cover, label, and store the ginger vinegar.

Level of Acceptability of Organic Vinegar made of Oregano, Lemon Grass, and Ginger

Table 1 shows the level of acceptability of Organic Vinegar made of Oregano, Lemon Grass, and Ginger as perceived by the respondents in terms of sourness, smell, and color.

Table 4 . Level of acceptability of Organic Vinegar made of Oregano, Lemon Grass, and Ginger in terms of sourness, smell, and color

Sensory Characteristic	Sample 1 (Oregano)		Sample 2 (Lemon Grass)		Sample 3 (Ginger)	
	Means	Desc.	Means	Desc.	Means	Desc.
Sourness	4.80	HA	4.98	HA	4.85	HA
Smell	5.00	HA	4.90	HA	4.87	HA
Color	5.00	HA	5.00	HA	4.93	HA

**1.00-1.49: Not Acceptable (NA); 1.50-2.49: Slightly Acceptable (SA); 2.50-3.49: Acceptable (A); 3:50-4.49: Moderately Acceptable (MA); 4.50-5.00: Highly Acceptable (HA)*

In terms of sourness, all three samples received a “highly acceptable” rating with Lemon Grass (Sample 2) being the highest. Meanwhile, in terms of smell, Oregano

(Sample 1) received perfect acceptability, as well as for color, tied up with (Lemon Grass). It reveals that the level of acceptability of the three samples of Organic Vinegar was Highly Acceptable, with ratings 4.80-4.95 for sourness, 4.87-5.00 for smell, and 4.93-5.00 for color.

This implies that Organic Vinegar in three (3) treatments was acceptable regarding all its sensory characteristics since all the weighted means surpassed the baseline rating of 2.50 to be accepted.

This is similar to the findings of Kumare et al. (2017) in "Fermentative Production of Vinegar from Grapes and Guava Using Adsorbed Cells of Acetobacter aceti" where grape and guava vinegars were acceptable for the tasters. It has been shown that the results from both the vinegars produced by semi-continuous process as of standard quality and there is not much difference in the sensory qualities of commercially produced vinegars.

Comparison in the Level of Acceptability of Organic Vinegar made of Oregano, Lemongrass and Ginger

Table 5 shows the results of the comparison in the level of acceptability of Organic Vinegar made with Oregano, Lemon Grass, and Ginger as perceived by the evaluators grouped by age.

Table 5. Analysis of variance results comparing the level of acceptability of organic oregano vinegar by different groups of respondents

Profile Groups	N	Mean	SD
Teenagers	10	5.000	.000
Adults	10	4.900	.161
Faculty and Staff	10	4.933	.141
Food Experts	10	4.900	.161

The table shows the means and standard deviations on the level of acceptability of Organic Oregano Vinegar by the different groups of evaluators: Teenagers (M = 5.000, SD = .000); Adults (M = 4.900, SD = .161); Faculty and Staff (M = 4.933, SD = .141); and Food Experts (M = 4.900, SD = .161)

ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.067	3	.022	1.241	**.309**
Within Groups	.644	36	.018		
Total	.711	39			

Legend: *significant at .05 level

The table above presents the analysis of the significant difference in the level of acceptability of Organic Oregano Vinegar as evaluated by the evaluators when grouped– the dependent variable being the profile group to which the evaluators were classified and the independent variable is the degree of the product's level of acceptability. The result of the ANOVA revealed that there was no significant difference in the level of acceptability of Organic Oregano Vinegar as evaluated by the evaluators when grouped by age: F(3,36) = 1.241, p = .309. This implies that the level of acceptability of Organic Oregano Vinegar is the same across age groups.

Table 6. Analysis of variance results comparing the level of acceptability of organic lemon Grass Vinegar as perceived by the evaluators.

Profile Groups	**N**	**Mean**	**SD**
Teenagers	10	4.967	.105
Adults	10	4.967	.105
Faculty and Staff	10	4.900	.225
Food Experts	10	5.000	.000

The table shows the means and standard deviations on the level of acceptability of Organic Lemon Grass Vinegar by the different groups of evaluators: Teenagers (M = 4.967, SD = .105); Adults (M = 4.967, SD = .105); Faculty and Staff (M = 4.900, SD = .225); and Food Experts (M = 5.000, SD = .000).

ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.053	3	.018	.966	.419
Within Groups	.656	36	.018		
Total	.708	39			

*Legend: *significant at .05 level*

Table 6 presents the analysis of the significant difference in the level of acceptability of Organic Lemon Grass Vinegar as evaluated by the evaluators when grouped– the dependent variable being the profile group to which the evaluators were classified and the independent variable being the degree of the product's level of acceptability. The result of the ANOVA revealed that there was no significant difference in the level of acceptability of Organic Lemon Grass Vinegar evaluated by the different groups of respondents: F(3,36) = .966, p = .419. This indicates that the sensorial evaluation obtained the same acceptability level of the product regardless of the types of evaluators.

Table 7. Analysis of variance results comparing the level of acceptability of organic ginger vinegar as perceived by the evaluators.

Profile Groups	N	Mean	SD
Teenagers	10	4.833	.360
Adults	10	5.000	.000
Faculty and Staff	10	4.967	.105
Food Experts	10	4.733	.644

The table shows the means and standard deviations on the level of acceptability of Organic Ginger Vinegar by the different groups of evaluators: Teenagers (M = 4.833, SD = .360); Adults (M = 5.000, SD = .000); Faculty and Staff (M = 4.967, SD = .105); and Food Experts (M = 4.733, SD = .644).

ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.456	3	.152	1.093	**.364**
Within Groups	5.000	36	.139		
Total	5.456	39			

*Legend: *significant at .05 level*

The table above reveals the analysis of the significant difference in the level of acceptability of Organic Ginger Vinegar by the different groups of evaluators. The result of the ANOVA revealed that there is no significant difference in the level of acceptability of Organic Ginger Vinegar as perceived by the evaluators: F(3.36) = 1.093, p = .364. Thus, the null hypothesis was accepted. This implies that the level of acceptability of Organic Ginger Vinegar did not differ across age groups.

These results imply that the evaluators are not a discriminating factor regarding the acceptability of the Organic Vinegar across all samples.

This is similar to the findings of Hasim et.al., (2015) in a study entitled " Potential of Lemon Grass Leaves Extract *(Cymbopogon citratus)* As Prevention For Oil Oxidation" Ethanol extract of lemongrass leaves contains alkaloids, saponins, tannins, flavonoids, phenols, and steroids. 70% ethanol extracts may be selected to obtain the highest antioxidant activity that is IC50 of 79.444 mg/But it was not significantly different with ascorbic acid as the reference and 77.65% with a protection factor of BHT (100%) as a comparison.

Shelf - Life of Oregano, Lemon Grass, and Ginger as Organic Vinegar

After having produced the three organic vinegars, the researcher put different proportions from the three organic vinegars in three bottles and stored these at normal temperatures.

The following were observed about the organic vinegar which was stored at a normal temperature.

First day. The organic vinegar had a perfect taste, aroma, and color.

Second day. Same observation as the first day, there was a perfect aroma, taste, and color.

Third day. Same observation as the 2nd day, the vinegar had perfect taste, aroma, and color.

Fourth day. The taste of the vinegar was still good, its aroma smelled good, and had a nice color.

Fifth day. Same observation as the fourth day. The taste was still good; its aroma was good, and had a nice color.

Sixth day. The vinegar still smelled good, was still appealing to the eye with perfect color

Seventh day. Same observation as the sixth day, the vinegar still had a good taste; smelled good, and had a perfect color

Eighth day. The vinegar had still a good smell, taste, and color.

Ninth day. Same observation as the Eighth day. The vinegar had still good taste, aroma, and color.

Tenth day. The taste of the vinegar was still good, smelled good, and the color remained appealing to the eye.

Eleventh day. Same observation as the tenth day.

Twelfth day. The taste of the three vinegars, their smell, and color were still good.

Thirteenth day. Same observation as the twelfth day.

Fourteenth day. Overall, the vinegar was still good

Fifteenth day. No signs of spoilage, and the vinegar was still good

Sixteenth day. The vinegar had still a good smell, taste, and color.

Seventeenth day. The taste of the vinegar was still good; it had a good aroma and a nice color

Eighteenth day. Same observation as the seventeenth day

Nineteenth day. The vinegar slightly changed its smell of lemon grass, its aroma of ginger increased, and the color was still appealing.

Twentieth day. Same observation as the nineteenth day

Twenty-first. No signs of spoilage, still good, and could be stored up to 21 days at normal temperature.

Conclusions

The research on the development and acceptability of organic vinegar made from oregano, lemongrass, and ginger demonstrates that all three kinds of vinegar are highly acceptable across various sensory characteristics such as sourness, smell, and color. The preparation processes for each type of vinegar—starting from selecting, washing, boiling, fermenting, and bottling—ensured the production of high-quality kinds of vinegar. Sensory evaluations revealed that all three vinegars scored highly acceptable ratings, with minor variations among different evaluator groups, indicating no significant differences in acceptability based on age or professional background. Additionally, shelf-

life analysis showed that the vinegars maintained their sensory qualities for up to 21 days at normal temperatures without signs of spoilage. These findings suggest that the produced organic vinegars not only meet high acceptability standards but also exhibit good shelf stability, making them viable products for consumer use.

Recommendations

In view of the aforementioned conclusions, the following are recommended by the study:

1. More research studies should be conducted in the making of quality food products.
2. More enriched food products may be made to determine the acceptability of organic vinegar
3. Similar studies may be done to test and validate the shelf life of the developed product.
4. Identification of appropriate packaging and labeling for the developed product be done.
5. Farmers and producers are strongly encouraged to plant/produce more oregano, lemon grass, and ginger to help benefit them economically.
6. The researchers may process and sell more oregano, lemon grass, and ginger as organic vinegar for profit.
7. Future researchers who want to use oregano, lemon grass, and ginger as an ingredient in producing vinegar can use this study as a guide and reference.

Compliance with Ethical Standards

The authors declare that this study was conducted in full compliance with ethical standards. Informed consent was obtained from all respondents, ensuring their understanding of the study and their voluntary participation. Respondents were given the freedom to withdraw from the study at any time without any consequences. The anonymity of the respondents was maintained throughout the research process to protect their privacy. The well-being of the respondents was safeguarded at all times. The authors assert that there is no conflict of interest in the conduct of this study. Strict measures were taken to avoid plagiarism, ensuring the originality of the work. The interpretation of the findings was unbiased, and the results were used solely for research purposes.

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DICHOTOMY OF SOLID WASTE MANAGEMENT: PRACTICES AND CHALLENGES

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ABSTRACT

This study examined the extent of application of the solid waste management programs and practices implemented in the different barangays of Dumaguete City. The participants of the study were the barangay officials and ten (10) residents of the 30 barangays. The statistical tools used in this study were weighted mean, Spearman rank correlation coefficient and Maan-Whitney U test. The study found the following: 1) among the identified six (6) solid waste management practices and programs, both the residents and the barangay officials had the same perception of the extent of implementing Creation of Barangay Solid Waste Management Committee which is high; 2) the problems encountered in the implementation of the solid waste management programs and practices were said to be serious particularly the lack of garbage truck and personnel to collect the garbage; 3) the residents had a passive level of participation both in the formulation and implementation of the SWM practices and programs; 4) the problems encountered by the barangays had a weak significant relationship with the extent of application of the SWM practices and programs; 5) a significant yet weak relationship was found between the problems encountered in maintaining the disposal of solid waste and the level of community involvement in the formulation and implementation SWM practices and programs; 6) there was a significant difference in the application of solid waste management practices and programs between the barangay officials and the residents; and 7) the belief of barangay officials was higher than that of the residents in terms of the creation of the barangay solid waste committee as a solution to solid waste disposal.

Keywords: *Extent of Application of Solid Waste Management Practices , Problems Encountered, Community Involvement*

INTRODUCTION

Problems on solid waste management remain a major environmental concern in many parts of the world today. They require immediate solution as they entail various detrimental consequences to humanity both in rural and urban areas. Solid wastes are generated by humans through the consumption of materials and industry products.

Consequently, consumerism has a big impact on the increasing volume of solid wastes. Cities worldwide produce 2.01 billion tons of solid wastes, which are translated into 0.74 kilograms for every person in a day. This would mean that the higher the purchasing power of an individual is, the higher is his/her consumption and eventually production of solid wastes (World Bank, 2023).

Solid waste management is the supervised handling of waste materials from generation at the source through the recovery processes to disposal (OECD Glossary, 2017). It is the field concerned with managing the generation, storage, collection, transportation, processing, and disposal of solid waste materials. This management can be effectively approached through various public health, conservation, economic, aesthetic, engineering, and environmental considerations (Leblanc, 2018).

Dumaguete City, a third class City in the Province of Negros Oriental, has been facing garbage disposal problems. In fact, the city generates eighty (80) tons of garbage each day. Due to the prohibition of the open dumps established and operated, and any practice or disposal of solid waste by any person, the local government units have considered using exclusive sanitary landfills to address the overflowing garbage spills on the roads near the open dump site in Baranggay Candau-ay (Partlow, 2017).

According to Engr. Chilvier Patrimonio, head of the City Environment and Natural Resources, during an interview on April 2019, the Candau-ay dump site has already reached its carrying capacity of accommodating garbage. In fact, a closure order has already been released since 2006. Because the city has a small land area, there has been difficulty finding a land which can be used as a dumpsite. Also, even if the city has already acquired a lot, it still has to comply with the DENR requirements to seek an Environment Clearance Certificate and to come up with 10 year tenure plan which itemizes the plans and activities to be done in closing the Candau-ay dumpsite.

The city has been criticized for its non-enforcement of segregation at source as provided in the City Ordinance No. 115 or the Integrated Solid Waste Management of Dumaguete City that mandates the segregation of solid waste into biodegradable or decomposable, non-biodegradable or non-decomposable, and toxic and hazardous wastes. The ordinance came as a result of Republic Act 9003, an act providing for an ecological solid waste management program, which mandates segregation at source.

Moreover, the city ordinance deputized barangay enforcers to facilitate in the stronger implementation of the ordinance.

This study was able to identify the solid waste management practices adopted and implemented by the thirty (30) barangays in Dumaguete City. Moreover, it looked into the involvement of the residents in coming up with solid waste practices to help the local government mitigate the problem in garbage disposals. As a result of this undertaking, a strategic development plan aimed at sustaining the solid waste management practices was formulated.

Research Questions

This study identifies the solid waste management practices implemented by the various barangays in Dumaguete City. It aims to answer the following specific questions:

1. What is the extent of application of the following solid waste management practices in the barangays of Dumaguete, in terms of:
    1.1 creation of Barangay Solid Waste Management Committee;
    1.2 no segregation, no collection Policy;
    1.3 promotion of composting of biodegradable waste;
    1.4 establishment of material recovery facility;
    1.5 promotion of reduce, re-use and recycle; and
    1.6 collection and disposals of solid waste?
2. What is the extent of the challenges encountered in the barangays of Dumaguete City as perceived by the Barangay Officials and the residents?

METHODOLOGY

Research Design

This study used the correlational and comparative methods of research. It also utilized the quantitative method of research. The correlational design is used to determine the relationships among variables and to allow the prediction of future events from present knowledge (Walinga & Stangor, 2014). In this study, the relationship between the solid wastemanagement practices applied and the challenges encountered were measured. Meanwhile, the comparative research design intends to compare two groups inan attempt to draw a conclusion about them (Richardson, 2018). In this study, the perception of the barangay officials and the residents were beingcompared in relation to the solid waste management practices of the barangay.

Research Locale

This study was conducted in the thirty (30) barangays of Dumaguete City, Negros Oriental. Dumaguete is a component city in the Province of Negros Oriental. It

has a total population of 131, 377 based on the 2015 population census of the Philippine Statistics Office. The city is politically subdivided into 30 barangays (DRRMP, 2018).

Statistical Tools

The tools used by the researcher in analyzing the data were the Weighted mean and Spearman rank correlation coefficient. Weighted mean was used in getting the extent of: (a) application of the different solid waste management practices; (b) the challenges encountered in the disposal of the solid waste and (c) community involvement in the creation and implementation of the SWM practices.

The Spearman rank correlation coefficient. This was utilized to identify the degree of relationship between the challenges encountered in the disposal of solid waste and the level of community involvement in terms of program formulation and implementation.

Research Respondents

The respondents of this study were the barangay officials in Dumaguete City and the residents per barangay. The researcher took 10 samples from each community in the 30 barangays. However, out of nine (9) elected barangay officials, only six (6) randomly selected barangays officials took part in this study.

Research Instrument

A self-made questionnaire written in the English language and translated into Cebuano was used as the basic instrument in obtaining the data required for the study. The questionnaire was based on the reading materials obtained by the researcher from different sources and from interview with the CENRO head Engr. Chelvier Patrimonio. To elicit comments and ensure the validity of the questionnaire, the researcher had the instrument crosschecked by experts, the CENRO head (Engr. Patrimonio), and solid waste management professionals William A. Ablong and Marlon A. Tanilon.

Data Gathering Procedure and Analysis

The research adhered to the established protocol for data gathering. result of the survey. The researcher conceptualized and determined the title of her study based on the thrust of the university research and on the current public concern.A design hearing was then conducted wherein the researcher presented to the panel members the title and content of her study for approval. After which, the researcher composed and sent a letter to the ABC President, Punong Barangays and the Head of the City Environment and Natural Resources Office to request for permission to distribute survey questionnaires. Participants received a consent letter explaining the critical elements of the study and the expectations as participants of the study. A consent form was

attached to the letter, which the participants signed if they agreed to participate and understood their role in the research.

RESULTS

Table 1 *Extent of Solid Waste Management Practices applied in the Barangay in Terms of Creation of Barangay Solid Waste Management Committee*

Indicators	Brgy. Officials (n = 180)			Residents (n = 300)		
	$\overline{wx}$	VD	Extent of Application	$\overline{wx}$	VD	Extent of Application
1. The Punong Barangay leads the solid waste management committee.	4.46	Strongly Agree	Very High	3.92	Agree	High
2. Barangay officials, Personnel and the community are part of the solid waste management committee.	4.46	Strongly Agree	Very High	3.86	Agree	High
3. The barangay allocates budget for the activities and programs of the Barangay Solid Waste Management Committee.	4.11	Agree	High	3.56	Agree	High
4. The committee formulates and enforces Programs and solid waste management practices consistent with the City's solid waste management plan.	4.05	Agree	High	3.57	Agree	High
5. The committee meets regularly to discuss updates and monitoring of the programs implemented.	3.80	Agree	High	3.54	Agree	High
6. The committee has its working manuals and guidelines as basis on how it runs, and it functions.	3.69	Agree	High	3.45	Agree	High
7. The committee works with other barangay solid waste management committee for any joint programs on solid waste management.	3.49	Agree	High	3.42	Agree	High
8. The committee coordinates with the City Solid Waste Management Board for its plans and programs as well as for possible support or assistance.	4.06	Agree	High	3.63	Agree	High
9. The committee is responsible for the monitoring of the programs and solid waste management practices implemented and the strict implementation of the city plastic ordinance no. 231.	4.02	Agree	High	3.61	Agree	High
10. The committee organizes the community in the promotion of solid waste management activities of the barangay.	3.86	Agree	High	3.57	Agree	High

Composite			4.00	Agree	High	3.61	Agree	High

Legend:	Scale	Verbal Description	Extent of Application
	4.21 – 5.00	Strongly Agree	Very High/Fully Implemented
	3.41 – 4.20	Agree	High/Implemented
	2.61 – 3.40	Moderately Agree	Moderately High/Moderately Implemented
	1.81 – 2.60	Disagree	Low/Partially Implemented
	1.00 – 1.80	Strongly Disagree	Very Low/Not Implemented

Table 2 *Extent of Application of Solid Waste Management Practices in the Barangay in Terms of No Segregation, No Collection Policy*

Indicators	Brgy. Officials (n = 180)			Residents (n = 300)		
	$w\bar{x}$	VD	Extent of Application	$w\bar{x}$	VD	Extent of Application
1. Garbage is properly segregated according to kind of waste produced in the households.	3.64	Agree	High	3.51	Agree	High
2. Households are using bins/sacks or other containers to store their segregated waste temporarily.	3.67	Agree	High	3.55	Agree	High
3. Bins are properly labeled (e.g. bio & non bio-degradable, recyclable & residual waste, toxic or hazardous wastes) to properly throw garbage according to its nature.	3.36	Mod. Agree	Mod. High	3.36	Mod. Agree	Mod. High
4. Garbage are not collected when it was not properly segregated in bins/used-sack/drum or other appropriate containers.	3.41	Agree	High	3.37	Mod. Agree	Mod. High
5. Household place tags on their garbage sacks. No tags, no segregation, no collection.	3.43	Agree	High	3.32	Mod. Agree	Mod. High
6. From the bins, segregated garbage are placed in different used-sacks ready for collection and transfer to the barangay material recovery facility for further segregation by waste pickers and segregators.	3.29	Mod. Agree	Mod. High	3.40	Mod. Agree	Mod. High
7. Violators are fined for non-compliance of the policy.	3.37	Mod. Agree	Mod. High	3.36	Mod. Agree	Mod. High
8. Provision of recyclable bins to designated drop-off point area in the barangay.	3.43	Agree	Mod. High	3.37	Mod. Agree	Mod. High
9. Provision of communal garbage bins especially to area which are not accessible by the garbage truck.	3.36	Mod. Agree	Mod. High	3.42	Agree	High
10. Provision of easy-to-follow guidelines (e.g. flyers, leaflets and the like) on the policy of	3.76	Agree	High	3.47	Agree	High

waste segregation policy.

Composite	3.47	Agree	High	3.41	Agree	High

Legend:	Scale	Verbal Description	Extent of Application
	4.21 – 5.00	Strongly Agree	Very High/Fully Implemented
	3.41 – 4.20	Agree	High/Implemented
	2.61 – 3.40	Moderately Agree	Moderately High/Moderately Implemented
	1.81 – 2.60	Disagree	Low/Partially Implemented
	1.00 – 1.80	Strongly Disagree	Very Low/Not Implemented

Table 3 *Extent of Application of Solid Waste Management Practices in the Barangay in Terms of Promotion of Composting of Biodegradable Wastes*

Indicators	Brgy. Officials (n = 180)			Residents (n = 300)		
	$w\bar{x}$	VD	Extent of Application	$w\bar{x}$	VD	Extent of Application
1. Provision of common composting facility in the barangay.	3.41	Agree	High	3.30	Mod. Agree	Mod. High
2. onduct training to the community on basic composting.	3.65	Agree	High	3.34	Mod. Agree	Mod. High
3. Easy-to-follow guidelines are provided to the community about composting at source.	3.58	Agree	High	3.40	Mod. Agree	Mod. High
4. Households have their own composting bins.	3.21	Mod. Agree	Mod. High	3.32	Mod. Agree	Mod. High
5. The barangay is adopting a specific method of composting like vermi-composting.	3.20	Mod. Agree	Mod. High	3.09	Mod. Agree	Mod. High
6. Construction and operation of composting facility at the barangay level.	3.27	Mod. Agree	Mod. High	3.16	Mod. Agree	Mod. High
7. The barangay has composting equipment (shredder, sifter) to process biodegradable wastes into useful products, such as organic fertilizer (vermicast/vermi-compost).	2.83	Mod. Agree	Mod. High	3.00	Mod. Agree	Mod. High
8. Financial and technical assistance are given to the barangay.	3.05	Mod. Agree	Mod. High	3.15	Mod. Agree	Mod. High
9. Availability of permanent composting land area.	3.12	Mod. Agree	Mod. High	3.11	Mod. Agree	Mod. High
10. Barangay officials, personnel, community and other stakeholders are actively cooperating and participating in this program.	3.91	Agree	High	3.42	Agree	High
Composite	3.32	Mod. Agree	Mod. High	3.23	Mod. Agree	Mod. High

Legend:	Scale	Verbal Description	Extent of Application

4.21 – 5.00	Strongly Agree	Very High/Fully Implemented
3.41 – 4.20	Agree	High/Implemented
2.61 – 3.40	Moderately Agree	Moderately High/Moderately Implemented
1.81 – 2.60	Disagree	Low/Partially Implemented
1.00 – 1.80	Strongly Disagree	Very Low/Not Implemented

Table 4 *Extent of Solid Waste Management Practices applied in the Barangay in Terms of Establishing Material Recovery Facility (MRF) at the Barangay Level*

Indicators	Brgy. Officials (n = 180)			Residents (n = 300)		
	$\bar{wx}$	VD	Extent of Application	$\bar{wx}$	VD	Extent of Application
1. Functional material recovery facility is present and available in the barangay that works according to its purpose.	3.16	Mod. Agree	Mod. High	3.23	Mod. Agree	Mod. High
2. The space for the MRF is enough to cater to the solid waste of the barangay.	2.99	Mod. Agree	Mod. High	3.05	Mod. Agree	Mod. High
3. Provision of labor and materials for the operation of MRF.	3.01	Mod. Agree	Mod. High	3.10	Mod. Agree	Mod. High
4. Logistics assistance is provided by the local government for the collection of garbage.	3.29	Mod. Agree	Mod. High	3.24	Mod. Agree	Mod. High
5. Necessary trainings on MRF are conducted to barangay officials and staff.	3.29	Mod. Agree	Mod. High	3.10	Mod. Agree	Mod. High
6. Segregation activities are properly observed in the MRF.	3.15	Mod. Agree	Mod. High	3.29	Mod. Agree	Mod. High
7. MRF is regularly maintained and monitored.	2.96	Mod. Agree	Mod. High	3.10	Mod. Agree	Mod. High
8. Recyclable materials are collectively sold to junk shops and proceeds are used to fund the operation of the facility.	3.03	Mod. Agree	Mod. High	3.29	Mod. Agree	Mod. High
9. The MRF is equipped with equipment (e.g. shredder, mechanical sifter) necessary for its operation.	2.65	Mod. Agree	Mod. High	3.00	Mod. Agree	Mod. High
10. The barangay has its own garbage truck and collectors.	2.70	Mod. Agree	Mod. High	3.05	Mod. Agree	Mod. High
Composite	3.02	Mod. Agree	Mod. High	3.15	Mod. Agree	Mod. High

Legend:	**Scale**	**Verbal Description**	**Extent of Application**
	4.21 – 5.00	Strongly Agree	Very High/Fully Implemented
	3.41 – 4.20	Agree	High/Implemented
	2.61 – 3.40	Moderately Agree	Moderately High/Moderately Implemented
	1.81 – 2.60	Disagree	Low/Partially Implemented
	1.00 – 1.80	Strongly Disagree	Very Low/Not Implemented

Table 5 *Extent of Application of Solid Waste Management Practices in the Barangay in Terms of Promotion of Reduce, Re-Use and Recycle*

Indicators	Brgy. Officials (n = 180)			Residents (n = 300)		
	$\bar{wx}$	VD	Extent of Application	$\bar{wx}$	VD	Extent of Application
1. Households are using eco-bags when shopping or going to the grocery store.	3.38	Mod. Agree	Mod. High	3.33	Mod. Agree	Mod. High
2. The households do not use single-use plastics in buying food and other personal needs.	3.31	Mod. Agree	Mod. High	3.18	Mod. Agree	Mod. High
3. The barangay has a recycling facility where local residents develop new products out of waste.	2.91	Mod. Agree	Mod. High	3.16	Mod. Agree	Mod. High
4. Trainings are conducted to the community on how to re-use, reduce and recycle waste materials.	3.52	Agree	High	3.32	Mod. Agree	Mod. High
5. The barangay sold products made out of the wastes produced by the community.	2.87	Mod. Agree	Mod. High	3.07	Mod. Agree	Mod. High
6. Banderitas, parols and the like used during fiestas, christmas season and other similar occasions in the barangay are all made from recyclable materials.	3.00	Mod. Agree	Mod. High	3.15	Mod. Agree	Mod. High
7. The Barangay conducts house to house collection of recyclable materials and sold to junk shops.	3.09	Mod. Agree	Mod. High	3.13	Mod. Agree	Mod. High
8. Ordinances on the use of single-use plastics are strictly implemented and monitored.	3.23	Mod. Agree	Mod. High	3.22	Mod. Agree	Mod. High
9. Households utilize plastic containers, bottles and cans for other home use.	3.50	Agree	High	3.37	Mod. Agree	Mod. High
10. The barangay hall utilizes the other side of a used paper for printing internal communications.	3.84	Agree	High	3.31	Mod. Agree	Mod. High

Composite	3.26	Mod. Agree	Mod. High	3.22	Mod. Agree	Mod. High

Legend:	Scale	Verbal Description	Extent of Application
	4.21 – 5.00	Strongly Agree	Very High/Fully Implemented
	3.41 – 4.20	Agree	High/Implemented
	2.61 – 3.40	Moderately Agree	Moderately High/Moderately Implemented
	1.81 – 2.60	Disagree	Low/Partially Implemented
	1.00 – 1.80	Strongly Disagree	Very Low/Not Implemented

Table 6 *Extent of Application of Solid Waste Management Practices in the Barangay in Terms of Collection and Disposal of Solid Waste*

Indicators	Brgy. Officials (n = 180)			Residents (n = 300)		
	$\bar{wx}$	VD	Extent of Application	$\bar{wx}$	VD	Extent of Application
1. The barangay has its collection drop-off points of garbage for each street/road.	4.01	Agree	High	3.66	Agree	High
2. Garbage is properly disposed through a garbage truck.	3.94	Agree	High	3.57	Agree	High
3. Open-fire burning of garbage is strictly prohibited.	4.02	Agree	High	3.59	Agree	High
4. Disposal of garbage in lakes, rivers and seas are punishable.	4.02	Agree	High	3.60	Agree	High
5. Ordinances pertaining to proper garbage disposals are strictly enforced and implemented.	3.80	Agree	High	3.58	Agree	High
6. The barangay has its own garbage collection system.	3.48	Agree	High	3.45	Agree	High
7. Regular garbage schedule collection is observed.	4.01	Agree	High	3.70	Agree	High
8. Collected and Segregated garbage are properly handled.	3.64	Agree	High	3.45	Agree	High
9. Placing garbage in the drop-off points without proper segregation is not collected.	3.32	Mod. Agree	Mod. High	3.32	Mod. Agree	Mod. High
10. Collection fees are charged at a minimal amount to fund solid waste management	3.03	Mod. Agree	Mod. High	3.23	Mod. Agree	Mod. High

programs in the barangay.

Composite	3.73	Agree	High	3.51	Agree	High

Legend:	Scale	Verbal Description	Extent of Application
	4.21 – 5.00	Strongly Agree	Very High/Fully Implemented
	3.41 – 4.20	Agree	High/Implemented
	2.61 – 3.40	Moderately Agree	Moderately High/Moderately Implemented
	1.81 – 2.60	Disagree	Low/Partially Implemented
	1.00 – 1.80	Strongly Disagree	Very Low/Not Implemented

Table 7 *Extent of Problems Encountered in the Barangays as Perceived by the Barangay Officials and the Residents*

Legend: Indicators	Brgy. Officials (n = 182)		Residents (n = 300)	
	$w\bar{x}$	Veral Description	$w\bar{x}$	Verbal Description
1. Inconsistent pick-up schedule of garbage by the government garbage truck.	3.19	Moderately Serious	3.52	Serious
2. Lack of garbage truck units in the city	3.47	Serious	3.59	Serious
3. Shortage of the number of garbage collectors	3.43	Serious	3.51	Serious
4. No provision of public garbage bins.	3.34	Moderately Serious	3.73	Serious
5. Less community involvement in the program	3.42	Serious	3.60	Serious
6. Lack of financial support from the city government	3.21	Moderately Serious	3.57	Serious
7. Weak information and education campaign	3.15	Moderately Serious	3.57	Serious
8. Weak partnership of private sector, NGOs and the community	3.16	Moderately Serious	3.61	Serious
9. Lack of technical capability to implement the program among the barangay officials	3.27	Moderately Serious	3.62	Serious
10. Lack of input materials to implement the program	3.29	Moderately Serious	3.68	Serious
Composite	3.29	Moderately Serious	3.60	Serious

Legend:	Scale	Verbal Description
	4.21 – 5.00	Very Serious
	3.41 – 4.20	Serious
	2.61 – 3.40	Moderately Serious
	1.81 – 2.60	Less Serious
	1.00 – 1.80	Not a Problem

DISCUSSION

Extent of Solid Waste Management Practices applied in the Barangay in terms of the Creation of Barangay Solid Waste Management Committee

Table 1 revealed the extent of Solid Waste Management Practices applied in the barangay in terms of the Creation of Barangay Solid Waste Management Committee. Data indicate that the Barangay officials “strongly agreed” that the Punong Barangay leads the solid waste management committee, and that the barangay officials, personnel and the community are part of the solid waste management committee as verified by a weighted mean of both 4.46 respectively which is equivalent to “very high extent” of implementation. This means that the barangays were able to implement 81%-100% of the expected SWM practices. The “very high” extent of application as perceived by the barangay officials would only mean that they, being elected by the people, are really serious about the implementation of the SWM practices. In other words, the barangay officials really do their functions as leaders of the community.

According to conventional wisdom, the best managers always lead by example, which would only mean that the Punong Barangay as manager should be the one to do the first initiative and take the first step to practice solid waste management in the barangay. This would also imply that the Punong Barangays mean what they say by doing it. In other words, they walk the talk. In Teresa, Rizal, their Solid Wastes Management Program was the result of the vision, passion, dedication, and consistency on the part of the officials and the citizens. Indeed, the municipal mayor walked the talk by inspiring the municipal and barangay leaders to discharge their responsibilities under the SWMP. The success of Teresa’s solid waste management program shows how strong political will and leadership by example, coupled with a sound strategy backed by a competent technical team acting as the focal implementing arm, and supported by the local citizenry, civic groups and industry/business partners, can create positive changes in the attitudes, values, behavior and practices of its residents, and help turn a town around towards lasting social transformation (lgisb.lga.gov.ph ›uploads › best_practice › Teresa_-_Best_Practice1). Furthermore, the very high result is in line with the mandate of Memorandum Circular 2018-112 issued on July 12, 2018 by the Department of Interior and Local Government with regard to the Organization and Reorganization of the Barangay Ecological Solid Waste Management Committee, in which the Punong Barangay sits as the chairperson of the committee and at the same time involving barangay kagawad, SK chairman and other stakeholders in the community (Department of Interior and Local Government).

Similarly, the residents “agreed” with the same indicators as signified by the weighted mean of 3.93 and 3.86 respectively, which is equivalent to “high” extent of implementation. This means that the barangay was able to implement 61%-80% of the SWM practices. The rest of the indicators in relation to budget allocation, committee formulation and enforcement of the programs, committee’s regular attendance to meetings, barangay joint programs, coordination with City Solid Waste Management Board, monitoring of programs and city plastic ordinance, and the promotion of SWM

activities to the barangays were perceived by both the barangay officials and the residents as high, which implies that 61%-80% of the program was implemented. The result would only suggest that the level of involvement and awareness of the residents in terms of their knowledge of the solid waste management programs in the barangay given their perception on the extent of implementation is only high. Information education campaign is a factor that makes the residents aware of the activities, programs and steps that were taken by the SWM committee of the barangay. In an evaluation of the solid waste management project in selected barangays of Cotabato City, the personnel of the barangay solid waste management committee are non-elected barangay officials, yet they play an important role as forces of technical and administrative knowledge in shaping the policy of the barangay. The committee members participated in the door-to-door awareness and messaging campaigns (Welz, 2010).

Extent of Solid Waste Management Practices applied in the Barangay in terms of the "No Segregation and No Collection Policy"

Table 2 shows the solid waste management practices applied in the barangay in terms of "No Segregation and No Collection Policy." Data indicate that the barangay officials "agreed" with the indicators on the provision of easy-to-follow guidelines on the policy of waste segregation and, the households are using bins/sacks or other containers to store their segregated waste as specified by a higher weighted mean equivalent to 3.76 and 3.67 respectively. Data further suggest a high extent of application, which means that 61%-80% of the solid waste management practices of the barangay were implemented as perceived by the barangay officials.

The above perception of the barangay officials would only mean that the "no collection, no segregation policy" is implemented but not very highly or fully implemented. In an interview with the President of the Association of the Barangay Captains, Hon. Dionie Amores, the researcher found out that there were still households who failed to segregate their garbage. As observed, most of the residents who do this were those in the middle class level of economic status or the educated or professionals. This finding would emphasize the importance of information education campaign and public participation for people's awareness of the impact of the policy. Barangay Rosario, Pasig City, in 2005 started its solid waste management program through a survey on what needs to done to implement the "no segregation, no collection" policy before coming up with an ordinance. The barangay captain coordinated with the various sectors in the barangay when conducting the survey. An information campaign, which includes distribution of leaflets to households to teach them how to properly segregate was then launched (National Solid Waste Management Commission).

Meanwhile, the data further show that the residents "agreed" with the two indicators "the households are using bins/sacks or other containers to store their segregated waste temporarily," and "proper waste segregation in the household" as revealed by the weighted means of 3.55 and 3.51 respectively, which means that the extent of application is "high". This finding suggests that the residents are practicing

segregation of waste although their implementation is not very high. This is relatively explained in a study entitled “Sustainable Solid Waste Management System in Brgy. Bayog, Los Baños, Laguna” wherein waste segregation is practiced especially for recyclable materials and the residents are re-using it particularly the plastic bottles, bottles and paper, while only a few are re-using plastic bags and metal cans. As a result, plastics and metals are mixed with other solid wastes unsegregated. Also, although people who belong to class B would have separate garbage bins for biodegradable and non-biodegradable solid, these were being handled by their household helpers who might possibly mix the garbage in time of collection. Hence, educating the members of the households is important, too (Almazan et al., 2016).

The composite weighted mean for the Barangay Officials and the residents are 3.47 and 3.41 respectively, meaning both “agreed,” which implies that the extent of implementation of the “no segregation, no collection policy” is high. The composite result is supported by the study entitled “The Perception of the Effectiveness of the Implemented Policy: ‘No segregation, No collection policy’ Project of Celdran Village, Tubod, Iligan City” which found that the policy is effective although the levels of effectiveness vary or are not the same due to the population in the three areas where the study was observed. Moreover, despite the effectiveness of the area, still the policy was seen as flawed and was not followed by some (Legaspina et al.).

In addition, local governments blamed the lack of awareness and discipline of waste generators as the reasons for having poor segregation. Although in Quezon City and San Fernando City, micro experiences work especially in terms of targeted waste segregation and collection. Effective segregation at source and segregated collection result to high waste diversion which would mean that waste fromdisposal should go to recycling and composting facility as experienced by San Carlos City. The change in behavior of the citizens towards awareness of segregation at source and the 3R’s can be translated into efficient and segregated collection, recycling infrastructures and incentives (Atienza et al., 2011).

In relation to the Theory of Planned behavior, the high implementation result would explain that the residents and barangay officials’ behavior towards “no collection and no segregation policy” needs to be transformed through full observance and practice of strict segregation at source by all the residents in the community. In the study “Waste Segregation Behavior at Source: Attitude, Perceived Behavioral Control, Subjective Norm,and Environmental Education,” it was revealed that the overall factors that influenced household segregation behavior at source indicated that the respondents had a favorable behavior (Cheng et al. 2017).

Extent of Solid Waste Management Practices applied in the Barangay in the Promotion of Composting

Table 3 shows the extent of solid waste management practices applied in the barangay specifically in the promotion of composting of biodegradable wastes. Both the barangay officials and the residents “agreed” that the barangay officials, personnel, the

community and other stakeholders are actively participating in the promotion of composting of biodegradable wastes as indicated by the weighted means of 3.91 and 3.42 respectively, which is equivalent to “high” extent of implementation, meaning 61%-80% of the solid waste management program was implemented by the barangay. The result would show that the barangays are doing composting of biodegradable wastes. However, in doing so, there are challenges that hinder its full implementation.

During the interview, ABC President, Hon. Dionie Amores, strongly encouraged the rest of the Punong Barangays in Dumaguete City to really find ways to look for a lot where they could put-up a composting facility so that the biodegrable wastes segregated can be utilized as compost fertilizer, thereby lessening the garbage or waste thrown in an open dump site. In Motong, for instance, the barangay negotiated with a private land owner and asked if the barangay could use his land for the aforementioned purpose. After knowing the intention and impact of the project, the land owner openly allowed his lot to be utilized as a composting facility.

Another consideration that would somehow influence the composting practices is the social and political capital which plays a significant role in land acquisition and affects the running and sustainability of the activities when running a composting plant. Aside from that, development of less land intensive composting technologies is necessary. It is waste concern that compelled low in-come areas in Dhaka, Bangladesh to make a small barrel type composting projects. The individual and small groups of families are provided with a concrete or steel barrel where organic waste is placed and harvested as mature compost from the bottom after aperiod of four (4) months (Rouse, 2004).

The second highest weighted mean indicator for the composting of biodegradable as perceived by the Barangay Officials and residents is indicator number 2, “The conduct of training to the community on basic composting”, with a weighted mean of 3.65 and 3.34 respectively. The extent of application by the barangay officials (“highly”/implemented”) differs from that of the residents (“moderately high/moderately implemented”). These results would mean that in terms of basic know-hows on composting practices as a way of managing the solid waste, barangay officials believed to have it implemented. However, this was moderately agreed by the residents. Such result would simply mean that the conduct of training for the residents of the barangay in relation to composting is not fully observed. As a result, not all residents practice composting in their backyard.

In connection to this, according to a study “Perception of the selected Residents on Household Composting in a Highly Urbanized Area, Manila Philippines,” the residents were knowledgeable about the traditional composting where the biodegradable materials are buried in the soil. People think that this can only be done in rural areas since these places have more available lands as compared to an urban setting. Accordingly, there are controlled parameters that should be considered when conducting composting activity to achieve the optimal condition, and these factors include Carbon-to-Nitrogen ratio, shredding of materials, blending of materials,

temperature, reaction or pH level, moisture and aeration, and microorganisms involved. Once the best condition is not met, this affects the processing or it may not actually happen. One of the existing methods of composting, based on how the residents described their method, is pit composting or digging a hole where the organic wastes are to be buried (Atega et al, 2018).

For indicators 4 until 9, both the barangay officials and the residents moderately agreed with the application, which is equivalent to moderately high or moderate implementation. This finding is a result of peoples' attitude and the political will of the barangay officials. In a study on the Information Dissemination Culture in Naga City, it was revealed that despite the encouragement of the SolidWaste Management board on the use of composting and recycling, little has been achieved due to the lack of participation and lukewarm attitudes from the public (Nolasco, et al, 2019).

The moderately high extent of application could also be attributed to lack of knowledge on the technical aspects of composting like the equipment to use and the entire composting process. Another likely reason could be space constraints since urban residents have a small land area (Nsimbe et al., 2018).

The lack of support from the national government could also be the reason for the moderate extent of application on the part of the barangay officials. The lack of funding and equipment becomes one of the challenges identified in implementingan integrated solid waste management plan (Nlerum, n.d.).

Extent Of Solid Waste Management Practices Applied In The Barangay In Terms Of The Material Recovery Facility

Table 4 shows the extent of solid waste management practices applied in the barangay in terms of the Material Recovery Facility. For indicator "Necessary trainings on MRF are conducted to barangay officials and logistics assistance is provided by the local government for the collection of garbage," the barangay officials have a rating scale of 3.29, which means that the extent of application is "moderately high or moderately implemented" as perceived by the barangay officials. The need for training on operating MRF is indeed necessary. The lack of training would likely affect how the facility would function. Having personnel who lack training may result to difficulty in delivering the required output. This is supported by Elnaga et. al. (2013) who maintained that training plays a vital role in building the competencies of employees for them to perform effectively in their jobs. In putting up a material recovery facility, there are considerations in terms of parameters in the operation of the facility particularly waste generators, waste composition, waste generation, waste diversion and market requirements. Hence, knowing these things is necessary for a functional material recovery facility (Asian Development Bank).

The need for logistic assistance is also necessary especially in hauling those residual waste that can no longer be utilized in the material recovery facility. Due to lack of garbage trucks collection, disposal became a problem. In the interview, Hon. Amores

stated that they are already working and soon to implement the use of tri- bikes especially in collecting recyclable and compost wastes which shall have a minimal fee of P10.00, the proceeds of which shall be used for the maintenance of the facility and tri-bikes.

On the other hand, indicators “segregation activities are properly observed in the MRF and recyclable materials are collectively sold to junk shops and proceeds are used to fund the operation of the facility” both have a weighted mean of 3.29, which means the extent of application is “moderately high or moderately implemented” as perceived by the residents. The result reveals that only half areoperating and doing the segregation in the facility where proceeds were sold to junk shops. As stated by Hon. Amores, Barangay Junob is the pioneer in terms of the establishment of material recovery facility which performs the traditional ormanual operation. Furthermore, Head of CENRO Dumaguete Engr. Patrimonio said that not all barangays have the material recovery facility because of the availability of the land.

The barangay officials and the residents both “moderately agreed” with indicators 3, 4, 6, 7, 9 & 10. Hence, the extent of application is “moderately high or moderately implemented.” Both residents and barangay officials have the same perceptions of the extent of the application of material recovery facility based on the composite result on the extent of application. The result is strengthened by the data from observation and interview which suggest that most of the material recovery facilities of the barangays in Dumaguete City are situated in the public land and some barangays who do not have the facility because of their location.

RA 9003 mandates the establishment of a Materials Recovery Facility (MRF) in every barangay or cluster of barangays establish in a barangay-owned or -leased land determined by the barangay through its Sanggunian. The MRF shall receive mixed waste for final sorting, segregation, composting, and recycling while residual wastes shall be transferred to a long term sanitary landfill (LawPhil Project).

Despite of the mandate of RA 9003 that there should be an MRF, having MRF is not completely implemented due to some challenges. For example, the MRF in barangay Candau-ay is at present is not operational because of the area where it was installed. ABC President Hon. Amores admitted that installation of such facility in the barangay level is really difficult to attain because of some challenges in the financial aspect. Running an MRF requires logistics or transportation, equipment and most especially additional manpower. Furthermore, the establishment of material recovery facility in the different villages or community in the Philippines has been a challenge. Although this is required under the Ecological Solid Waste Management Act of 2001, it has attained a limited degree of success, which is attributed to the lack of, or incomplete, understanding of the basic aspects of material recovery facilities in terms of design, construction, and operations, as well as the parameters for a successful and sustained operation (Asian Development Bank, 2013).

In San Fernando, Pampamga, there are a total of one hundred (100) MRFs. Besides, the 35 barangays, subdivisions and schools decided to build their own facility. The city devoted resources of P150, 000 for the construction of MRF and distribution of tri-bikes and push carts for the garbage collectors of the barangay (Ranada, 2015).

On the other hand, Barangay Bayog, Los Baños, Laguna" does not have a material recovery facility. Solid waste materials collected in the barangay are brought to the material recovery facility of barangay Timugan (Almazan, C, 2016). Likewise, barangays in Tacloban City lack material recovery facilities (Zero Waste Cities Asia Series).

Extent Of Solid Waste Management Practices In The Barangay In Terms Of Promotion Of Reduce, Re-Use, Recycle

Table 5 shows the extent of solid waste management practices applied in the barangay in terms of promotion of reduce, re-use, recycle. The Barangay officials "agreed" with indicator "utilizing the other side of a used paper for printing internal communications" as revealed by a weighted mean of 3.84, which means that the extent of application is "high". This would imply that in order to maximize and utilize scratch paper, the barangay hall is implementing non-single use of paper. In this way, the barangay could save budget for stationery supplies. This initiative depicts implementers or enforcers as leading by example. People would most likely follow a leader or emulate the action if they see that the leader himself takes the lead in doing recycling initiatives.

Meanwhile, the residents "moderately agreed" with "the utilization of plastics containers, bottles and cans for other household use" as reflected in the weighted mean of 3.37, which suggests that the extent of application is "moderately high or moderately implemented." This result would mean that only 50% of the respondents believe and act what is stated in the indicator. This strengthens the findings of Almazan et al. (2016) that the respondents of the study re-use plastic bottles, bottle, and paper, but very few re-use plastic bags and metal cans. For indicators numbers 1, 2, 3, 5, 6, 7, and 8, both the barangay officials and the residents have similar perception of the extent of application, which is "moderately high or moderately implemented." The result would only explain the behavior of the residents in terms of doing reduce, re-use and recycle. This means that their behavior towards the acts is still not strong. As observed, there are still barangays who use plastic banderitas when celebrating fiestas in their area.

The 3Rs gap in action and practices is due to the lack of education and awareness, including the lack of support and allocation of 3Rs facilities (Lim et al., 2017).

City ordinance no. 231 on " No Plastic Everyday" bans the use of plastic bag in all business establishments including malls and supermarkets in the city of Dumaguete. This city ordinance helps in minimizing our solid wastes. In this policy, people will be forced to use containers or eco-bags whenever they shop. Hence, they could re-use their empty containers or bags for their purchase of goods, thereby practicing reduce

and re-use. Nevertheless, despite this city ordinance, the use of single use plastics is still existent in both supermarkets and public markets. In other words, there was no strict implementation of the ordinance. The political will to implement is so weak, which reflects Filipinos' ningas cogon mentality. That is why sustainability of the program is being questioned as not everyone is doing it.

According to Engr. Chelvier Patrimonio, in response to city ordinance "no plastic everyday," food chains and restaurants are now using biodegradable straws, and when buying food for take-out, people use recyclable plastics or paper packs instead of plastic food wraps. But then again, this remains a continuing struggle since not all are observing and practicing it.

The lack of recycling skills could be a significant barrier to recycling participation. Hence, people should be well educated how to recycle waste in practice. Moreover, the support systems and perceived recycling skills are crucial factors to be the key of people's decision to drive their recycling intention to the actual action (A. Ittiravivongs, 2011).

Extent Of Solid Waste Management Practices In The Barangay In Terms Of Collection and Disposal

Table 6 shows the solid waste management practices applied in the barangay in terms of the collection and disposal of solid waste. It is shown that the open-fire burning is strictly prohibited in the barangay and disposal of garbage in lakes, rivers and seas is punishable by law as indicated by the weighted mean of4.02; therefore, the extent of application is "high" as perceived by the barangay officials.

The result would imply that the barangay officials are somehow enforcing penalties to violators in relation to disposal of solid waste. Still, in some rural areas in the Philippines, burning of yarn waste is still practiced in the barangay level despite the law prohibiting it (Abueva et al., 2016). As stipulated in RA 9003, open burning of solid waste as well as littering, throwing, dumping of waste matters in public places, such as roads, sidewalks, canals, esteros or parks, and establishment, or causing or permitting the same is prohibited. Violation of the law would mean penalty or fines of not less than Three hundred pesos (P300.00) but not more than One thousand pesos (P1,000.00) or imprisonment of not less than one (1) day but not more than fifteen (15) days, or both; and upon conviction, the violator shall be punished with a fine of not less than Three hundred pesos (P300.00) but not more than One thousand pesos (P1,000.00) or render community service for not less than one (1) day to not more than fifteen (15) days to an LGU where such prohibited acts are committed, or both, respectively (The Lawphil Project).

On the other hand, the residents in the barangay "agreed" with "regular schedule of collection of garbage is observed" as indicated by the weighted mean of 3.70. This implies that the extent of application is "high". In other words, the residents believed that the city is collecting garbage regularly. However, this contradicts the statement of the

CENRO Head of the city who claimed that the collection of garbage in the barangay has also been a challenge since the city only has five (5) garbage trucks that collect the garbage of the entire city and there are also days that the personnel in charge of collecting fail to go to work. Thus, it would take days to collect the garbage from other barangays. Hon. Amores emphasized that segregation at source would help maximize the use of garbage trucks since only the residual wastes are collected as they can no longer be used. Both the residents and barangay officials “agreed” with indicators 1, 2, 5, 6, and 8. Hence, the extent of application is “high.”

Both groups of respondents “moderately agreed” with indicators 9 and 10, which means that the extent of application as “moderately high/moderately implemented.” Overall, the composite weighted mean description is “agree” and the extent of application is ”high” as perceived by both barangay officials and residents.

The result would reveal that both barangay officials and residents believed that the indicators are being done and implemented although it may not be a full implementation. For instance, in Barangay Bantayan where it currently has 5 waste collection vehicles and 7 wastes collectors working 3 times a week, the garbage from the households dropped by 20% and amazingly 92% of their biodegradable wastes also dropped because the residents are practicing composting (Pagunsan, 2019).

In Barangay Looc, a barangay ordinance was passed whereby enforcers, sweepers, and the so-called waste heroes or the collectors, are tasked to collect all types of garbage daily from more than 1,000 households with a fee of PHP30 a month (Gallarde, 2018).

Under the RA 9003, collection, transport and disposal of solid wastes are the responsibilities of the local government units (LGUs). Most local government units, at present, administer their own collection systems or contract this service out to private contractors. Like in the case in Metro Manila, the common types of collection vehicles are open dump trucks and compactor trucks. About 40 to 85 percent of solid wastes are generated nationwide while it is 85 percent in Metro Manila. The poorer areas of cities, municipalities, and rural barangays are typically unserved or under-served. As a result, the uncollected waste ends up mostly in rivers, esteros and other water bodies, thus, polluting major water bodies and clogging the drainage systems, which cause flooding during heavy rains. Accordingly, the 85 percent collection rate of Metro Manila is above the average collection rate of other cities in the Philippines (around 69%) and among East Asia and Pacific countries (around 72%). The general practice of solid waste disposal in the country remains open dumping as controlled dumpsites and sanitary landfills are very limited. However, the number of sanitary landfills is insufficient to serve all the LGUS (Senate of the Philippines, 2017).

Extent of the Challenges Encountered in The Implementation of The Solid Waste Management Practices in The Barangay

Table 7 shows the extent of the challenges encountered in the implementation of the solid waste management practices in the barangay. Based on the results, barangay officials perceived that the lack of garbage truck units in the city, shortage of the number of garbage collectors and the lack of community involvement are “serious” challenges as revealed by the weighted mean of 3.47, 3.43 and 3.42 respectively. This would imply that the lack of garbage trucks would put the health of the residents at risk due to exposure to the pungent smell of the garbage. This would also affect the efficiency of collection due to the lack of garbage trucks and shortage of garbage collectors. In Tha Khon Yan Subdistrict Municipality in 4.21 – 5.00 Very Serious 3.41 – 4.20 Serious 2.61 – 3.40 Moderately Serious 1.81 – 2.60 Less Serious 1.00 – 1.80 Not a Problem Thailand, for instance, having inadequate waste collection vehicles was one of the barriers for effective municipal solid waste management. The waste collection trucks were always full before it reached the end of their routes (Yukalang et al., 2017). Past studies also reported that the low number of waste vehicles for collection negatively affects the collection, transfer and transport process of garbage (Sulemana et al., 2018).

The lack of garbage truck as a serious problem does not equate to indicato rno. 3 in Table 6, which is “garbage is properly disposed through a garbage truck,” with high extent of implementation as perceived by both barangay officials and the residents. The latter illustrates only the means on how the garbage is brought to the designated dump site. Moreover, it talks about the system concerning how the garbage is handled and not disposed anywhere. It does not correlate with the number of units of the garbage trucks. The lack of garbage trucks is relatively linked to the efficiency of the collection or pick-up of the garbage.

Indicator “weak information and education campaign” was perceived by the barangay officials as a “moderately serious problem,” while it was perceived by the residents as a “serious problem.” Comparing it to the result presented in Table 5, indicator 4 “trainings are conducted to the community on how to reduce, re-use and recycle” was perceived by the barangay officials as highly implemented, while it was perceived by the residents as moderately implemented. The weak information and education campaign was perceived by the residents as a serious problem as this indicator may refer to all practices and other information and trainings relevant to solid waste management. As perceived by the residents, the moderate extent of implementation of training on reduce, re-use and recycle points out only to that specific training and does not include all other practices.

Another inconsistency in the perception of both the residents and the barangay officials is the problem with regard to “no provision of public garbage bins” in which the barangay officials perceived it as a moderately serious problem while the residents perceived it as a serious problem. However, there is inconsistency in the results shown in Table 2. Indicator “provision of communal garbage bins especially to areas which are not accessible by the garbage truck” was perceived by the residents as highly

implemented while it was perceived by the barangay officials as moderately implemented. The inconsistency of the perceptions could be because the problem of “no provision of public garbage bins” may refer to the giving of bins to all the residents in the barangay. Besides, the provision of communal garbage bins as shown in Table 2 clearly specifies to areas where entry of garbage truck is impossible. Thus, it does not equate to provision of the public garbage bins.

Community involvement is also important in addressing solid waste challenges. Since the problem comes from the community, the community is the ultimate waste generators. Therefore, its active participation and involvement especially in coming up with a solution is very important. The lack of attendance to meetings, lack of engagement in programs, and negative attitudes are just among the manifestations of lack of community involvement. One of the common reasons for the lack of community participation in solid waste management activities is busy schedules (Almazan et al., 2016).

It is likely that community participation offers benefits such as building local capacities and capabilities. This means that community participation may for instance increase awareness of knowledge and capacities that could improve the ability to negotiate as equals with authorities and other stakeholders in order to promote common objectives, and increase responsiveness to conflicts within the community. Aside from that, involvement in decision-making can ensure that the different needs and problems of the community are integrated into the project’s objectives. This would also help empower the community, affording people the opportunity to devise and initiate strategies to improve their situation (Subash, n.d.).

On the part of the residents, all indicators enumerated as the challenges encountered in the barangay were perceived by the residents as serious. This means that the residents somehow felt and experienced those challenges in their respective communities. They find that those challenges enumerated are present and in need of solution. For example, the City Environment and Natural Resources Office is amenable that the lack of garbage trucks is true and existent. Likewise, Hon. Dionie Amores claimed that community involvement and lack of funds and technical capability readiness were also some of the constraints affecting solid waste management practices of every barangay in Dumaguete City.

The difference in perception of the challenges encountered in the barangay is due to the difference in involvement and responsibility in solving the challenges encountered. Barangay officials would most likely find the challenges as moderately serious since they are the implementers and enforcers of the solid waste management practices. On the other hand, the residents who are the recipient of the services of the barangay would most likely think and observe the challenges as serious as it may somehow influence their satisfaction level.

Difference in perceptions are due to a number of factors which creates perceptual filters or cultural frames that influence our responses to situation, such as:

culture, race, and ethnicity; gender and sexuality ; and knowledge and previous experiences (University of Wisconsin-Madison, Office of the Human Resource Development).

Relatively, study entitled “The Perception of Households About Solid Waste Management in Malaysia”, found out that there is a strong positive relationship between age and waste reduction behaviors. And the majority of the respondents agreed that their lifestyle affected waste minimization. Almost half of the respondents indicated that they lacked knowledge to practise waste sorting. Aside from that, age and education were positively correlated to reuse and recycling behaviors. Hence, a holistic waste management education is vital for Malaysia to build an efficient waste management system.(Choon, et al, 2017).

In Cebu City, there were barriers in the implementation of solid waste management. The city is particularly experiencing on-going funding difficulties related to hiring of waste management staff, and procurement of the necessary SWM facilities, technology and equipment. In addition, bureaucratic obstacles hindered effective policy coordination and implementation because of non- continuous operation that is caused by the shifting political priorities of subsequent administrations. In addition, a number of barangay officials have limited understanding of the implementation procedures of RA 9003 (Gamaralalage et al., 2017).

As far as waste collection is concerned, the city introduced separate waste collection systems to prevent mixed waste generation at source. However, it has been proven difficult to implement due to financial constraints and weak levels of public awareness and compliance (Gamaralalage et al., 2017).

Conclusions

The data reveals that the solid waste management practices in the barangay are perceived positively by both barangay officials and residents, though with varying degrees of effectiveness and challenge. The creation of the Barangay Solid Waste Management Committee is highly regarded by both groups, with barangay officials rating it at 4.00 and residents at 3.61, indicating strong institutional support. The "No Segregation, No Collection" policy also receives high ratings, with officials at 3.47 and residents at 3.41, demonstrating a broad compliance with segregation mandates. Composting of biodegradable waste and the establishment of a Material Recovery Facility are seen as moderately high, with officials and residents rating these aspects in the low to mid-3 range, showing some room for improvement. The promotion of the Reduce, Reuse, and Recycle (3R) initiative is also moderately high, suggesting ongoing but not fully effective efforts in waste reduction strategies. The collection and disposal of solid waste are well-rated, with officials at 3.73 and residents at 3.51, indicating general satisfaction with these services. However, challenges are perceived more severely by residents (3.60) compared to barangay officials (3.29), highlighting a potential disconnect in understanding or communication about the difficulties faced in managing solid waste. Overall, while there is a strong foundation and positive reception of waste

management practices, there is a need for better communication and perhaps more robust strategies to address the challenges perceived by the community.

Recommendations

Based on the results of the study, the researcher proposed the nee to revisit the national policy on Ecological Solid Waste Management Act to where ordinances was based from in order to determine areas for improvement for an effective and strong top-to-bottom enforcement and implementation. Meanwhile, on the part of the LGU of Dumaguete, the city must allocate budget for the equipment, facilities and capability building of its personnel in the CENRO and barangay officials relative to the community that can address the solid waste management challenges. On the other hand, the National Government should assist and help the Local Government especially in the barangay level in the implementation of RA 9003 in terms of technical know-how, strong enforcement from the top down to the bottom of the hierarchy, clear alignment and doable direction of the program.

Since there is decentralization at the barangay level in the implementation of RA 9003, barangays should come-up with a PESTLE analysis that would help identify possible constraints, challenges, challenges and opportunities in the implementation of an effective solid waste management. Through that, they could come-up with appropriate solutions or programs.

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DIGITAL TRANSFORMATION AND CUSTOMER EXPERIENCE AMONG SOCIAL SECURITY SYSTEM CLIENTS IN CALAMBA CITY

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ABSTRACT

This study identified the level of effectiveness of digital transformation and customer experiences with digital services among Social Security System clients in Calamba City. A descriptive correlational research method design was used to investigate the relationship between variables. The goal of this study was to understand how the efficacy of digital transformation and the level of customer experience of SSS clients on its digital services related to one another. A total of 215 respondents were selected through purposive sampling, meeting the specific relevant criteria of using the agency's digital services. The study utilized a researcher-made instrument in the form of a survey questionnaire in print and Google Forms, depending on the respondents' preference. A four-point Likert scale, simple mean, and the Pearson product-moment correlation coefficient were employed in the study. The results showed that the effectiveness of the digital transformation was at a very high level and was verbally interpreted as highly effective, while the customer experience yielded a very pleasing outcome and was verbally interpreted as very pleasant. Furthermore, the study revealed a significant relationship between digital transformation effectiveness and the level of customer experience in SSS digital services. This suggested that as the level of digital transformation effectiveness increased, the customer experience became more pleasant. Based on the findings, an action plan was proposed to address noted deficiencies and enhance the clientele's experience with SSS digital services.

Keywords: *Digital transformation, Customer experience*

INTRODUCTION

The global corporate economy benefits from digitalization. Businesses and their clientele are constantly evolving as a result of advancements in digital technology and their ongoing expansion. Recent unexpected events that rock the world have a significant impact on numerous businesses and organizations. It open doors to new company ventures, cutting-edge technology, popular corporate concepts, and a shift in consumer viewpoints.

Digitalization is made possible by the increase use of the internet, social media, and technology. Research made by Jaumotte et al. (2023) showed that not only did large companies benefit, but smaller businesses also gained higher returns from digitalization. Due to several contributing factors that led to the adoption and utilization of digital technology, organizations became more agile in responding to shifting market conditions and became ready for digital transformation.

Digital transformation entailed more than just the simple adoption of technology (Ivančić et al., 2019). To properly utilize the potential of digital technologies, firms had to rethink and reinvent current business models and processes. This resulted in significant shifts in how businesses operated, engaged with customers, and delivered value as explained by Mishra et al. (2023).

One of the key drivers is the rapid growth of the country's digital economy. Exito Media Concept (2022) reported that the Philippines had high internet and mobile penetration rates among all of Southeast Asia, creating new opportunities for businesses to grow and interact with clients.

Kemp (2023) cited in a report on Digital 2023 Philippines, stated that there were 85.16 million internet users at the beginning of 2023, with a 73.1 percent internet penetration rate. Additionally, it was reported that there were 84.45 million social media users, representing 72.5 percent of the total population. These headline statistics provided an excellent picture of the "state of digital" in the Philippines.

The Philippines had more exposure to internet usage and social media compared to other countries. However, it was noted that most users did not make use of its educational opportunities or business growth potential. Instead, they predominantly engaged in social media like Facebook, Instagram, and Tiktok. This tendency resulted in gaps in digital skills, as mentioned in an interview with a top official of the Department of Information and Communications Technology (DICT). Meanwhile, other nations made good use of their internet access for various purposes such as government transactions, business creation, employment, education, and learning as claimed by Clapano (2023).

Providing government clients with a great experience is challenging due to the multitude of services to offer, departments to oversee, and procedures to streamline. Moreover, consumers expect a technology-driven, fast, and personalized service similar to what the private sector provided. According to Nelson (2023), citing the IDC Analyst

Brief, governments were the world's largest service providers. However, when it came to customer satisfaction with digital service delivery, the public sector continued to lag behind practically every other sector in terms of efficiency and ease of government process.

As mandated by RA 11032 known as the Ease of Doing Business and Efficient Government Service Delivery Act of 2018, and the Full Digital Transformation Act of 2020 (Senate Bill No. 1793), which mandated the full digital transformation of all government agencies and other offices, the SSS management responded by improving its processes and services through digitalization. The electronic services of SSS are introduced to the public and a few of its services became available online. These digital transformations are hastened during the COVID-19 pandemic when a zero-contact policy was implemented, facilitating ease of procedures. Some of the advantages include improved efficiency in service delivery, such as streamlining of business processes, accessibility of products and services, global awareness, and transparency in processes and procedures. Some services, such as salary loan applications, SS number applications, and sickness and maternity benefits applications become mandatory to file through the SSS web portal.

Due to the increasing number of SSS members with about 42.56 million members, 32.27 being employed members and the remaining consisting of self-employed individuals, voluntary contributors, and Overseas Filipino Workers (OFWs), and with an SSS workforce of around 6,300 (SSS Facts & Figures, August 2023), satisfying the needs of each individual member, whether through manual or digital platforms, posed a significant challenge for the agency.

With the given concept, this study identifies if digital government services can enhance or elevate the expectations for positive customer experiences or create negative experiences that could lead to customer complaints. This research also seek to identify any gaps in digital platforms that may have an impact on the agency's level of service. Additionally, it aims to determine whether the digital transformation increase service efficiency or demoralize clients who find it difficult to adjust to new procedures. Furthermore, the study aims to ascertain what measures the company can have developed to minimize customer complaints and entice more clients to use the online platform rather than the manual procedure.

Summary of Related Literature

The research studies and literature provided a complex and multidimensional picture of digital transformation and customer experience. Thus, this research attempted to create a more sophisticated understanding of the connections between digital transformation and customer experience by integrating the existing literature.

Fitzgerald et al. (2014, as cited in Kraus et al., 2021), Zaoui and Souissi (2020), Fang (2002, as cited in Mohsen & Magdi, 2022), and Verhoef et al. (2021), emphasized

the need for a clear strategy, use of emerging technologies, customer experience, as well as benefits and challenges involved.

Meanwhile, Van Veldhoven and Vantienen (2022), RTG Solutions Group (2023), Borges et al. (2020), Awadhi et al. (2021), and Collins (2023), highlighted the importance of embracing digital transformation to satisfy customers, deliver tailored experiences, and raise customer satisfaction levels.

Whereas, Albukhitan (2020), Wang et al. (2020, as cited in Mohsen & Magdi, 2022), Matt et al.(2015, as cited in Hanelt et al., 2021), and Tekic and Koroteev (2019) all recognized that enterprises needed a clearly defined digital transformation strategy to effectively integrate digital transitions, promote innovation, and foresee and respond to changes.

On the other hand, Correani et al. (2020), Pearce (2020), Gokalp and Martinez (2021), Mikalef and Parmiggiani (2022), Xiao et al. (2022), Mergel et al. (2019), and Van Veldhoven and Vanthienen (2022) collectively stressed the transformative impact of technology on value creation, customer-centricity, and the challenges faced by businesses in adapting to new technologies.

Accordingly, Mishra et al. (2023), Yu et al. (2022), and Tian et al. (2023) all claimed how important it was to take into account the organizational context, modify internal procedures, include digital services, and acknowledge the broader scope and effects of digital transformation on operations.

Likewise, Ivančić et al. (2019), Butt et al. (2024), Brunetti et al. (2020), Udovita (2022), and Deep (2023) emphasized the essential of creating a digital culture, viewing digital transformation as an ongoing process, and utilizing culture as a mechanism to drive the adoption of digital technology.

Meanwhile, Alvarenga et al. (2020), Xiao et al. (2022), Access Partnership (2023), Reganit (2023), and Carlos (2023) all acknowledged the necessity of public digital literacy and central government support in achieving successful digitalization results while highlighting technological preparedness, organizational efficiency, public service delivery, and public expectations.

Together, Oracle (2023), McKinsey and Company (2022), Roy et al. (2022), Bascur and Rusu (2022), Becker and Jaakkola (2021), and Waqas et al. (2021) stressed the significance of providing superior customer experiences and value; emotional engagement; the connection between customer experience and customer commitment.

Meanwhile, Heller et al. (2021), Watts (2020) and Hadid et al. (2022) collectively acknowledged that utilizing visual components and making sure the user experience was smooth and aesthetically pleasing were key to giving digital services a sense of tangibility.

Conversely, Ranchordas (2021), Khan (2023), and Mathis (2021) all underlined the significance of empathy in fostering understanding, support, and positive outcomes across various contexts.

On one hand, Gupta (2024), TAFF Inc. (2021), Susanto et al. (2023), and Khatoon et al. (2020) collectively emphasized the necessity of businesses to adapt to digital platforms to satisfy consumers' preferences for reliable and safe online services, convenience, and security, as well as customer confidence in internet services and privacy protection.

On the other hand, TAFF Inc. (2021), Chen et al. (2021), and Korach (2023) highlighted the relevance of responsiveness in digital services as it enhanced client contentment, trust, and loyalty were enhanced by prompt and effective replies, individualized experiences, and problem-solving.

Consequently, Watts (2020), Janota (2023), and Wipro (2023) explained that assurance was essential in the digital world as it encompassed compliance, security, and trustworthiness to create successful digital platforms.

Moreover, Moore (2023), RTG Solutions Group (2023), Lund (2023), Masoud and Basahel (2023), and Elev8tek (2024) emphasized that prioritizing customer-centric digital transformation, leveraging advanced technologies and real-time data, enabled businesses to deliver highly tailored, effective, and fulfilling experiences that met evolving needs.

In summary, the authors collectively recognized the importance and challenges of digital transformation based on five business dimensions. They also acknowledged the significance of service quality theory in understanding customer experience. Furthermore, they highlighted the vital role that digital transformation plays in enhancing customer experience.

After conducting a comprehensive review of the literature on digital transformation, it was observed that the majority of studies focused on the adoption of technology and its impact on customer experience in businesses. However, few studies investigated digital transformation based on the core dimensions of business and its relationship with customer experience in government digital services. Some existing literature and body of knowledge was lacking or unclear, thus, some potential conceptual gaps were tried to address. Therefore, this study sought to examine and integrate the implications of emerging digital technologies and customer behavior and experiences on government digital services that had not been effectively addressed in existing literature.

Furthermore, no study had been conducted in Calamba City regarding digital transformation and its effect on customer experience. Therefore, this study aimed to bridge this spatial gap and contribute to the expansion of understanding of digital transformation and customer experience within government agencies.

Research Questions

This study focused on the relationship between digital transformation and customer experience as assessed by clients of Social Security System in Calamba City. Specifically, this study aims to address the following questions:

1. What is the level of digital transformation effectiveness in SSS as assessed by clients in terms of:
    1.1 customer,
    1.2 strategy,
    1.3 technology,
    1.4 operations, and
    1.5 organization and culture?
2. What is the level of customer experience on digital services among SSS clients in terms of:
    2.1 tangibility,
    2.2 empathy,
    2.3 reliability,
    2.4 responsiveness, and
    2.5 assurance?
3. Is there a significant relationship between the level of digital transformation effectiveness and the level of customer experience in SSS digital services?
4. Based on the findings of the study, what action plan may be proposed?

METHODOLOGY

The design used in this study was descriptive correlational design which aimed to examine how variables relate to one another and explain their features without suggesting a cause. According to Creswell (2012, as cited by Sharma, 2023), it was a non-experimental quantitative design in which the researcher used correlational statistics to assess and characterize the degree of relationship between variables or sets of scores. This design aimed to provide significant insights into associations between variables through data collection and analysis. Descriptive correlational design contributed to the body of knowledge and served as a baseline for future research and exploration.

Locale

The study involved the participation of SSS clients who transacted at the SSS Calamba Branch and had used the SSS online platform. This locale was chosen where the researcher was an employee who had easy access to any needed information and had actual involvement in the phenomenon.

Population and Sampling

This study used purposive sampling, wherein participants who were chosen possessed the desired experiences or met the specific characteristics relevant to the

topic. GPower application was utilized in computing the actual sample based on daily walk-in clients. The estimated sample size from an average 1000 population of daily walk-in clients was approximately 215 respondents with a 95% confidence level and 5% margin of error.

Instrument

A survey questionnaire was used as the main instrument to obtain the necessary data needed for the study. Researcher-made questionnaires with tailored questions aligned with the study were used. The survey questionnaire for the respondents was composed of three parts. The first part consisted of the profile of the clients; the second part assessed the effectiveness of digital information perceived by clients and third part focused on the client's customer experience with SSS digital services.

The participants of the study answered part 2 and 3 using a 4-point Likert scale survey. The following components make up the scaling:

Scale for the Level of Effectiveness of Digital Transformation

Range	Scale	Categorical Response	Verbal Interpretation
3.25 – 4.00	4	Strongly Agree	Highly Effective
2.50 – 3.24	3	Agree	Effective
1.75 – 2.49	2	Disagree	Slightly Effective
1.00 – 1.74	1	Strongly Disagree	Not Effective

Scale for the Level of Customer Experience on Digital Services

Range	Scale	Categorical Response	Verbal Interpretation
3.25 – 4.00	4	Strongly Agree	Very Pleasant
2.50 – 3.24	3	Agree	Pleasant
1.75 – 2.49	2	Disagree	Slightly Pleasant
1.00 – 1.74	1	Strongly Disagree	Unpleasant

Validation of Instrument

The research-made survey instrument was presented to an adviser for review, and necessary modifications were made before submitting it for approval by the Dean. Afterward, the instrument was sent to 5 expert validators: the Research Director, Statistician, MBA Professor, and two of the highest-ranking Executive Officers of the company. The Content Validity Index (CVI) was then calculated based on the ratings obtained from a panel of experts who evaluated each question or item in the measurement instrument. The result of CVI was 1, which was higher than 0.99, indicating excellent content validity and deemed acceptable.

After the validation of instruments, they were sent out to 15 participants for pilot testing. The survey results were collected and subjected to Alpha Cronbach analysis for reliability testing. Cronbach's alpha results were .961 for digital transformation and .969 for customer experience, which indicated excellent internal consistency reliability. The results were deemed acceptable by the statistician who performed the analysis. With the instrument now ready, it could be distributed to the intended respondents.

Data Gathering Procedure

The letter had been presented to the branch manager before the study to obtain permission to administer a survey questionnaire to walk-in members who transacted at the Calamba Branch. Upon approval, the researcher determined the participants using purposive sampling wherein the participants were chosen based on the characteristic that they had already used the online services of SSS in their transactions. The researcher handed out the printed survey questionnaires or used Google Forms, depending on the applicable method, to the respondents. After providing the respondents with sufficient time to answer the questionnaire, the responses were collected and organized. After all the responses had been gathered, a statistician assisted the researcher in the process of tabulating and analyzing the data. The survey was conducted for five days until the desired number of participants had been reached and completed.

Treatment of Quantitative Data

The following statistical treatment was utilized during the research study:

1. The level of effectiveness of the digital transformation and the level of customer experience with SSS digital services were measured using a mean and a four-point Likert scale.
2. The significant relationship between the level of digital transformation effectiveness and the level of customer experience in SSS digital services was evaluated using the Pearson Product-Moment Correlation Coefficient.

Scope and Delimitation

This quantitative descriptive correlational study focused on the effectiveness of digital transformation in SSS through mandatory digital services rendered by the company and addressed its digital capability in terms of five core dimensions: customers, strategy, technology, operations, and organization and culture. The digital platform studied was anchored on the SSS website and SSS mobile app with services available such as SS number application, registration to the SSS portal, benefit claim application, loan application, disbursement account enrollment, payment reference number generation, updated contact information, access to member's records and others. Furthermore, the research concentrated on the application of service quality to assess customer experience through five service dimensions namely tangibility, reliability, responsiveness, assurance, and empathy.

Since this study was limited to members or clients who engaged in online transactions using the SSS website or SSS mobile app, respondents came from the Calamba Branch E-Center facility, a self-service electronic center with available computers used by clients for their online transactions with minimal assistance or intervention from SSS employees. Other respondents interviewed were walk-in clients who had previously or continuously used the SSS online services for mandatory online transactions. The total number of respondents was 215, comprising clients of the SSS Calamba Branch.

RESULTS

Table 1.1

Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Customer

Indicators in terms of Customer	*X*	VI	Rank
1. The agency, digital transformation efforts have improved my experience and met my needs and expectations as a customer.	3.65	HE	1
2. My involvement and interactions on the agency's digital platforms have increased.	3.55	HE	4
3. I am pleased with the online services provided by the agency.	3.64	HE	2
4. The agency promptly addresses my feedback and resolves issues through digital channel.	3.43	E	6
5. The agency enhances its digital services to match my changing needs.	3.53	HE	5
6. My overall satisfaction and loyalty as a customer increased due agency's digital transformation.	3.59	HE	3
GENERAL ASSESSMENT	**3.57**	**HE**	

Legend: 3.25 – 4.00 Highly Effective (HE) 1.75 – 2.49 Slightly Effective (SE)
2.50 – 3.24 Effective (E) 1.00 – 1.74 Not Effective (NE)

Table 1.2

Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Strategy

Indicators in terms of Strategy	*X*	VI	Rank
1. The agency is effectively implementing its roadmap to digitalization.	3.56	HE	3
2. The agency has communicated its digital strategy to its stakeholders.	3.54	HE	4
3. The agency's digital strategy aims to deliver continuous improvements to its services and add value to customers.	3.64	HE	1
4. The agency's digital transformation efforts are aligned with industry standards and adopt the latest technological advancements.	3.58	HE	2
GENERAL ASSESSMENT	**3.58**	**HE**	

Legend: 3.25 – 4.00 Highly Effective (HE) 1.75 – 2.49 Slightly Effective (SE)
2.50 – 3.24 Effective (E) 1.00 – 1.74 Not Effective (NE)

Table 1.3

Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Technology

Indicators in terms of Technology	*X*	VI	Rank
1. The agency keeps up with emerging technologies and adapts them to digital transformation initiatives.	3.65	HE	1
2. I am very satisfied with the use and function of the agency's digital tools and platforms.	3.64	HE	2.5
3. I am quite confident in the agency's ability to ensure the security of its digital systems and protect the privacy of my data.	3.64	HE	2.5
4. I have not encountered any challenges or difficulties in using new digital technologies implemented by the agency.	3.13	E	6
5. I am pleased with the speed and performance of the agency's digital systems and applications.	3.27	HE	5
6. The agency's digital services work smoothly and are compatible with any existing operating systems and devices.	3.38	HE	4
GENERAL ASSESSMENT	**3.45**	**HE**	

Legend: 3.25 – 4.00 Highly Effective (HE) 1.75 – 2.49 Slightly Effective (SE)
2.50 – 3.24 Effective (E) 1.00 – 1.74 Not Effective (NE)

Table 1.4

Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Operations

Indicators in terms of Operations	*X*	VI	Rank
1. The agency's digital transformation has significantly streamlined its processes and improved the efficiency of their transactions.	3.57	HE	1
2. Digital technologies and automation have enhanced the agency's ability to deliver products or services in a timely manner.	3.51	HE	3
3. Digital transformation has resulted in a improved communication and collaboration with customer.	3.55	HE	2
4. I believe the agency's digital operations are quite dependable, with minimal instances of downtime or disruptions.	3.40	HE	4
GENERAL ASSESSMENT	**3.51**	HE	

Legend: 3.25 – 4.00 Highly Effective (HE) 1.75 – 2.49 Slightly Effective (SE)
2.50 – 3.24 Effective (E) 1.00 – 1.74 Not Effective (NE)

Table 1.5

Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Organization and Culture

Indicators in terms of Organization and Culture	*X*	VI	Rank
1. The agency shows an immediate response in adapting digital transformation.	3.58	HE	5
2. I have observed major changes in the processes or transactions as a result of agency's digital transformation.	3.62	HE	4
3. The staffs are equipped with abilities and knowledge required to take part in digital transformation process.	3.80	HE	1
4. The agency has established effective communication channels to ensure that customers are well- informed and actively involved in digital transformation initiatives.	3.65	HE	3
5. The agency continues to develop and strengthens its digital processes and capabilities.	3.73	HE	2
GENERAL ASSESSMENT	3.67	HE	

Table 2.1

Level of Customer Experience on Digital Services among SSS Clients in terms of Tangibility

Indicators in terms of Tangibility	***X***	**VI**	**Rank**
1. The design of digital platforms (SSS website and mobile app) is visually appealing and user-friendly.	3.57	VP	3
2. The digital service of the agency provides relevant and up-to-date information.	3.70	VP	1
3. It is easy to access and find needed information or services on the digital platforms of the agency.	3.55	VP	4
4. The digital service works on a variety of devices and platforms.	3.45	VP	5
5. The agency's digital profile reflects a modern and respectable image.	3.67	VP	2
GENERAL ASSESSMENT	**3.59**	**VP**	

Legend: 3.25 – 4.00 Very Pleasant (VP) 1.75 – 2.49 Slightly Pleasant (SP)
2.50 – 3.24 Pleasant (P) 1.00 – 1.74 Unpleasant (U)

Table 2.2

Level of Customer Experience on Digital Services among SSS Clients in terms of Empathy

Indicators in terms of Empathy	***X***	**VI**	**Rank**
1. The digital platforms cater to my individual needs and preferences.	3.70	VP	1
2. The digital service provides me with personalized experience and recommendations.	3.66	VP	2
3. I receive prompt and helpful customer support in using digital channels.	3.54	VP	4
4. I find the agency's availability and accessibility through diverse channels for support and assistance to be fulfilling.	3.55	VP	3
5. The agency understands and empathizes with the difficulties I encounter in adopting and utilizing digital tools.	3.53	VP	5
GENERAL ASSESSMENT	**3.60**	**VP**	

Legend: 3.25 – 4.00 Very Pleasant (VP) 1.75 – 2.49 Slightly Pleasant (SP)
2.50 – 3.24 Pleasant (P) 1.00 – 1.74 Unpleasant (U)

Table 2.3

Level of Customer Experience on Digital Services among SSS Clients in terms of Reliability

Indicators in terms of Reliability	*X*	VI	Rank
1. The digital platforms are available and accessible when I need it.	3.46	VP	4
2. The digital service performs accurately without any errors or interruption.	3.26	VP	5
3. I am satisfied that the digital services are delivered with consistent speed and responsiveness.	3.47	VP	3
4. I am confident that the digital service ensures data security and privacy.	3.63	VP	1
5. The digital system and processes of the agency deliver precise and current information.	3.62	VP	2
GENERAL ASSESSMENT	**3.49**	**VP**	

Legend: 3.25 – 4.00 Very Pleasant (VP) 1.75 – 2.49 Slightly Pleasant (SP)
2.50 – 3.24 Pleasant (P) 1.00 – 1.74 Unpleasant (U)

Table 2.4

Level of Customer Experience on Digital Services among SSS Clients in terms of Responsiveness

Indicators in terms of Responsiveness	*X*	VI	Rank
1. The digital service promptly acknowledges my queries or complaints.	3.43	VP	5
2. The digital platforms provide timely updates and notifications regarding my transactions.	3.62	VP	2
3. The agency takes proper measure to resolve my concerns regarding digital services.	3.59	VP	3
4. The agency seeks feedback from its clients to improve its digital services.	3.63	VP	1
5. My feedback and suggestions regarding digital transformation efforts are highly valued and prioritized by the agency.	3.47	VP	4
GENERAL ASSESSMENT	**3.55**	**VP**	

Legend: 3.25 – 4.00 Very Pleasant (VP) 1.75 – 2.49 Slightly Pleasant (SP)
2.50 – 3.24 Pleasant (P) 1.00 – 1.74 Unpleasant (U)

Table 2.5

Level of Customer Experience on Digital Services among SSS Clients in terms of Assurance

Indicators in terms of Assurance	*X*	VI	Rank
1. The digital service provides transparent and accurate information about its products and services.	3.63	VP	4
2. The digital service has a user-friendly platform that is easy to navigate.	3.52	VP	5
3. The staff is competent in providing adequate knowledge and assistance regarding my digital transactions.	3.77	VP	1
4. I feel confident in the integrity and trustworthiness of the digital services of the agency.	3.71	VP	3
5. I believe my personal information is secure when using the agency's digital platforms and services.	3.74	VP	2
GENERAL ASSESSMENT	**3.68**	**VP**	

Legend: 3.25 – 4.00 Very Pleasant (VP) 1.75 – 2.49 Slightly Pleasant (SP)
2.50 – 3.24 Pleasant (P) 1.00 – 1.74 Unpleasant (U)

Table 3

Test of Significant Relationship between the Level of Digital Transformation Effectiveness and the Level of Customer Experience in SSS Digital Services

Digital Transformation Effectiveness	Customer Experience	r value	p value	Remarks	Decision
Customer	Tangibility	.736**	.000	Significant	Reject H_o
	Empathy	.636**	.000	Significant	Reject H_o
	Reliability	.713**	.000	Significant	Reject H_o
	Responsiveness	.668**	.000	Significant	Reject H_o
	Assurance	.642**	.000	Significant	Reject H_o
Strategy	Tangibility	.744**	.000	Significant	Reject H_o
	Empathy	.679**	.000	Significant	Reject H_o
	Reliability	.748**	.000	Significant	Reject H_o
	Responsiveness	.710**	.000	Significant	Reject H_o
	Assurance	.751**	.000	Significant	Reject H_o
Technology	Tangibility	.800**	.000	Significant	Reject H_o
	Empathy	.697**	.000	Significant	Reject H_o
	Reliability	.863**	.000	Significant	Reject H_o
	Responsiveness	.718**	.000	Significant	Reject H_o
	Assurance	.705**	.000	Significant	Reject H_o
Operations	Tangibility	.804**	.000	Significant	Reject H_o
	Empathy	.721**	.000	Significant	Reject H_o
	Reliability	.795**	.000	Significant	Reject H_o
	Responsiveness	.708**	.000	Significant	Reject H_o
	Assurance	.707**	.000	Significant	Reject H_o
Organization and Culture	Tangibility	.741**	.000	Significant	Reject H_o
	Empathy	.758**	.000	Significant	Reject H_o
	Reliability	.643**	.000	Significant	Reject H_o
	Responsiveness	.714**	.000	Significant	Reject H_o
	Assurance	.771**	.000	Significant	Reject H_o

**Correlational at the level 0.01 *Correlational at the level 0.05(Two-tailed)

Table 4

Proposed Action Plan

AREAS OF CONCERN	GOALS/ OBJECTIVES	STRATEGIES/ ACTIVITIES	TIME FRAME	PERSONS INVOLVED	SOURCE OF FUND	SUCCESS INDICATORS
Technology	To address difficulties in using new technologies	1. Make the new technologies' designs and user interfaces more user-friendly, intuitive, and in line with consumer expectations	6 months	ITDepartment	Budget Dept	1. Increase user satisfaction scores by at least 20%.
		2. Provide thorough and easy-to-read FAQs, tutorials, and user guides that include detailed instructions and troubleshooting data.	6 months	Member Education Department		2. Releaseuser guides for every newtechnology. .
		3. Plan webinars, workshops, and training sessions to instruct clients on how to use thenew technology successfully and efficiently.	ongoing	Learning and Development Department		3. Educate at least 80% of users on the main features and capabilities.
		4. Collect client feedback on their experience with new technology and utilize it to make continuous improvements.	ongoing	Quality Management Department		4. Obtain favorable response from at least 90% of clients in post-implementation surveys.

AREAS OF CONCERN	GOALS/ OBJECTIVES	STRATEGIES/ ACTIVITIES	TIME FRAME	PERSONS INVOLVED	SOURCE OF FUND	SUCCESS INDICATORS
Reliability	To minimize system downtime and disruptions	1. Invest in a dependable and scalable infrastructure that can handle increased user traffic, eliminate any interruptions, and reduce downtime.	1 year	IT Department	Budget Dept	1.At least 99.9% uptime should be attained for digital services.
		2. Implement redundancy and failover techniques to ensure digital service continuity in the case of system errors or disruptions.	6 months	IT Department		2 Install redundancy and failover systems successfully, with 0-2% critical failures. .
		3 Create a routine maintenance schedule to perform system updates, patches, and fixes to address vulnerabilities and reduce downtime proactively.	6 months	Learning and Development Department		3. Establish a regular maintenance schedule with a maximum of 2% of service interruptions.
		4. Develop an incident response plan to handle disruptions effectively, minimize downtime, and ensure timely recovery of digital services	ongoing	Quality Management Department		4. Educate at least 80% of users on the main features and capabilities

DISCUSSION

Table 1.1
Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Customer

Customer was **Highly Effective (3.57)** as to the level of digital transformation effectiveness in SSS as assessed by clients. All indicators were verbally interpreted as Highly Effective. Furthermore, the indicator “The agency’s digital transformation efforts have improved my experience and met my needs and expectations as a customer” had the highest computed mean of **3.65** while the indicator “The agency promptly addresses my feedback and resolves issues through digital means.” had the lowest computed mean of **3.43**.

This means that digital transformation is highly effective in SSS in terms of Customer as assessed by the clients. The clients affirm that their experience with SSS' digital transformation has improved, their expectations have been satisfied, and they are happy with their interaction and involvement in SSS' online services. This indicates that SSS offers their clients the necessary digital services to a significant extent.

The aforementioned findings were associated with research conducted by Borges et al. (2020) on digital transformation in banks. According to World Retail Banking Report 2016, an enhanced banking experience was observed in 85% of the nation. He further mentioned that reviews of digital services were largely positive. Customers could see more details about their account, operate on their own, and experience less waiting time in the branch.

Additionally, Awadhi et al. (2021) stated that providing individualized services and digitally empowering experiences boosted customer satisfaction to appeal to a younger and more technologically savvy clientele.

Furthermore, as mentioned by Collins (2023), the implementation of digitalization initiatives, including mobile applications, engagement through social media platforms, and the utilization of artificial intelligence technologies, was shown to have a significant positive impact on customer satisfaction and loyalty. This was primarily attributed to the provision of personalized, convenient, and seamless interactions that span the entirety of the customer journey.

Table 1.2
Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Strategy

The strategy was **Highly Effective (3.58)** as to the level of digital transformation effectiveness in SSS as assessed by clients. All indicators were verbally interpreted as Highly Effective. Furthermore, the indicator “The agency’s digital strategy aims to deliver continuous improvements on its services and added value to customers” had the highest

computed mean of **3.64** while the indicator “The agency has clearly communicated its digital strategy to its stakeholders” had the lowest computed mean of **3.54**.

This means that digital transformation is highly effective in SSS in terms of Strategy as assessed by the clients. In essence, the agency keeps enhancing its digital goods and services by utilizing technology advancements, understanding consumer needs, and aligning them with the company's objective of providing a superior customer experience. The agency can also concentrate on making efforts to effectively communicate its digitalization goals or road map to clients who would be impacted by this change.

Relative to the strategy dimension of digital transformation, Albukhitan (2020) stated that organizations should have prioritized the establishment of their objectives and vision for Digital Transformation. This involved clearly defining what a successful transformation looked like and understanding its broader implications for their business and customers, particularly in terms of customer experience and engagement.

In addition, Matt et al.(2015, as cited in Hanelt et al.,2021) mentioned that creating a digital transformation strategy that functioned as a central concept for integrating the coordination, prioritizing, and implementation of digital transformations inside a firm was essential for coordinating this integration during the digital transformation process.

Hanelt et al. (2021) also believed that creating a digital business strategy, digital acceleration, and digital mobilization all contribute to the organization's ability to move toward digital efficiency.

Table 1.3
Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Technology

Technology was **Highly Effective (3.45)** as to the level of digital transformation effectiveness in SSS as assessed by clients. Furthermore, the indicator “The agency keeps up with emerging technologies and adapts them into digital transformation initiatives” had the highest computed mean of **3.65** verbally interpreted as Highly Effective, meanwhile the indicator “I have not encountered any challenges or difficulties in using new digital technologies implemented by the agency” had the lowest computed mean of **3.13** verbally interpreted as Effective.

This means that digital transformation is highly effective in SSS in terms of Technology as assessed by the clients. This suggests that clients are fully satisfied with the emerging technologies provided by the agency, delivering seamless, compatible, and high-performing digital services. The clients are confident when using the digital tools knowing that their data are safe and secure.

In support of the statement above, Xiao et al. (2022) revealed that technology preparedness was the most critical factor in promoting digital transformation in local governments. Based on this fact, government agencies should have fully utilized digital

technology to enable digital transformation. Governments could have improved organizational efficiency using digital technology, which could have led to a shift toward digital transformation.

Besides, Mergel et al.(2019) cited that adopted from the private sector, the phrase "digital transformation" referred primarily to the necessity of utilizing new technology to maintain competitiveness in the Internet age, where goods and services were provided through both online and offline channels.

Also, Van Veldhoven and Vanthienen (2022) claimed that adopting the newest technologies encouraged efficiency gains and lower costs. Digital technology has emerged as the primary force behind corporate process, communication, product and service, and business model advances in recent years.

Table 1.4
Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Operations

Operations was **Highly Effective (3.51)** as to the level of digital transformation effectiveness in SSS as assessed by clients. All indicators were verbally interpreted as Highly Effective. Furthermore, the indicator “The agency’s digital transformation has significantly streamlined its processes and improved the efficiency of their transactions” had the highest computed mean of **3.57** while the indicator “I believe the agency’s digital operations are quite dependable, with minimal instances of downtime of downtime or disruptions” had the lowest computed mean of **3.40**.

This means that digital transformation is highly effective in SSS in terms of Operations as assessed by the clients. The agency enables streamlining of its processes and increases the efficiency of transactions through an automated digital system as well as communication and collaboration with its clients. Nonetheless, the agency can take into account the dependability of its digital operations, particularly in terms of downtime or disruption.

The results were related to the study of Yu et al. (2022) wherein they cited that the organization's operational performance could be enhanced by digital transformation. Enterprises could have achieved safe, intelligent, and sustainable operations with the support of digital transformation, which incorporated sustainable development into the enterprise value chain.

Likewise, Tian et al. (2023) claimed that a company's operational efficiency was greatly enhanced by digital transformation approaches. Therefore, introducing and putting into practice digital methods could have enhanced a company's operations. In addition, they believed that the adoption and implementation of digital technology, as well as the influence of digital transformation on operational efficiency, increased given the growing significance of digital transformation in operations improvement.

Table 1.5
Level of Digital Transformation Effectiveness in SSS as assessed by Clients in terms of Organization and Culture

Organization and Culture was **Highly Effective (3.67)** as to the level of digital transformation effectiveness in SSS as assessed by clients. All indicators were verbally interpreted as Highly Effective. Furthermore, the indicator “The staff are equipped with abilities and knowledge required to take part in digital transformation process” had the highest computed mean of 3.80 while the indicator “The agency shows an immediate response in adapting digital transformation” had the lowest computed mean of **3.58**.

This means that digital transformation is highly effective in SSS in terms of Organization and Culture as assessed by the clients. Employees are empowered with skills and knowledge to embrace the digital transformation process. The agency continues to develop and strengthen its digital capabilities, ensuring that customers are well informed of this major change.

Relative to the study of Xiao et al. (2022), they demonstrated that local governments' digital transformation was positively impacted by organizational effectiveness. The modern government's objective was to increase organizational efficiency. Traditional governments often had poor office efficiency, excessive administrative expenditures, and a lack of information flow across departments. These issues eroded public confidence and undermined the legitimacy of the government.

Brunetti et al. (2020) also stated that essentially, digital culture spoke to the necessity of developing an optimistic and open mindset regarding upcoming technological difficulties. To motivate, involve, and lessen information asymmetry about the digitalization process, it was important to be able to overcome resistance to digitalization through transparency-oriented behavior.

In addition, Udovita (2022) stated that the company had to alter or adapt the organization's structure, incentives, and culture and to begin with, the organizational structure had to be aligned with the transformation process as part of the organization function.

Table 2.1
Level of Customer Experience on Digital Services among SSS Clients in terms of Tangibility

Tangibility was as **Very Pleasant (3.59)** as to the level of customer experience on digital services among SSS clients. All indicators were verbally interpreted as Very Pleasant. Furthermore, the indicator “The digital service of the agency provides relevant and up-to-date information” had the highest computed mean of **3.70** while the indicator “The digital service works on a variety of devices and platforms” had the lowest computed mean of **3.45.**

This means that the customer experience of digital services among SSS clients is very pleasant in terms of Tangibility. Through elements such as up-to-date information, visually appealing and user-friendly platforms, accessibility, reliable performance, customization options, and modern digital profiles, businesses created a tangible sense of value and meaningful outcomes for users. By focusing on these aspects, businesses can enhance the overall customer experience and build strong relationships with their digital service offerings.

In the study presented by Heller et al. (2021), the digital automation of physical services was driven by the emergence of augmented reality technology, which uses wearable and mobile computers to overlay digital material and change customers' perceptions of a physical service setting. Specifically, it claimed to have attained tangibility even in digitally provided service encounters. For this reason, automated services needed to have a strong visual presence.

Table 2.2
Level of Customer Experience on Digital Services among SSS Clients in terms of Empathy

Empathy was **Very Pleasant (3.60)** as to the level of customer experience on digital services among SSS clients. All indicators were verbally interpreted as Very Pleasant. Furthermore, the indicator “The digital platforms cater to my individual needs and preferences” had the highest computed mean of **3.70** while the indicator “The agency understands and empathizes with the difficulties I encounter in adopting and utilizing digital tools” had the lowest computed mean of **3.53**.

This means that the customer experience of digital services among SSS clients is very pleasant in terms of Empathy. The clients strongly agree that by using digital services, their individual needs and preferences are being catered to, personalized interactions are being achieved, and responsive customer support is being provided. This means that the agency incorporates empathy into the design and delivery of digital services thus, enhancing user engagement and leading to a more positive customer experience.

As mentioned in the study of Ranchordas (2021), it had been especially crucial for public employees to show empathy for vulnerable citizens, such as the elderly, the disabled, and minorities who were underrepresented. Those who were more susceptible could have been unable to utilize internet platforms, making it impossible for them to exercise their rights. This idea offered ways to make digital government more relatable and enhance comprehension to enable automated decision-making of the requirements of the people. Empathy in administration recognized that citizens had distinct needs and skill sets, and this required redesigned as well as support in utilizing pre-filled application forms, official websites, and algorithms.

Additionally, Khan (2023) mentioned that people could express their ideas, discuss their experiences, and look for support on platforms provided by the digital world.

Giving people in need emotional support required empathy, which was essential. We had a tremendous impact on someone's well-being when we responded with empathy and compassion in our online encounters. A supportive remark, an online hug, or a nice phrase could lift people's spirits and let them know they were not alone. Empathy allowed us to build a virtual support system that cuts across geographical boundaries and supports resilience and mental health in the digital sphere.

Table 2.3
Level of Customer Experience on Digital Services among SSS Clients in terms of Reliability

Reliability was **Very Pleasant (3.49)** as to the level of customer experience on digital services among SSS clients. All indicators were verbally interpreted as Very Pleasant. Furthermore, the indicator “I am confident that the digital service ensures data security and privacy” had the highest computed mean of **3.63** while the indicator “The digital service performs accurately without any errors or interruption” had the lowest computed mean of **3.26**.

This means that the customer experience of digital services among SSS clients is very pleasant in terms of Reliability. The majority of respondents express their confidence in the security and privacy of their data and have a strong preference for the agency’s digital services to consistently deliver precise information and functionality, availability, and accessibility, with minimal technical issues or disruption.

Relative thereto, a study conducted by Gupta (2024) revealed that customer reliability had increased as digital technology was adopted more widely. Digitalization in banking offers advantages such as increased consumer comfort, flexibility, and reach. Customers could access their account information and complete transactions from any location and at any time, thanks to the advancements of internet and smartphone banking. Customers did not need to visit bank branches, saving them time and effort physically.

In addition, TAFF Inc. (2021) stated that globally, consumers had already shifted to digital platforms, and businesses had to adapt to avoid losing out on business. Consumers would rather have purchased goods or services online through a reliable and safe digital platform.

Table 2.4
Level of Customer Experience on Digital Services among SSS Clients in terms of Responsiveness

Responsiveness was **Very Pleasant (3.55)** as to the level of customer experience on digital services among SSS clients. All indicators were verbally interpreted as Very Pleasant. Furthermore, the indicator “The agency seeks feedback from its client to improve its digital services” had the highest computed mean of **3.63** while the indicator

"The digital service promptly acknowledges my queries or complaints" had the lowest computed mean of **3.43**.

This means that the customer experience of digital services among SSS clients is very pleasant in terms of Responsiveness. It shows that there is a strong preference for customers' feedback on the improvement of the the agency's digital services. Customers value timely updates or notifications to their concerns and expect prompt and efficient responses to their queries or concerns.

Moreover, in the study conducted by Chen et al. (2021), they found that customers perceived retail organizations that employed chatbots as innovative, and with good usability scores offer a personalized experience, solve problems for customers, and make them feel comfortable and respected. Additionally,
clients could obtain additional information from the chatbots and benefit from it with no effort thanks to its responsiveness, which had strong beneficial effects on the intrinsic values of the customer experience. Customers were happy when they felt appreciated and comfortable, received personalized conversations, and had their concerns resolved.

Table 2.5
Level of Customer Experience on Digital Services among SSS Clients in terms of Assurance

Assurance was **Very Pleasant (3.68)** as to the level of customer experience on digital services among SSS clients. All indicators were verbally interpreted as Very Pleasant. Furthermore, the indicator "The staff is competent in providing adequate knowledge and assistance regarding my digital transactions" had the highest computed mean of **3.77** while the indicator "The digital service has a user-friendly platform that is easy to navigate" had the lowest computed mean of **3.52**.

This means that customer experience on digital services among SSS clients is very pleasant in terms of Assurance. Clients feel assured when the staff of the agency provides them the adequate knowledge and assistance on their digital transactions. They highly value a sense of trust in the security of their data and the importance of clear and accurate information.

Watts (2020) explained that one of the basic components required to build a successful digital platform was its trustworthiness and security (clear terms and conditions, privacy protection, and assurances about intellectual property and data ownership are required). Crafting an effective digital platform that offered a smooth user experience, reliable transaction processing and strong safeguard against harmful elements was an intricate undertaking, yet those who could successfully navigate this balance stand to reap immense rewards and remarkable success.

In addition, as explained by Janota (2021), digital assurance always prioritized the user, resulting in concrete and long-term enhancements to core experiences. To ensure the quality, security, and compliance of digital goods and services, digital assurance

adopted a broader perspective than quality assurance. Beyond simple software testing, it considered the impact of any change on the ecosystem as a whole.

As mentioned in the Wipro (2023) report, the Vice President and Global Head of Testing Services at Wipro Technologies, Kumudha Sridharan, said that digital assurance was meant to give customers a seamless and pertinent experience while safeguarding their financial and other data from hackers. She also added that businesses were prepared to make the required investments in digital assurance but the hurdle lay in fulfilling their expectations of performance guarantees.

Table 3
Test of Significant Relationship between the Level of Digital Transformation Effectiveness and the Level of Customer Experience in SSS Digital Services

There was a significant relationship between digital transformation effectiveness and the level of customer experience in SSS digital services since the r values were .636 to .863 and interpreted with moderate positive to high positive correlation to correlate Digital Transformation Effectiveness and Customer Experience. The computed probability values of .000 were lesser than the level of significance ($P<0.05$); thus, the null hypothesis was rejected.

This means that the higher the level of digital transformation effectiveness, the more pleasant the customer experience becomes. By leveraging digital transformation, the agency can create meaningful and positive interactions with customers, resulting in higher customer satisfaction.

In support of the statement above, RTG Solutions Group (2023) believed that digital transformation and customer experience had become vital success factors in several businesses, including banking, healthcare, and e-commerce. Additionally, through the adoption of cutting-edge technologies and inventive approaches, companies may provide customized, effective, and user-friendly services that meet the changing demands of their clientele.

Moreover, the study of Masoud and Basahel (2023) demonstrated that digital transformation had a major beneficial impact on the customer experience, suggesting that effective implementation of these changes improved the customer experience.

Additionally, Elev8tek (2024) also mentioned that digital transformation was becoming increasingly important to provide a customized client experience as customer expectations changed

Table 4
Proposed Action Plan

The findings of the study show favorable results which means that the agency's digital transformation was already highly effective, however, an action plan was proposed

for areas that got the lowest mean on digital transformation and customer experience. This action plan served as a guide to enhance the current performance of the agency's technology and to maintain the confidence of the customers in the reliability of its digital services.

Conclusions

Based on the aforementioned findings of the study, the following conclusions have been derived.

1. That the agency keeps enhancing its digital goods and services, streamlining processes, and increasing efficiency in transactions by utilizing technology advancements, understanding consumer needs, and aligning them with the company's objective of providing a superior customer experience.

2. That SSS's digital services have improved its clients' overall customer experiences by including features like current data, aesthetically pleasing and easy platforms, accessibility, reliable performance, customized options, and an innovative digital profile. Additionally, the agency combines empathy into the planning and execution of digital services, catering to each client's unique requirements and preferences while achieving personalized interactions and prompt customer service, prompt and efficient responses to queries or concerns, all of which increase user engagement and improve the overall customer experience. Moreover, it demonstrates that clients have voiced their confidence in the security and privacy of their data as well as their strong preference for the agency to continuously supply accurate information and functionality, availability, and accessibility with the least amount of disruption or technical concerns possible from its digital services.

3. That the efficacy of the digital transformation increases with the level of customer experience. It follows that the agency can increase customer satisfaction by utilizing digital transformation to establish good and meaningful relationships with clients.

4. That enhancement program is necessary and beneficial to address the identified shortcomings and improve the user experience for digital services.

Recommendations

Based on the findings summarized and the conclusion obtained, the following recommendations were hereby suggested.

1. SSS may continually improve its digital offerings by simplifying the utilization of emerging technologies and providing assistance and support to clients. Additionally, increasing the speed and performance of digital systems and assuring compatibility with multiple operating systems would increase efficiency and production, resulting in higher client satisfaction. Furthermore, SSS should put proactive monitoring and event

management systems in place, as well as invest in strong infrastructure with redundancy measures, to increase dependability and improve operational efficiency. Regular testing, upkeep, and disaster recovery planning may also assist reduce downtime and guarantee that customers' access to digital services is uninterrupted.

2. SSS may continue to elevate customer experience on its digital services by prioritizing user-centric design, personalization, and accessibility. SSS may also focus on enhancing the reliability of its digital services through regular audits, redundancy measures, and proactive monitoring. Additionally, the agency may upgrade its ticketing system and add well-trained agents to streamline customer support and ensure prompt and efficient responses to user queries or complaints. Lastly, SSS may modify its existing user feedback mechanism online to actively seek evaluation or suggestions for the improvement of its digital services.
3. SSS may sustain the effectiveness of its digital transformation by continually evaluating, innovating, and adopting a customer-centric approach that will enhance positive customer experience.

4. SSS may carefully consider the proposed action plan on areas requiring improvement, incorporating it as a valuable guide for future enhancement.

5. Future researchers may contribute to expanding knowledge and understanding of how to improve digital services and customer experiences. These study subjects have the potential to stimulate innovation, improve industry practices, and eventually result in the creation of more user-centric and effective digital solutions.

Compliance with Ethical Standards

This research adhered to a set of guidelines to maintain ethical standards at every stage of the investigation. Respondent's official consent was requested before any type of communication was initiated, ensuring that they had a clear understanding of the research purpose, procedures, and benefits. Additionally, they were informed that they could choose not to participate in the study and that any information they provided would be kept confidential and used solely for academic research purposes. The data and information that were gathered were handled with utmost care and confidentiality, following the Data Privacy Act of 2012. The research findings were reported accurately and transparently, without misinterpretation or manipulation of data.

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ENHANCED STRATEGIC INTERVENTION MATERIALS IN TEACHING STOICHIOMETRY: MILLANAR E-SIM VISUAL LEARNING MODEL

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ABSTRACT

The study aimed to evaluate the effectiveness of Enhanced-Strategic Intervention Material (Enhanced-SIM) in teaching Stoichiometry using a Solomon Four Square design. This quasi-experimental research involved 160 Grade 9 students from a private university in Bohol, Philippines. Pre- and post-tests assessed students' performance, while a survey gathered their feedback. Statistical analyses were employed to analyze data and predict outcomes, including paired t-tests, independent means t-tests, and Multiple Linear Regression. Results indicated significant improvements in post-test scores across all three Enhanced-SIM interventions. While mean gains varied among materials, the SIM-Pure text showed significant differences in the Mole Concept, Mole Ratio, and Mass-Mole calculations but not in Mole-Mass and Mass-Mass calculations. Additionally, all three Enhanced-SIMs demonstrated equal impact on gains, suggesting their effectiveness as teaching materials, particularly for factual and single-step problems. However, the study found that the enhancers—visual process (diagram), visual communication (comics), and audiovisual (video)—were insufficient for guiding learners through more complex problems. This led to the development of the Millanar Enhanced-SIM learning model, which highlights the equal impacts of visual process, visual communication, and audiovisual elements on learning outcomes. The study recommends complementing the use of enhanced SIM materials with classroom exploration and critical discussions to foster the integration of various concepts within a cohesive learning framework. This holistic approach ensures a deeper understanding of Stoichiometry and its applications among students.

Keywords: *Solomon Four Square design, Enhanced Intervention Material, Learning Model, Stoichiometry, visual learning model*

INTRODUCTION

Effective science teaching is to make the learning and teaching process meaningful, enjoyable, relevant, and lasting. This goal can be achieved when the pedagogical strategies used in the classrooms are matched with appropriate learning materials. Lessons particularly in science that are hard to imagine, need suitable techniques which can convert abstract ideas into something that the mind can easily manipulate and absorb (Omeje & Amp; Ugbo, 2014). Thus, every teacher in this subject area must provide and devise appropriate instructional materials for his/her students to ensure learning.

It is a reality that science teaching has been a challenge for Philippine educators. The performance of students in science has not improved in recent years, as the Department of Education observed a decline in students' science and technology performance in the National Elementary Achievement Test and National Achievement Test results (Bunagan, 2012). Studies show that the insufficiency of instructional materials and the scarcity of science laboratories are among the main factors that account for the low performance of Filipino students. For instance, the lack of quality and engaging textbooks and the lack of science equipment hinder the conduct of scientific investigations and hands-on activities among Filipino pupils. To fill this gap, teachers use their ingenuity to improvise teaching materials. These instructional materials must be appropriate in terms of their factual content, have quality standards in presentation, and apply to the subject matter and the intellectual levels of the students for whom the material is intended. In 2012, Strategic Intervention Material, or SIM was introduced by the Department of Education to supplement the limited books and science teaching tools available.

The researcher deems that the Strategic Intervention Material which DepEd recommends as being successful in improving the academic performance of students in various subjects, could be adapted to teach complicated concepts in science. It may also be used to resolve the gaps in the lack of instructional materials and the declining performance in science. It is only when students maximize their learning in a science classroom that the vision of Philippine science education will be achieved, for this reason, the present study is conducted. By this attempt to make innovative teaching material, the teaching-learning process will be made easier on the part of the teacher and the students. The latter may also find the material more engaging as they learn the concept with fun.

The present study develops and assesses the functionality of an enhanced–Strategic Intervention Material called enhanced SIM in teaching stoichiometry. This learning device patterned after the DepEd SIM is multifaceted, customized, practical, and simplified but it is further added with mental scaffoldings in the form of diagrams, comics, or videos. These visual aids are with proven potential to remove learning obstacles in understanding a topic. According to Lee, et al. (2017), diagrams as visual aids facilitate the development of accurate mental models and significantly improve the instructional efficiency of the subjects. Tatalovic (2009) also found out that comic strips, varying in length, style, and preparation, are considered excellent mediums for interestingly

conveying concepts, and a variety of them are available for science teaching. Moreover, Zarra (2017) concluded that teaching using video is promising because the human brain can process video many times faster than text alone, especially for millennials, whose brains can process even faster. With these enhancers, learning can be more effective and enjoyable, and with reduced cognitive load, the students are facilitated to absorb the concepts despite the complexities of the mental processes.

Stoichiometry is one of the most complicated topics in science which challenges both teachers and students. Every year, teachers look forward to frustrations in teaching the topic because the students find it complex (Kutcy & Schulz, 2006). Similarly, Espinosa et al. (2016) found that misconceptions were discovered in the prominent methods used in pre-service training for teachers. Having taught science for several years, the researcher can attest that stoichiometry is unintelligible, and thus, students regard it as hard. It is least appreciated by most college students, especially those whose background in formula writing and in balancing equations is weak.

In effect, students have a misconception that chemistry is difficult, uninteresting, and irrelevant. Despite students' perspectives on stoichiometry, learning the basics of this subject is a must. One's knowledge of stoichiometry will enable him to pass high-stakes examinations. Stoichiometry may also inspire students to become scientists as it opens up various applications. It is the key to innovations and the discovery of new products (Kutcy & Schulz, 2006).

The researcher believes that the enhanced- SIM in teaching Stoichiometry can make science learning not only fun and easy but more importantly, relevant and lasting. This innovation will hopefully help students to appreciate science and technology and will inspire them to pursue science-related careers to manage the demands of food and other materials in the future.

Research Questions

The study aimed to assess the functionality of the Enhanced Strategic Intervention Material in teaching Stoichiometry.

Specifically, this study aims to answer the following questions:

1. What is the students' entry and exit performance in Stoichiometry using Strategic Intervention Materials enhanced with:
    - 1.1 pure text;
    - 1.2 comics;
    - 1.3 diagrams; and
    - 1.4 videos?
2. Is there a significant improvement in the students' entry and exit performance in Stoichiometry using the Enhanced Strategic Intervention Materials?
3. Is there a significant mean gain difference in the students' entry and exit performance in Stoichiometry along the four enhanced-SIM?
4. What are the students' feedback on the enhanced-SIM as to its application in science learning?

5. Based on the findings, what theory/model maybe proposed in the study?

METHODOLOGY

This section focused on the methodology that was utilized in the conduct of the study. It also outlined the research design, the procedure that was followed, the process of collecting the data, and the analysis. During the collection process, the ethical considerations were also discussed.

Research Design

The study employed a quasi-experimental design, specifically the Solomon Four-Square design, to assess the effectiveness of enhanced strategic intervention materials (SIM) in improving students' understanding of stoichiometry. The set-up included four groups: two for SIM Pure text and two for each experimental group using enhanced SIM materials. While only half of the control and experimental groups underwent pretesting, all groups completed post-tests after the study implementation. Statistical analyses, including t-tests for paired samples and independent samples, were conducted to analyze post-test outcomes and mean gains of the instructional materials. Multiple Linear Regression was used to identify the enhanced SIM material with the most significant impact on learning outcomes, addressing the study's null hypotheses and ensuring a rigorous analysis of the data.

Research Environment and Research Participants

The study was conducted at Holy Name University within the High School Department, specifically involving Grade 9 classrooms. The research took place over two weeks, from February 3-17, 2019. Four Grade 9 classes, labeled A, B, C, and D, were selected for the study, with each class exposed to different instructional materials. Section A served as the control group, using SIM Pure Text. Sections B, C, and D were the experimental groups, exposed to enhanced SIMs, including SIM Comics, SIM Diagram, and SIM Video. The participants were Grade 9 students identified with the help of the Science Coordinator. The study involved pre-testing and post-testing to evaluate the effectiveness of the SIMs. Additionally, feedback was collected from randomly selected students through surveys distributed a week after the study.

Research Instrument

The research instruments used in this study included pre-tests and post-tests, which were encoded and converted into percentages for analysis. A t-test for paired samples was utilized to compare pre-test and post-test scores to determine if there were significant differences. The effectiveness of the enhanced strategic intervention materials (SIMs) was further evaluated using a t-test for independent samples to assess mean gain. Multiple regression statistics were employed to analyze relationships between variables.

Feedback from students was collected through open-ended questions, encoded, and thematically analyzed.

Data Gathering Procedure

Before conducting the study, permission was obtained from the Vice-President for Academic Affairs of Holy Name University. The Principal of the High School Department received a copy of the approved letter to coordinate class schedules with Grade 9 classes. With the assistance of the Science Coordinator, potential participants were identified and grouped according to the study's design. The implementation of the enhanced SIMs took place from February 3-17, 2019, across four classes of identified respondents. The pre-test was administered during the first meeting, followed by the introduction of four enhanced SIMs: SIM Diagram, SIM Comics, SIM Video, and SIM Pure Text.

Grade 9 class sections were labeled A, B, C, and D. Section A served as the control group and was taught with SIM Pure Text, while Sections B, C, and D were taught with enhanced SIM Comics, Diagram, and Video, respectively. To mitigate pre-test score bias, post-test results of pre-tested and non-pre-tested groups for each treatment were compared with the control group. During the study, five topics were covered, with each topic introduced using its corresponding enhanced SIM over one-hour class periods. The researcher facilitated class discussions, distributed study materials, and provided self-evaluation opportunities for students. Enhanced SIMs were exclusively used during class hours to control respondent exposure. A pre-test was conducted for half of the selected classes prior to implementing the enhanced SIMs, as detailed in Table 1 of the schedule.

Table 1: Activities/Topic Schedule

Schedule	ACTIVITIES/TOPICS
Day 1	Pre-test
Day 2-3	The Mole Concept
Day 4-5	The Mole Ratio
Day 6-7	Mole-Mass Calculations
Day 8-9	Mass-Mole Calculations
Day 10-11	Mass-Mass Calculations
Day 12	Post-test

After the observation period, a post-test measured students' exit performance, followed by the distribution of survey questionnaires to randomly selected students a week later to gather feedback. Throughout the study, strict adherence to ethical considerations ensured data integrity and confidentiality. Participants were assured that their performance wouldn't affect their science grades, and those chosen for the feedback

survey were informed that there were no right or wrong answers regarding their opinions. Pre- and post-test results were statistically analyzed, while feedback questionnaire responses were collected, encoded, and categorized by themes to identify opportunities and challenges experienced during treatment exposure using correct qualitative procedures.

Data Analysis

In this study, the raw data from the pre and post tests were encoded according to topics converted into percentages and tabulated. The data in tables were analysed using T-test for paired samples since each subject was measured twice, during the pre-test and in the post test. The test statistic for paired samples is used to find out if a difference exists between the means of the pre-test and post-test. In the interpretation, the level of significance was at 95% or a p value =.05 and if there is a difference in favour of the post-test, then the treatment or intervention is effective. However, if there is no significant difference then the treatment or intervention is not effective.

The formula used was:

$$t = \frac{D}{\sqrt{\frac{\sum D^2 - \frac{(\sum D^2}{n}}{n(n-1)}}}$$

Where: D = the mean difference between the pre-test and the post-test
$\sum D^2$= the sum of the squares of the difference between the pre-test and the post test
$\sum D$= the summation of the difference between the pre-test and the post test
n = the sample size

To determine the mean gain of the enhanced –SIMs, the pre-test results were subtracted from the post-test outcomes to get the difference and t-test of independent samples is employed. The relationship of the variables was tested with Multiple Regression Statistics.

On students' feedback, open-ended questions were given, and responses were encoded and arranged by themes, analysed and summarised in vignettes.

RESULTS

5.1 Students' Entry and Exit Performance in Stoichiometry using the Enhanced-SIM

The entry and exit performances of Grade 9 respondents were determined from their scores in the pre and post-tests. These scores were converted into percentages and scaled accordingly to give the appropriate description of their knowledge on Mole Concept, Mole Ratio, Mole – Mass – Mole calculations.

Table 2: Students Entry and Exit Performance using the SIM – Pure Text
(Percentage Score, n=20)

Topics	Pre-test	Description	Post-test	Description
Mole Concept	35.85	Low	50.10	Satisfactory
Mole Ratio	27.60	Low	38.35	Low
Mole – Mass	14.25	Very low	22.55	Low
Mass – Mole	22.50	Very low	30.75	Low
Mass – Mass	15.05	Very low	22.50	Low
Average	**23.05**	**Low**	**32.84**	**Low**

Scale: 0-20 very low, 21-40 low, 41-60 satisfactory, 61-80 high, 81+ very high

In using plain SIM Pure Text, the pre-test scores ranged from 35.85% for Mole Concept to 14.25% for Mole-Mass, indicating low to very low entry knowledge in stoichiometry. Post-test scores increased, with the highest at 51.10% for Mole Concept and the lowest at 22.50% for Mole-Mass calculations. However, the average pre-test score of 23.05% only increased to 32.84%, still categorized as low performance. This suggests that plain SIM with pure texts did not significantly improve respondents' performance, particularly in comprehension and problem-solving areas like Mole-Mass, Mass-Mole, and Mass-Mass calculations.

This aligns with Chandrasegaran et al. (2009) findings on teachers' frustration due to students' difficulty retaining information in stoichiometry. Unlike other studies in Mathematics, General Science, and Chemistry, the use of plain SIM Pure Text did not enhance participants' performance, reflecting a lack of motivation and difficulty in connecting information.

This implies that instructional materials in SIM format with pure texts alone may not effectively improve students' understanding of stoichiometry topics. Enhancements are needed to contextualize concepts and provide scaffolding for students to anchor their understanding.

Table 3: Students Entry and Exit Performance using the Enhanced SIM Comics
(Percentage Score, n=20)

Topics	Pre-test	Description	Post-test	Description
Mole Concept	25.85	Low	68.35	High
Mole Ratio	14.25	Very low	41.65	Satisfactory
Mole - Mass	10.95	Very low	48.25	Satisfactory
Mass - Mole	10.00	Very low	25.85	Low
Mass - Mass	11.05	Very low	29.10	Low
Average	**14.25**	**Very Low**	**42.64**	**Satisfactory**

Scale: 0-20 very low, 21-40 low, 41-60 satisfactory, 61-80 high, 81+ very high

Table 3 suggests that enhanced SIM comics effectively convey stoichiometry concepts, particularly Mole Concept, resulting in improved performance. However, when topics become more complex, like adding mass as a variable, confusion arises, leading to lower scores. This underscores the need to complement enhanced SIM comics with additional teaching techniques for complex lessons.

These findings align with Green and Meyers (2010), who found that comics improve reading comprehension and communicate complex subjects effectively. Similarly, McCloud (1994) noted that comics can convey science concepts realistically. However, comics alone may not suffice for complicated topics requiring intricate procedures.

Table 4: Students Entry and Exit Performance using the enhanced SIM Diagram
(Percentage Score, n=80)

Topics	Pre-test	Description	Post-test	Description
Mole Concept	20.85	Low	71.70	High
Mole Ratio	19.20	Very low	43.40	Satisfactory
Mole-Mass	14.30	Very low	50.00	Satisfactory
Mass-Mole	10.95	Very low	48.25	Low
Mass-Mass	15.85	Very low	40.85	Satisfactory
Average	**16.23**	**Very low**	**50.85**	**Satisfactory**

Scale: 0-20 very low, 21-40 low, 41-60 satisfactory, 61-80 high, 81+ very high

The use of enhanced SIM diagrams proved effective in improving students' performance in the post-test. Respondents easily deciphered instructions in the diagrams, recalling prerequisite steps for complex situations, as evidenced by satisfactory scores in more intricate topics like Mole-Mass and Mass-Mass calculations. The diagrams provided mental scaffoldings for new lessons and guided students through the process and expected outcomes, resulting in improved performance with reduced mental effort.

These findings align with Lee et al. (2013), who demonstrated that diagrams facilitate the development of accurate mental models, enhancing instructional efficiency. Incorporating diagrams with text in the SIM serves dual roles in students' conceptual learning—textual and visual—which complements each other, as concluded by Dahar and Faize (2011).

Table 5: Students' Entry and Exit Performance using the Enhanced SIM Video
(Percentage Score, n=20)

Topics	Pre-test	Description	Post-test	Description
Mole Concept	26.50	Low	74.10	High
Mole Ratio	20.90	Low	50.05	Satisfactory
Mole-Mass	16.65	Very low	47.45	Satisfactory
Mass-Mole	17.55	Very low	31.65	Low
Mass-Mass	11.75	Very low	26.65	Low
Average	**18.67**	**Very low**	**45.98**	**Satisfactory**

Scale: 0-20 very low, 21-40 low, 41-60 satisfactory, 61-80 high, 81+ very high

Table 5 displays the entry and exit performance of the group exposed to enhanced SIM videos. Scores increased across all topics, with the highest improvement observed in Mole Concept. The enhanced SIM video aided respondents by clarifying processes and outcomes through expert discussions and visuals, allowing them to organize their thoughts. Learners benefited from audio-visual learning, comprehending complex stoichiometric topics step-by-step. These findings align with Mendoza, et al. (2015), who found video presentations highly effective for student learning and concluded that virtual learning environments support learning. However, they contrast with Kidwai et al. (2001), who suggested that videos may overload cognitive processes when combined with visual scaffoldings and animations.

5.2 Significant Improvement of the Participants' Entry and Exit Performances in Stoichiometry using the Enhanced- SIM

To guide in the interpretation of the results, t-test of correlated means at $\alpha = 0.05$ was used in the study. Thus, if the p value is lower than $\alpha = 0.05$, the hypothesis is rejected and interpreted as *significant* while if the p value is higher than $\alpha = 0.05$, the hypothesis is accepted and interpreted as not *significant*.

Tables 6-9 show the significant improvement on the performance of Grade 9 student-participants using the plain SIM-pure text, enhanced -SIM diagram, enhanced-SIM comics and enhanced-SIM video respectively. In the analysis of the significant improvement, it was made sure that the post- tests results were not affected by the learners' exposure to the pre-test through a two-way analysis of variance as suggested in the Solomon- Four Group design. All groups yielded *not significant* which means that the post tests have been sensitized.

Table 6: Significant Improvement in the students' Entry and Exit performance using SIM – Pure Text (Percentage Score, n=20, α =0.05)

Topics	Pre-test	Post-test	T-test	P value	Decision
Mole Concept	35.85	50.1	1.851	0.08	Accept, Not Sig
Mole Ratio	27.6	38.35	1.773	0.092	Accept, Not Sig
Mole - Mass	14.25	22.5	1.867	0.077	Accept, Not Sig
Mass - Mole	22.5	30.75	1.38	0.184	Accept, Not Sig
Mass-Mass	15.05	22.5	1.897	0.077	Accept, Not Sig

H_0: There is no significant improvement in the entry and exit performance in Stoichiometry using the enhanced SIM

In the SIM Pure Text group, post-test scores were higher than pre-test scores, indicating numerical improvement in performance. However, statistical analysis revealed that p values for all topics were greater than α = 0.05, indicating non-significant improvements. This suggests that the use of plain SIM Pure Text did not significantly enhance respondents' performance in stoichiometry. Figueroa (1998) suggested that students struggle with stoichiometry when it's divorced from real-world applications. Additionally, White et al. (2009) noted that multi-stepped calculations are challenging to grasp mentally.This indicates that pure text alone is insufficient for improving students' understanding of stoichiometry concepts. It fails to guide them through multi-stepped calculations and lacks contextualization. Enhancing lesson presentations to include real-world examples may better direct students and improve comprehension.

Table 7: Significant Improvement in the students' Entry and Exit performance using the enhanced-SIM Comics (Percentage Score , n=20, α =0.05)

Topics	Pre test	Post test	T -Test	P value	Decision
Mole Concept	25.85	68.35	10.053	0.0000	Reject, Sig
Mole Ratio	14.25	41.65	5.286	0.0000	Reject, Sig
Mole -Mass	10.95	48.25	7.275	0.0000	Reject, Sig
Mass -Mole	10.0	25.85	4.838	0.0000	Reject, Sig
Mass-Mass	11.05	29.10	3.865	0.0001	Reject, Sig

H_0: There is no significant improvement in the entry and exit performance in Stoichiometry using the enhanced SIM

In the enhanced-SIM comics group, post-test scores exceeded pre-test scores, and statistical analysis showed p values below α = 0.05 for all topics, rejecting the null hypothesis. This indicates a significant improvement in students' understanding of stoichiometry, particularly in Mole Concept, Mole Ratio, Mole-Mass, Mass-Mole, and Mass-Mass calculations. This aligns with Steiner's (1986) assertion that appropriate teaching methods facilitate comprehension, allowing students to organize their work effectively (Kutcy & Schulz, 2006). Similarly, Espinosa (2014) found that enhanced SIM, when integrated strategically into classroom practice, enhances learners' grasp of

scientific concepts. The enhanced SIM comics engage students through contextualized comic strips, offering clear instructions for problem-solving while adhering to the SIM format, simplifying procedures and solidifying concepts.

Table 8: Significant Improvement in the students' Entry and Exit using enhanced-SIM Diagram (Percentage Score, n =20, α = 0.05)

Topics	Pre test	Post test	T-test	P value	Decision
Mole Concept	20.85	71.75	9.583	0.0000	Reject, Sig
Mole Ratio	19.2	43.4	5.647	0.0000	Reject, Sig
Mole-Mass	14.3	50.0	6.517	0.0000	Reject, Sig
Mass-Mole	10.95	48.25	7.275	0.0000	Reject, Sig
Mass-Mass	15.85	40.85	5.278	0.0000	Reject, Sig

H_0 :There is no significant improvement in the entry and exit performance in Stoichiometry using the enhanced SIM

The enhanced-SIM diagram group exhibited higher post-test scores compared to pre-test scores, with all topics showing p values below α = 0.05 through paired-samples t-tests, indicating significant improvement in stoichiometry performance. This aligns with Lee et al.'s (2013) findings, suggesting that diagrams aid in developing accurate mental models, enhancing instructional efficiency. The incorporation of texts in the SIM serves dual roles, textual and visual, supporting students' conceptual learning. Similarly, Liu (2012) suggests that diagrams complement textual explanations, aiding comprehension of complex concepts. The study confirms the effectiveness of diagrams in the SIM for enhancing stoichiometry understanding, providing mental scaffolding and facilitating easier comprehension compared to textual instructions alone.

Table 9: The Significant Improvement on the Performance of Grade 9 Respondents Using the Enhanced SIM Video (Percentage Score, n =20, α = 0.05)

Topics	Pretest	Post test	T-test	P value	Decision
Mole Concept	26.5	74.1	12.45	0.0000	Reject, Sig
Mole Ratio	20.9	50.05	5.045	0.0000	Reject, Sig
Mass-Mole	16.65	47.45	5.168	0.0000	Reject, Sig
Mole-Mass	17.55	31.65	2.542	0.0200	Reject, Sig
Mass-Mass	11.75	26.65	3.448	0.0030	Reject, Sig

The exposure to enhanced-SIM videos led to increased post-test scores, with p values below 0.05 in all topics, rejecting the null hypothesis and indicating significant improvement in respondents' performance. The video component of the enhanced-SIM material allowed students to clarify processes and outcomes through expert discussions and visuals, facilitating organization of thoughts. This aided comprehension of complex stoichiometric topics. These findings align with Singh 's (2004) conclusion that audio-

visual clips enhance problem-solving skills and with Mendoza, et al. (2015) assertion regarding the effectiveness of video presentations in learning. Jain (2015) also supports this, highlighting the supportive nature of virtual learning environments. However, this contrasts with Kidwai et al.'s (2004) claim that videos are only beneficial for factual knowledge and not for higher order thinking skills, suggesting a potential cognitive overload with combined visual scaffoldings and animations.

4. 3 Mean Gain Difference in the students' Entry and Exit in Stoichiometry among the Enhanced -SIMs

Table 10: The Mean Gain Difference in the students' Entry and Exit performance in Stoichiometry among the Four Enhanced-SIMs

	Mean Gain	Std. Deviation	t-value	p-value	Decision
Mole Concept					
Pure Text (Control)	9.3750 25.60935				
Enhanced-SIM Comics	31.8750	14.32414	3.429	0.001	Reject Ho
Enhanced-SIM Diagram	38.8158	18.58480	3.970	0.000	Reject Ho
Enhanced-SIM Video	36.8421	12.12900	3.833	0.000	Reject Ho
Mole Ratio					
Pure Text (Control)	8.1250 20.38890				
Enhanced-SIM Comics	20.6250	17.33712	2.089	0.043	Reject Ho
Enhanced-SIM Diagram	20.3750	17.88719	1.999	0.050	Reject Ho
Enhanced-SIM Video	21.2500	18.18219	2.149	0.038	Reject Ho
Mole Mass					
Pure Text (Control)	6.2500 17.44352				
Enhanced-SIM Comics	28.1250	17.14633	4.000	0.000	Reject Ho
Enhanced-SIM Diagram	23.0263	20.09662	2.788	0.008	Reject Ho
Enhanced-SIM Video	22.3684	19.79888	2.701	0.010	Reject Ho
Mass-Mole					
Pure Text (Control)	6.2500 20.07388				
Enhanced-SIM Comics	11.2500	11.39887	0.969	0.339	Accept Ho
Enhanced-SIM Diagram	7.5000	18.31738	0.206	0.838	Accept Ho
Enhanced-SIM Video	8.1250	17.80514	0.313	0.756	Accept Ho
Mass Mass					
Pure Text (Control)	15.0000 18.84843				
Enhanced-SIM Comics	13.7500	15.65458	0.228	0.821	Accept Ho
Enhanced-SIM Diagram	19.3750	15.42970	0.228	0.821	Accept Ho
Enhanced-SIM Video	12.5000	14.04879	0.476	0.637	Accept Ho

Table 10 compares the effectiveness of different enhanced-SIMs with plain text in Stoichiometry topics using a t-test for independent samples.

Enhanced-SIM Comics yielded the highest mean gains in Mole-ratio, Mole-mass, Mass-Mole, and Mass-mass topics, indicating improved learning outcomes through

visualized instructions. This aligns with Kim et al.'s (2012) findings on the effectiveness of comics in enhancing comprehension and performance. Enhanced-SIM Diagrams showed the highest mean gain in Mole Concept and Mass-Mass, aiding learners in visualizing relationships and boosting confidence in problem-solving, consistent with Jaoude & Barakat (2000) research. Enhanced-SIM Videos demonstrated significant mean gains across all topics, guiding learners through auditory and visual channels and facilitating relevant associations for memory and recall, in line with Raiyn, J. (2016) findings.

However, significant differences in mean gains between enhanced-SIMs and Pure text were only observed in Mole Concept, Mole Ratio, and Mole-Mass topics, indicating limited functionality of enhancers in more complex problems like Mass-Mole and Mass-Mass, where multi-step solutions and higher-order thinking skills are required. This underscores the importance of aligning teaching strategies with the complexity of the topic and integrating group exploration and critical discourse within a joint learning framework, as noted by Gilboy et al. (2015). Overall, enhanced SIMs, especially those with visual enhancements, outperform plain text in teaching Stoichiometry.

DISCUSSION

Findings

Students' Feedback on the Use of Enhanced – SIM

Twenty randomly selected students from the experimental groups were asked to give their feedback on the use of the instructional materials. Two open ended questions were given to gather the experiences while using the enhanced-SIMS. The first question focused on what they like most, while the second question on what they do not like most in the instructional material. The responses were collected, coded and grouped according to emerging themes.

When the respondents were asked "*What did you like most in the use of enhanced-SIM?*", four groups of answers emerged.

Simplifies the Lesson

In the use of the enhanced-SIM, the students' remarked:

> **"***It enhances our method of learning, it makes it simpler and easier in solving moles (8), it was very detailed and very good learning material (2), by making the lesson easier (4), the lesson become easy (11) and a detailed explanation in regards to stoichiometry with solutions and examples (6).*"

These responses signify that the material was able to simplify the complicated steps in solving stoichiometric problems. The detailed explanations provided in the sample problems made the lesson easily understood. The enhancers provided the learners a guide on the steps based on the underlying concepts. They tend to memorize the procedure easily and were able to answer the problems correctly. This finding is

consistent with Jaoude & Barakat (2000) when they mentioned that students perform better when asked to memorize set of steps to solve stoichiometric problems and states that more effort needs to be done to ensure conceptual understanding. Since the approach was detailed and simple, cognitive overload was reduced and enhanced the learning process.

Provides Direction

Secondly, the respondents claimed that the material has provided them directions that helped them to study on their own. The easy-to-follow diagrams and the simplified steps gave them a road-map which brought each learner to a situation where he/she wants to arrive at based on the what is given and what is desired in the stoichiometric problem. They commented that:

> *"It takes me to path I want to choose (3), it helps me to provide a preview on what we expected to learn (7), I like the most is when the moles were added , it helps me the right path (9), I like the guidelines given on how to use the enhanced-SIM- it helped me understand more(10)."*

This means that they were guided how to attain the desired outcome with the given inputs. The preview provided in each lesson, allowed the learners to have a glimpse of the whole process from start to end and what needs to be done along the way like the necessary conversion from one point to another. The diagrams and comics were used to illustrate visually the processes, outcomes and the variations characterizing these processes. In visual learning, lesser cognitive tasks are involved, this is the reason why the students commented that the enhanced-SIM material improved their learning and make the process simpler and easier understood. This observation is consistent with the findings of Maddrell (2015) in conceptual approach in teaching. He stated that when students are introduced to the whole picture of ideas, and taught how to organize and categorize information, they will understand and have opportunities for innovation, creativity and better productivity.

Arouses Students' Interest

The third reason why the students like the enhanced-SIM is the ability of the material to arouse their interest. They said:

> *"It is keeping the subject more interesting (1), Helps me understand better (12), Gives little background about moles and arouses my interest in stoichiometry (15)"*

The presentation of the concept in comics, diagram or video keeps the subject more interesting. The story line in comics gives them a little recall on the concepts of moles, the starting conditions as well as the required conditions at the end, thus, it has provided focus at each point in the problem-solving procedure. According to Tatalovic (2014), comic strips are considered excellent medium for conveying concepts in an interesting way. On the other hand, this result also confirmed the findings of Cuevas et al. (2017), that diagrams are beneficial on learners' cognitive and metacognitive processes where higher level of performance can be achieved with less mental effort. Moreover, videos help the learners make more relevant associations with memory and recall Raiyn (2016).

Provides Assurance

Finally, the functionality of the enhanced SIM modules was on the assurance it provides which allowed the students to answer the problems on their own. The respondents commented:

> *"I had a guide to double check my tracks when I answer (5). Assured me that I am in the right path (13). It helps me answered the questions and activities without help (14)"*

The material allowed the learners to double check the solutions as they keep track on the step-by -step instructions. Visual scaffoldings which complement the instructions impact students' learning performance. This is important because with increased confidence, students' ability to solve complex problems is improved. Each step is given a detailed instruction and a simple to follow recipe needed in transforming formula mass to moles or vice –versa. As Jaoude & Barakat (2000) suggested, the algorithm method nurtures students' confidence and helps them solve problems efficiently. By learning the secret recipes or short cuts in solving stoichiometric problems, students can answer during examinations and decipher problems in real – life situations with ease and confidence.

Based on the gathered responses, the respondents said that the use of enhanced SIMs had simplified the lesson, provided direction, aroused their interest and gave them assurance. The material was detailed in terms of presentation and was provided with relevant sample problems that were easy to follow.

On the second question, "*What did you not like most in the use of the enhanced SIMs?"* the respondents gave answers which were directed to only one emerging theme, which is time.

They commented that:

> *"It's time consuming and makes the person uninterested if it takes too much time (2), not fully implemented because of lack of time (8), time consuming (5,9,10,14), the discussion became boring memorizing the steps(13), some of the concepts were not explained thoroughly no more time(#8), there are steps that are confusing but some only(5), illustrating the relationship between the variables lacks time to understand further(18)."*

It was observed that the one-hour exposure of the instructional material to the students resulted to other topics not being understood well, they get bored on some steps because they lack time to understand the relationships of the variables. Time constraints prevented them to fully understand the concepts. True to Maddrell's (2015) claim, concept learning is time consuming because it will take much longer for information to be acquired.

These results imply that the functionality of enhanced –SIMs can still be maximized when their use is not limited by time. Although they can be used in the classroom for actual teaching, they are also recommended for individualized learning or as a

supplementary learning material which can be studied outside the structured school hours.

Millanar e-SIM Visual Learning Model

Based on the results of the study, the Millanar e-SIM Visual learning model is formulated. This model shows the relationships of enhanced-SIM Comics, enhanced-SIM Diagram and enhanced-SIM Video to the over-all learning outcomes in Stoichiometry.

Multiple Linear Regression was used to determine the relationship between the three enhanced-SIMs as the independent variables against the learning outcome as the dependent variable. By comparing the coefficients of the three enhanced-SIMS against the intercept, which was the mean of the reference, the predictor or most effective enhanced-material was identified.

Table 11: Multiple Linear Regression Results showing the relationships of the enhanced-SIMS *Dependent variable: gain Independent Variables: e-SIM comics, e-SIM diagram, e-SIM Video Gain = 12.5 +15.85 comics+14.65 diagram + 14.75 video*

Parameters	Estimates	Std Error	DF	T-Stats	Pvalue
Intercept	12.15	2.525	76	4.8117	<0.0001
e-SIM Comics	15.85	3.571	76	4.4385	<0.0001
e-SIM Diagram	14.65	3.571	76	4.1025	0.0001
e-SIM Video	14.75	3.571	76	4.1305	<0.0001

The results indicate that enhanced-SIM Comics, enhanced-SIM Diagrams, and enhanced-SIM Videos all have coefficients higher than the intercept, suggesting equal effectiveness in improving learning outcomes. These materials utilize visual and audio-visual channels to enhance student understanding.

Visual learning through diagrams, comics, and videos allows students to visualize concepts and processes, aiding in comprehension and memory recall. However, their effectiveness is limited to factual and single-step problems, and they may not sufficiently support higher-order thinking tasks. The enhanced Strategic Intervention Material's significant improvement in learning outcomes can be attributed to visual learning, which allows students to process information effectively through images, diagrams, and videos. However, these materials may not fully support tasks requiring higher cognitive skills.

Millanar Enhanced-SIM Learning Model

Learning is a mental process that demonstrates meaningful outcomes necessary in making decisions, evaluation, logical thinking and problem solving. As observed in the study, the following table summarizes the functional characteristics of Diagrams, Comics, and Video when they are used in an instructional material as visual learning enhancers. These characteristics are in terms of their definition, mental processes, capability, advantages, affective reward and their impacts to the learning outcomes.

Table 12: Characteristics of Visual Learning through enhanced-SIMs ENHANCERS in the SIMs

	Diagrams	Comics	Video
DEFINITION	Organise information in meaningful patterns	Contextualise concepts through dialogues related to students' experience	Artistically use animations and sounds
MENTAL PROCESS	Visual-Process	Visual-Communication	Visual- Audio
CAPABILITY	Reading is quicker to read and ideas are easier to memorise	Reading comprehension is improved	Multi-channel learning through the auditory and visual
ADVANTAGES	Conceptual understanding with less comprehension skills required	Stimulate interests and increase engagement in a comprehensible material	More insights are learned when repeated again and again
AFFECTIVE REWARD	Assurance and guide towards right direction	Effective communication between the material and the learner	More relevant association with experiences
OUTCOMES	Mental model higher level of performance with less mental effort	Greater students 'interest and better understanding of lessons	Acquire a range of transferable skills and boosts students' achievement level

In conclusion, diagrams, comics, and videos serve as valuable visual tools that enhance learning outcomes by engaging students and facilitating comprehension. These pedagogical strategies, incorporated into enhanced-SIMs, make learning enjoyable and effective.

Enhanced-SIM Diagrams organize information visually, aiding in quicker comprehension and promoting conceptual understanding with less mental effort. Comics in enhanced-SIM Comics contextualize concepts through engaging dialogues, improving reading comprehension and fostering student interest. Enhanced-SIM Videos utilize visual-audio learning to capture student interest and promote insightful behaviour.

Recommendations

Based on these insights, the Millanar e-SIM Visual Learning Model is proposed to guide Stoichiometry teaching:

1. Prep and Leap: Strong foundational knowledge is crucial for advancing in Stoichiometry. Learners must master basic concepts and mathematical operations before tackling more complex topics.
2. **Furnish to Finish**: Each topic in Stoichiometry builds on the previous one, requiring mastery of prerequisite skills for progression. Teachers must ensure learners are fully equipped with necessary concepts and skills.
3. **Sustain and Gain:** Performance may temporarily decrease during transition to more challenging topics but will improve with time. Appropriate instructional materials sustain student interest and engagement, facilitating learning.

The journey to mastering Stoichiometry requires a strong foundation, continuous skill development, and engaging instructional materials like enhanced-SIM Diagrams, Comics, and Videos.

Conclusions

The three enhanced Strategic Intervention Materials were functional as an instructional scaffolding which supported in learning the concepts. When applied correctly, they can improve students' performance in stoichiometry. The diagrams in the enhanced-SIM diagram help visualise the textual instructions and serve as an accurate mental guide to understand the concept so that higher level of performance was achieved with less mental effort. The comic strips in enhanced-SIM comics have aroused the respondents' interests and effectively conveyed the target concept so that a simplified approach is understood in solving stoichiometric problems. Similarly, the video clip used in enhanced-SIM video has clarified the concepts as they regarded it as an expert's opinion with authority. Aside from arousing their interest, the enhanced –SIM video was also self-directing. The trio of enhanced Strategic Intervention Materials (SIMs) functioned as pedagogical scaffolds, bolstering the comprehension of stoichiometry concepts. Appropriately implemented, these materials hold promise for augmenting student performance in this domain. The inclusion of diagrams within the enhanced-SIM Diagram facilitated the visualization of textual directives, furnishing learners with precise mental guides for concept assimilation. This visual augmentation mitigated cognitive load, leading to heightened performance attainment with diminished cognitive effort. Similarly, the integration of comic strips within enhanced-SIM Comics captivated the attention of participants, effectively communicating targeted principles. This visually engaging format streamlined intricate problem-solving methodologies, rendering the content more accessible and digestible. The incorporation of video clips in enhanced-SIM Video elucidated complex concepts, offering learners authoritative insights akin to expert guidance. Beyond mere engagement, the enhanced-SIM video afforded students a

degree of self-directed learning, fostering autonomy and active participation in the educational process.

Compliance with Ethical Standards

This study adhered to ethical standards by obtaining informed consent from all participants, ensuring confidentiality, and maintaining voluntary participation without coercion. No harm came to participants, and the study received ethics committee approval. Researchers declared no conflicts of interest and reported findings transparently and honestly. Cultural sensitivity was respected throughout the research process.

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ENHANCING FINANCIAL ALLOCATION PRACTICES IN A PUBLICLY OWNED WATER UTILITY: A FRAMEWORK FOR EFFECTIVE BUSINESS ADMINISTRATION

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ABSTRACT

This study examined financial allocation practices in Publicly-Owned Water Utilities (POWUs) through the lens of key stakeholders' experiences. Using in-depth interviews at a specific POWU in the Philippines, the research explored challenges like limited resources and competing priorities, while also identifying opportunities for improvement. Thematic analysis revealed the importance of stakeholder engagement and data-driven planning. Based on these findings, a framework was developed for POWUs that incorporates multi-criteria decision-making, social impact assessment, transparency, and data-driven planning with risk management. This framework aims to empower POWUs to make informed financial decisions that ensure both long-term financial stability and high-quality water service delivery.

Keywords: *financial allocation, publicly-owned water utilities, resource allocation, business administration principles*

INTRODUCTION

Publicly-Owned Water Utilities (POWUs) play a vital role in ensuring public health by providing safe and reliable water access. However, effectively allocating resources within POWUs remains a significant challenge (World Bank, 2016). Factors like low water tariffs, non-revenue water losses, and economic downturns often force POWUs to prioritize immediate needs over long-term investments (Grafton et al., 2018). This can

lead to a trade-off between essential maintenance and infrastructure upgrades, potentially jeopardizing future sustainability and service quality.

Despite the critical nature of resource allocation for POWU success, a gap exists in research that explores the lived experiences of stakeholders involved in these financial decisions. Understanding these experiences can provide valuable insights into how POWUs prioritize resource allocation and the potential impact on long-term financial health.

This study addresses this gap by focusing on Company X, a POWU in Laguna, Philippines. Through in-depth interviews with key stakeholders, the research investigates the formulation and execution of financial policies within Company X. By analyzing these experiences, the study aims to identify how resources are distributed across various water utility activities, determine if resource allocation aligns with activities that generate the most value and contribute to long-term financial health, gain insights into the decision-making processes and priorities used by personnel in authority.

This research holds significant value as it explored into the practicalities of financial allocation within POWUs. By understanding the challenges and opportunities faced by Company X, the study aims to contribute to the development of improved resource allocation practices for POWUs globally.

Research Questions

In this study, the financial allocation practices in Company X were studied by using the following research questions:

1. What are the experiences of key stakeholders on the formulation and execution of financial policies in the selected publicly-owned water utility?
2. What are the perspectives of the key stakeholders in their engagement and participation in the formulation and execution of financial policies influencing financial allocation decisions on business objectives?
3. What business administration principles framework can be adapted to improve the financial allocation practices in the water utility context?

METHODOLOGY

Research Design

The qualitative investigation into participants' formulation and execution of financial policies influencing financial allocation decisions on business objectives formed the basis for this study's assumptions and findings. Utilizing a phenomenological approach, this research aimed to better understand the phenomenon under investigation. According to Creswell (2013), qualitative research develops assumptions and applies interpretative and theoretical frameworks to explore the meanings individuals or groups attach to social

or human situations. The purpose of this paper was to provide additional insights into a specific characteristic related to a particular field of inquiry.

Research Locale

The selection of Company X, as a POWU serving over 70,000 connections in Laguna, Philippines, offers a strategically significant case study. This choice aligns with the research objective of examining financial allocation practices in local water district scale. Company X's substantial footprint within Laguna's water infrastructure, coupled with documented financial constraints and infrastructure challenges, presents a compelling opportunity for analysis. These challenges, including limited funding and service disruptions, directly impact the utility's ability to fulfill its critical role.

Research Participants

The total research participants of the study were composed of four (4) top management employees from different departments in the company. They were the key stakeholders in their respective departments. Two (2) of them came from the administrative and finance sections while the two (2) others were from the technical services and operations management. All participants were selected homogenously in one locale.

Research Instruments

The semi-structured interview guide questions were used in this study. The participants were asked an identical set of questions relative to the participants' lived experiences related to the financial allocation practices in the POWU. The researcher conducted the interview based on the scripted interview guide questions. The interview guide consisted of twelve questions subjected to expert validation. The content of the questions focused on the lived experiences in the formulation and execution of financial policies influencing financial allocation decisions on business objectives of the company.

Data Gathering Procedure

The interview employed a verified instrument guide. Before data collecting, the researcher obtained interview materials. Key stakeholders were interviewed using an interview guide. The researcher established rapport with the subject and performed the interview at the individual's request through an appointment.

Data Construction

Data analysis involves the systematic search and arrangement of interview transcripts, observation notes, and other non-textual resources in qualitative research. The data analysis (Thematic Analysis) based on Creswell (2014) aims to identify themes from lived experiences of the key stakeholders. Raw interview data was transcribed to prepare it for analysis. The researcher read all data for data coding and identified themes after data coding. The final data (thematic) analysis analyzed related themes' meanings. These

interpretations and understandings were used to build a business administration principles framework.

RESULTS AND DISCUSSIONS

1. Experiences on the Formulation and Execution of Financial

The analysis of interview data yielded a variety of themes related to financial allocation in the organization. For deeper exploration, themes were regrouped into three distinct clusters, such as: Decision-making to examine how resource allocation decisions are made and the processes involved; Resource allocation to know how resources are distributed and managed for projects in the POWU; and Organizational effectiveness to analyze the impact of financial allocation practices on business overall effectiveness. Themes in these clusters considered financial sustainability, community impact, and efficient resource utilization.

Table 1. Themes and sub-themes of Key Stakeholders' Experiences

Themes	Sub-themes
A. Decision-Making	
1. Financial Planning	i. Risk Mitigation ii. Forecasting
B. Resource Allocation	
1. Cost Optimization	
2. Technological Integration	i. Manual Processing ii. Cost Reduction Strategies
C. Organizational Effectiveness	
1. Accountability & Transparency	
2. Financial Management	
3. External Influences	

Several key themes related to decision-making, resource allocation, and organizational effectiveness. Stakeholders faced significant challenges in financial decision-making, particularly in accurately forecasting water demand and infrastructure needs due to factors such as population growth and climate change. This aligns with Brown and Johnson's (2021) emphasis on the necessity of sophisticated forecasting models and continuous data analysis. Additionally, the complexity of evolving water treatment technologies and fluctuating construction costs highlighted the need for ongoing market research and expert knowledge, as underscored by Rajendran (2023).

Resource allocation emerged as another critical area, with stakeholders identifying inefficiencies in manual processes and advocating for automation to improve efficiency and reduce costs, a trend supported by Almeida et al. (2021). Furthermore, stakeholders stressed the importance of accountability and transparency in financial practices to maintain public trust, reflecting principles of good governance highlighted by Un-Water

(2022). Organizational effectiveness was also a major concern, with stakeholders navigating challenges such as limited financial resources, political pressures, regulatory impacts, and data limitations. For example, investments in new water treatment plants due to stricter environmental regulations necessitated stakeholder engagement for insights on cost forecasting, market analysis, and contingency fund allocation, in line with David and Abaño's (2019) recommendations.

The findings from the experiences underscored the complex balancing act required for effective financial allocation within POWUs. Stakeholders emphasized the need for long-term planning, responsible resource allocation, and a focus on environmental sustainability. By prioritizing strategic planning, transparency, and technological integration, policymakers can enhance long-term financial health, ensure efficient resource management, and contribute to a more sustainable water future. Integrating stakeholder perspectives, as suggested by Almeida et al. (2021), can significantly improve decision-making processes, leading to more resilient and sustainable financial practices.

2. Perspectives on Engagement and Participation Influencing Financial Allocation

Table 2 shows the themes and subthemes that emerged from the participants perspectives on the engagement and participation influencing financial allocation decisions on business objectives.

Table 2. Themes and sub-themes of Key Stakeholders' Perspectives

Themes	Sub-themes
A. Decision-Making	
1. Financial Planning Challenges	i. Forecasting Needs
	ii. Market Analysis
B. Resource Allocation	
1. Infrastructure Development	i. Budget Buffering
2. Strategic Investment	
3. Project Management Challenges	
C. Organizational Effectiveness	
1. Unforeseen Expenses	
2. Community Impact	i. Customer Service
3. Future Sustainability	i. Long-term Plans

Examining the financial allocation practices as viewed by the participants at Company X identified challenges that mirror those faced by other utilities. The key stakeholders reported difficulties in financial planning, forecasting needs, and market analysis. Predicting water demand and infrastructure needs is complicated by factors such as population growth and climate change, necessitating flexible plans and thorough data analysis.

In resource allocation, stakeholders also emphasized the importance of reserving funds for unexpected maintenance focus on long-term infrastructure health. Investments in water conservation and renewable energy were deemed essential for sustainability, reflecting trends noted by Almeida et al. (2021). Effective project management requires strong planning and accurate cost estimates to avoid budget overruns, underscoring Rajendran's (2023) emphasis on robust project methodologies.

The need for financial resilience and balancing customer service with cost control, echoing views on risk management and focus on customer-centric approaches. Open communication with the community regarding financial decisions was seen as crucial, reflecting the importance of transparency. For future sustainability, stakeholders advocated for plans that consider future environmental regulations and technological advancements. This aligns with the call for integrating sustainability into financial planning as stakeholder engagement is vital for informed decisions about technology investments, savings, and achieving sustainability goals.

The themes found in the perspectives of the research participants confirms the importance of existing knowledge on the topic. Adaptable planning, strategic resource allocation, robust project management, and stakeholder engagement are vital for long-term financial health, efficient service delivery, and a sustainable water future.

3. Framework For Effective Business Administration

POWUs operate uniquely compared to for-profit organizations, focusing on providing safe and reliable water services at affordable rates while adhering to strict regulations and ensuring financial sustainability (Larsen et al., 2021). Unlike profit-driven businesses prioritizing shareholder returns, POWUs emphasize public health and well-being (Brown & Johnson, 2021). This requires adapting business administration principles to balance competing priorities, regulatory compliance, and financial sustainability.

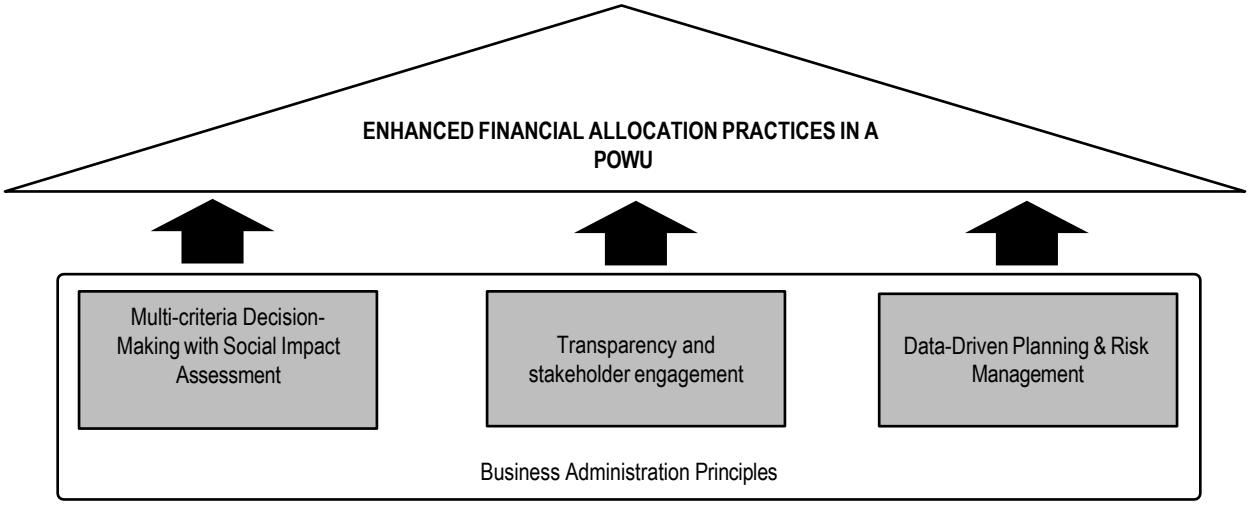


Figure 1. Proposed Framework for Effective Business Administration

A proposed framework based on participant experiences and perspectives addresses these needs with three key components: Sustainable Multi-Criteria Decision-Making (MCDM), Transparency and Stakeholder Engagement, and Data-Driven Planning and Risk Management. MCDM integrates social and environmental impacts into financial decisions, ensuring balanced outcomes (Radmehr et al., 2022).

Transparency and Stakeholder Engagement build trust through open communication and stakeholder participation (Akhmouch & Clavreul, 2016). Data-Driven Planning uses financial modeling and analytics to optimize resource allocation and efficiency. Integrating these components can empower the POWU to make informed decisions for financial sustainability, efficient service delivery, and responsible environmental stewardship, promoting sustainable water management for the community. This framework is effective for POWU business administration because it balances traditional financial considerations with social and environmental impact assessments, ensuring responsible decision-making that prioritizes both public well-being and long-term financial health.

Conclusions

This study explored the key stakeholders' lived experiences and perspectives in Company X in terms of its own formulation and execution of financial allocation practices. The findings of this study were used as a basis to propose a framework for improving financial allocation practices in the water utility context. The study concluded that:

1. Stakeholders highlighted the significant impact of the formulation and execution of financial policies on financial decision-making in the POWU context. This underscores the challenge of finding a balance between these policies and the current financial allocation management approaches. POWUs need to navigate this complex landscape to ensure effective financial management.
2. Stakeholders stressed the significance of long-term infrastructure investments, precise forecasting of future demands, and improved cooperation in financial planning. This emphasizes the necessity for Company X to embrace a long-term strategic goal that thoughtfully strikes a balance between long-term sustainability and customer service. The capacity to accomplish business objectives and maintain long-term financial health depends heavily on strategic investments, market analysis, and budget buffer building. This reinforces the need for a long-term strategic plan that balances long-term sustainability with customer service. Strategic investments, coupled with market analysis and building budget buffers, are crucial for achieving business objectives while ensuring long-term financial health.
3. Company X had been offered a framework for effective business administration principles. This framework identifies three essential components to support well-informed financial decisions that take social, environmental, and financial objectives into account. The integration of social and environmental factors, the promotion of transparency and stakeholder engagement, the use of long-term

financial modeling in conjunction with scenario planning and risk management, the conduct of life-cycle cost analysis with sustainability considerations, and the utilization of data-driven decision support for operational efficiency are some of these components. A POWU can improve their budget allocation procedures and support long-term sustainability and effective service delivery in their distinct public service purpose by putting these concepts into practice. This framework outlines three key components to guide well-informed financial decisions that encompass social, environmental, and financial goals.

Recommendations

By applying the findings from this study, water utilities like Company X and other publicly-owned water utilities (POWUs) can gain valuable insights and benefit in the long term. This can help communities and the environment by laying the groundwork for improved financial practices. The study offers the following recommendations:

1. Ensure that diverse stakeholders are included in financial decision-making, and regularly evaluate and improve these strategies to incorporate stakeholders' perspectives effectively.
2. Equip top management with skills in risk identification, assessment, and mitigation to support proactive and future-proof financial decision-making.
3. Create comprehensive strategies for integrating sustainability considerations into financial planning and decision-making.
4. Implement key performance indicators (KPIs) to track the effectiveness and efficiency of financial allocation practices. Conduct regular reviews and audits to identify areas for improvement and ensure compliance with regulations and best practices.
5. Foster a culture where stakeholders and staff can provide feedback and suggest adaptations to the financial framework, ensuring ongoing optimization for future needs and challenges.

To achieve a more comprehensive understanding of efficient service delivery, future research should incorporate the perspectives of POWU consumers and users through a mixed-method approach. Combining quantitative surveys for broad insights with qualitative interviews for a richer understanding of user experiences can provide valuable data for developing efficient and user-centered service delivery practices within POWUs.

Compliance with Ethical Standards

This research prioritized ethical principles throughout. Prior approvals were obtained, and participation was voluntary. The design minimized harm and ensured confidentiality through pseudonyms and secure data storage. Proper citations prevented plagiarism,

and objectivity was maintained through formal communication. Data, files, and documentation were meticulously compiled to support the research. Additionally, trust with participants was fostered, data anonymity was ensured, and potential biases were acknowledged and mitigated. Rigorous validation strategies like triangulation and member checking further strengthened the ethical framework.

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EXERCISE BEHAVIORAL INTENTION AND CONTROL, AND THE PHYSICAL FITNESS OF THE MIDDLE-AGED WOMEN

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ABSTRACT

Maintaining physical fitness requires exercise. As you get older, exercise and regular physical activity can help you stay healthy, strong, and independent. However, it is thought that middle-aged women engage in the least intense levels of physical activity and that these levels fall as they get older. By understanding how middle-aged women internalize behaviors, you can better comprehend their fitness objectives. It might shed light on the psychological and social elements that encourage or restrict their engagement in physical activity. This study examined the association between middle-aged women's physical fitness and their exercise behavioral intention and control in Barangay Castanas Sariaya, Quezon. In the study, the descriptive research approach was used together with surveys, observations, and questionnaires that were similar to those used in interviews. The middle-aged women were found to exercise in order to maintain their physical fitness and prevent health issues. Additionally, the respondents' physical fitness and internalization of the exercise activity are both partially maintained, along with their intention and control, both of which are partially maintained. However, they are very different in how they view the variables. It is advised that future researchers reproduce the study in another area and continue it by putting a physical fitness program into place depending on the requirements and responses of the respondents.

Keywords: *Exercise Behavioral Intention and Control, Physical Fitness, Middle-Aged Women.*

INTRODUCTION

Maintaining physical fitness requires regular exercise. Exercise and regular physical activity, according to Elmagd (2016), can keep you young-looking, active, and independent as you age. It helps people keep a healthy weight, build and maintain healthy bone density, muscle strength, and joint mobility, promote physiological well-being, lower their risk of surgery, and fortify their immune systems. Many people fall short of the recommended levels of physical activity despite these well-established advantages. Regular exercise is made more difficult by time and money constraints, physical and environmental restrictions, and demotivating influences like boredom and enjoyment. However, according to Stacey (2017), middle-aged women are thought to be the least physically active, and their intensity decreases with age. Research that is still in its early stages has shown that skeletal muscle's function as an endocrine organ mediates many of the advantages of exercise. That is, when muscles contract, several molecules are released that aid in tissue repair, the creation of new tissue, and several anti-inflammatory processes, all of which lower the chance of suffering a few inflammatory disorders.

According to Alexios (2020), a greater comprehension of middle-aged women's behavioral internalization is necessary to comprehend their exercise objectives. It might shed light on the psychosocial enablers and impediments to their engagement in any physical activities. This demonstrated that when compared to women outside of middle age, weight- and health-related goals are associated with more extrinsic and less intrinsic behavioral internalization.

According to McArthur (2017), in their middle years, almost half of women cut back on their regular activities. As they enter menopause, they simultaneously experience a decrease in basal metabolic rate and a loss of lean muscle. These women are more likely to gain weight and develop related co-morbidities as a result of the combined impacts. Petruzzello (2019) claimed that behavioral internalization and intention are the contents of goals for participating, whereas behavioral internalization represents the perceived locus of causality of the goal and intention is a critical factor in supporting sustained exercise, which in turn is associated with significant health outcomes. According to research by Molanoruzi, Khoo, and Morris (2015), sustained physical exercise depends heavily on intention. Global statistics reveal that only a small percentage of middle-aged and older people participate in the advised physical fitness activities. Further, the study by Rahman, Gu, and Akter (2020) has shown that lack of intention and internalization are the main reasons for this.

According to Wilson (2017), more women than men report exercising to reduce weight, shape their bodies, or enhance their looks. Women's absorption of sociocultural beauty standards may manifest itself in their physical activity goals relating to look and body form. Since this is not yet confirmed as true, further evidence is required to support it.

That's why the researcher of this study desires to determine the Exercise Behavioral Intention and Control, and the Physical Fitness of the Middle-Aged Women through assessing the relationship of the variables being used in the study.

Research Questions

This study attempts to determine the exercise behavioral intention and control, and the physical fitness of the middle-aged women in Brgy. Castañas Sariaya, Quezon.

Specifically, it aims to answer the following questions:

1. How do the respondents describe their intention in exercise in terms of:
    1.1 Personal attitude; and
    1.2 Social Norms?
2. How do the middle-aged women-respondents describe their behavioral internalization in terms of:
    2.1 External internalization;
    2.2 Introjected internalization;
    2.3 Identified internalization; and
    2.4 Integrated internalization?
3. How do the respondents describe their perceived behavioral control in exercise?
4. How do the respondents describe their physical fitness in terms of:
    4.1 Body Composition;
    4.2 Cardiovascular Endurance;
    4.3 Flexibility; and
    4.4 Muscular Strength?
5. Is there a significant relationship between intention to the physical fitness of the respondents?
6. Is there a significant relationship between perceived behavioral control to the physical fitness of the respondents?

METHODOLOGY

In this study, it employs the descriptive-correlational research methodology. In order to uncover fresh realities, this design concentrates on the current situation (Cruz, 2004). It makes methodical endeavors to define a topic, problem, phenomenon, service, or program, or it offers information or discusses viewpoints on a subject (Kumar, 2005). Descriptive research is a type of quantitative study that is used to define traits or functions and test particular hypotheses, according to Fluet (2020). It gathers information that is used to respond to a variety of what, when, and how inquiries regarding a specific population or group.

The respondents of the study are the middle-aged women in Brgy. Castañas Sariaya, Quezon. They are composed of one hundred twenty (120) middle-aged women from different Sitio's in Brgy. Castañas Sariaya, Quezon. They are purposively selected since the focus of the study is the middle-aged women in the age bracket of 40 to 60 years old.

In order to choose the participants for the study, purposive sampling was used. Purposive sampling is a term used in statistics to describe a class of non-probability sampling methods where units are chosen for the sample because they possess the qualities you are looking for. As a result, units are chosen "on purpose" in purposive sampling. This sampling technique, which is also known as "judgmental sampling, focuses on the researcher's judgment when identifying and choosing the people, cases, or events that can supply the most information to meet the study's objectives (Nikolopoulou, 2022). When a researcher wishes to speak with a specific group of people, he or she will utilize purposive sampling because all survey respondents are chosen because they meet certain criteria (Alchemer, 2021).

In this case, the researcher selects middle-aged women in Brgy. Castañas Sariaya, Quezon. It was consisted of one hundred twenty (120) middle-aged women from different Sitio's in Brgy. Castañas Sariaya, Quezon. They are chosen since the study focus on the middle-aged women in the age bracket of 40 to 60 years old.

The researcher employs the modified type of questionnaire (Corbin, Charles Lindsay, Ruth and Welk, Greg, 2019) to gather information on the exercise internalization, intention and control, and the physical fitness among the middle-aged women.

The questionnaire is written in English and translated in Tagalog so that the middle-aged women may easily understand the questions. The item in the questionnaire is rated into Likert-scale type. The content of the questionnaire is based on readings and reviews of related literature and studies. The questionnaire is divided into three main parts: (a) Behavioral Internalization, (b) Intention and Control, (c) and Fitness. The first part which is the behavioral internalization on exercise is composed of 20 statements which is divided in 4 sub-variables and each variable has 5 statements while intention and control on exercise is composed of another 15 statements which is divided in 3 sub-variables and each variable has 5 statements. The physical fitness on exercise is composed of 20 statements which are divided into 4 sub-variables and each variable has 5 statements.

The developed questionnaire is validated by consulting the research adviser for comments and suggestions. Then, it is presented to some experts for content critiquing. After incorporating the suggestions, it is again presented to his adviser. After the validation of the questionnaire, approval from the researcher's adviser is in need, to administer if the questionnaire is ready to distribute to the respondents.

To gather the data, permission is first sought from the respondents ensuring the preparedness of the instrument. Then, another letter of request is written for the approval of the presence of the respondents. After that the researcher formulated a questionnaire as the main instrument. The data that was gathered in this research study are from individual persons, the middle-aged women. Upon approval, the questionnaire is administered to the target respondents. The data was gathered facts, and principles served as a basis for drawing conclusions about the research problem. After gathering the answered questionnaires, these are statistically treated.

The collected data was tallied, tabulated, analyzed, and interpreted. To ascertain if there is a significant relationship between the exercise behavioral internalization, intention and control, and the physical fitness of the middle-aged women, the following statistical measures and tests were used to analyze the gathered data to answer specific problems of the study.

Mean and Standard Deviation was used to determine the behavioral internalization, intention and control, and the physical fitness of the middle-aged women.

Pearson Product-Moment Correlation was applied to determine if there is a significant relationship between behavioral internalization, intention and control, and the physical fitness of the respondents.

RESULTS

Table 1. Behavioral Internalization as to External Internalization

Indicators	Mean	SD	Verbal Interpretation
1. I exercise because other people say I should. (Nag-eehersisyo ako dahil sinasabi ng ibang tao na ito ay dapat kong gawin.)	2.76	0.93	Agree
2. I exercise because a health professional advised me to. (Nag-eehersisyo ako dahil pinayuhan ako ng isang propesyonal sa kalusugan.)	3.16	0.77	Agree
3. I take part in exercise because my friends/ family/ spouse/ say I should. (Nakikibahagi ako sa ehersisyo dahil sinasabi ng aking mga kaibigan, pamilya, o asawa na ito ay dapat.)	3.03	0.75	Agree
4. I exercise because others will not be pleased with me if I don't. (Nag-eehersisyo ako dahil hindi matutuwa ang iba sa akin kung hindi ko ito gagawin.)	2.09	0.83	Disagree
5. I feel under pressure from my friends/family to exercise. (Nakararamdam ako ng *pressure* mula sa aking mga kaibigan o pamilya na mag-ehersisyo.)	2.18	0.73	Disagree
Over-all	2.64	0.91	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 2. Behavioral Internalization as to Introjected Internalization

Indicators	Mean	SD	Verbal Interpretation
1. I feel guilty when I don't exercise. (Nakokonsensya ako kapag hindi ako nag-eehersisyo.)	2.41	0.87	Disagree
2. I feel like a failure when I haven't exercised in a while. (Nakararamdam ako ng pagkabigo kapag minsan akong hindi nag-eehersisyo.)	2.42	0.86	Disagree
3. I feel ashamed when I miss an exercise session. (Nahihiya ako kapag napalampas ko ang isang sesyon ng ehersisyo.)	2.35	0.86	Disagree
4. I feel a lack of energy if I don't exercise. (Nakararamdam ako ng panghihina kung hindi ako mag-eehersisyo.)	2.93	0.89	Agree
5. I feel upset if I don't exercise regularly. (Nababahala ako kapag hindi ako regular na nag-eehersisyo.)	2.73	0.77	Agree
Over-all	2.57	0.88	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 3. Behavioral Internalization as to Identified Internalization

Indicators	Mean	SD	Verbal Interpretation
1. I get restless if I don't exercise regularly. (Hindi ako mapakali kapag hindi ako regular na nag-eehersisyo.)	2.53	0.81	Agree
2. I value the benefits of exercise. (Pinahahalagahan ko ang mga benepisyo mula sa pag-eehersisyo.)	3.43	0.64	Agree
3. It's important to make an effort to exercise regularly. (Mahalagang pagsumikapan ang pag-eehersisyo nang regular.)	3.37	0.65	Agree
4. It's important to me to exercise regularly. (Mahalaga sa akin ang pagkakaroon ng regular na pag-eehersisyo.)	3.33	0.70	Agree
5. I consider exercise a fundamental part of who I am. (Pag-eehersisyo ang itinuturing kong pangunahing bahagi kung sino ako.)	2.90	0.78	Agree
Over-all	3.11	0.80	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 4. Behavioral Internalization as to Integrated Internalization

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. I exercise because it's fun. (Nag-eehersisyo ako dahil ito ay masaya.)	3.23	0.72	Agree
2. I get pleasure and satisfaction from participating in exercise. (Nakakakuha ako ng kagalakan at kasiyahan mula sa pakikilahok sa pag-eehersisyo.)	3.30	0.64	Agree
3. I enjoy my exercise sessions. (Nalilibang ako sa bawat sesyon ng pag-eehersisyo.)	3.23	0.66	Agree
4. I find exercise a pleasurable activity. (Nakikita ko na ang pag-eehersisyo ay isang kasiya-siyang aktibidad.)	3.23	0.63	Agree
5. I will live longer if I exercise. (Mababuhay ako nang matagal kung mag-eehersisyo ako.)	3.28	0.68	Agree
Over-all	3.26	0.66	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 5. Intention in Exercise as to Personal Attitude

Indicators	Mean	SD	Verbal Interpretation
1. I want to improve my skills. (Nais kong pagbutihin ang aking mga kakayahan.)	3.48	0.56	Agree
2. Exercising makes me feel good. (Pag-eehersisyo ang nagpapasaya sa akin.)	2.93	0.73	Agree
3. I exercise for health concerns. (Nag-eehersisyo ako para sa aking pangkalusugan.)	3.48	0.58	Agree
4. I exercise to lose weight. (Nag-eehersisyo ako para mabawasan ang aking timbang.)	3.16	0.79	Agree
5. I exercise to give myself personal challenges to face. (Nag-eehersisyo ako upang bigyan ang aking sarili ng mga personal na hamon na haharapin.)	2.92	0.76	Agree
Over-all	3.20	0.73	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 6. Intention in Exercise as to Perceived Behavioral Control

Indicators	Mean	SD	Verbal Interpretation
1. I'm getting older so exercise can be risky. (Tumatanda na ako kaya delikado na ang pag-eehersisyo.)	2.28	0.85	Agree
2. I'm just too tired after work to get any exercise. (Masyado lang akong pagod pagkatapos ng trabaho para makapag-ehersisyo pa.)	2.32	0.80	Disagree
3. I've been thinking about getting more exercise, but I just can't seem to get started. (Nag-iisip ako tungkol sa pagkuha ng higit pang ehersisyo, ngunit tila hindi ako makapagsimula.)	2.44	0.78	Disagree
4. I'm embarrassed about how I will look when I exercise with others. (Nahihiya ako sa magiging hitsura ko kapag nag-eehersisyo ako kasama ang iba.)	2.11	0.89	Disagree
5. Physical activity takes too much time away from other commitments- time, work, family, etc. (Ang pisikal na aktibidad ay tumatagal at kumukuha ng masyadong maraming oras mula sa iba pang mga aktibidad, oras, trabaho, pamilya, at iba pa.)	2.44	0.85	Disagree
Over-all	2.32	0.84	Disagree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 7. Intention in Exercise as to Social Norms

Indicators	Mean	SD	Verbal Interpretation
1. I like the social aspect of exercising. (Gusto ko ang sosyal na aspeto ng pag-eehersisyo.)	2.65	0.86	Agree
2. I like to meet new people. (Gusto kong makakilala ng mga bagong tao.)	3.03	0.82	Agree
3. I like to compare my abilities with other peoples'. (Gusto kong ihambing ang aking mga kakayahan sa ibang mga tao.)	2.43	0.88	Disagree
4. I like to show my importance to others. (Gusto kong ipakita ang aking kahalagahan sa iba.)	2.96	0.79	Agree
5. I like to show exercising with other people in the same age range is socially beneficial. (Gusto kong ipakita na ang pag-eehersisyo kasama ang ibang mga tao sa parehong hanay ng edad ay kapaki-pakinabang sa lipunan.)	3.08	0.71	Agree
Over-all	2.83	0.85	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 8. Physical Fitness as to Body Composition

Indicators	Mean	SD	Verbal Interpretation
1. Through exercise my calories burn, and it helps me to stay fit. (Sa pamamagitan ng ehersisyo nasusunog nito ang aking mga calorie, at nakakatulong ito sa akin na manatiling fit.)	3.21	0.78	Agree
2. Through exercise I gain good body posture. (Sa pamamagitan ng ehersisyo nagkakaroon ako ng magandang postura ng katawan.)	3.30	0.69	Agree
3. Through exercise I can maintain my weight normal. (Sa pamamagitan ng pag-eehersisyo, mapapanatili kong normal ang aking timbang.)	3.26	0.74	Agree
4. Through exercise my cholesterol levels in the blood keep lower. (Sa pamamagitan ng pag-eehersisyo ang antas ng kolesterol sa aking dugo ay patuloy na bumababa.)	3.12	0.81	Agree
5. Through exercise I avoid getting symptoms of stroke. (Sa pamamagitan ng pag-eehersisyo, naiiwasan kong magkaroon ng mga sintomas ng stroke.)	3.36	0.65	Agree
Over-all	3.25	0.74	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 9. Physical Fitness as to Cardiovascular Endurance

Indicators	Mean	SD	Verbal Interpretation
1. Through exercise my stamina got strengthened. (Sa pamamagitan ng ehersisyo lumalakas ang aking stamina.)	3.36	0.62	Agree
2. Through exercise my diaphragm strengthens, and my intercostal muscles which helps me to increase my lung efficiencies. (Sa pamamagitan ng ehersisyo ay lumalakas ang aking dayapragm, at ang aking mga intercostal na kalamnan na tumutulong sa akin na mapataas ang aking kahusayan sa baga.)	3.29	0.73	Agree
3. Through exercise my life span will be longer, and the risk of having a heart attack and congestive heart failure may lower. (Sa pamamagitan ng ehersisyo ang buhay ko ay hahaba, at maaaring bumaba ang panganib na magkaroon ng atake sa puso at congestive heart failure.)	3.36	0.68	Agree

4. Through exercise my heart and lung health will improve. (Sa pamamagitan ng ehersisyo ang kalusugan ng aking puso at baga ay bubuti.)	3.43	0.63	Agree
5. Through exercise the amount of oxygen that my blood can carry in the respiratory will increase. (Sa pamamagitan ng ehersisyo ay tataas ang dami ng oxygen na madadala ng aking dugo sa respiratoryo.)	3.23	0.62	Agree
Over-all	3.34	0.66	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 10. **Physical Fitness as to Flexibility**

Indicators	Mean	SD	Verbal Interpretation
1. Through exercise I can avoid injuries and reduce the risk of getting fractures. (Sa pamamagitan ng ehersisyo maiiwasan ko ang pagkakaroon ng pinsala at mababawasan ang panganib na magkaroon ng bali.)	3.03	0.76	Agree
2. Through exercise the circulation of my blood improves, and my body becomes flexible. (Sa pamamagitan ng ehersisyo ang sirkulasyon ng aking dugo ay bumubuti at nagiging flexible ang aking pangangatawan.)	3.34	0.67	Agree
3. Through exercise my level of joint mobilization improves. (Sa pamamagitan ng ehersisyo ay bumubuti ang antas ng aking joint mobilization.)	3.23	0.64	Agree
4. Through exercise my muscles and joints can't go tighter. (Sa pamamagitan ng ehersisyo ang aking mga kalamnan at kasukasuan ay hindi humihigpit.)	3.10	0.68	Agree
5. Through exercise my performance function increases and even coordination, while decreasing tension and stress. (Sa pamamagitan ng pag-eehersisyo ang aking pag-galaw o pagganap ay tumataas at maging ang koordinasyon, habang binabawasan ang tensyon at stress.)	3.23	0.63	Agree
Over-all	3.19	0.68	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 11. Physical Fitness as to Muscular Strength

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. Through exercise my lean mass increases and strengthens my muscles. (Sa pamamagitan ng ehersisyo ang aking lean mass ay tumataas at nagpapalakas ng aking mga kalamnan.)	3.16	0.65	Agree
2. Through exercise I don't lose strength as I get older. (Sa pamamagitan ng ehersisyo hindi ako nawawalan ng lakas habang tumatanda ako.)	3.24	0.62	Agree
3. Through exercise my balance and proprioception improve. (Sa pamamagitan ng ehersisyo bumuti ang aking balanse at proprioception.)	3.33	0.61	Agree
4. Through exercise I don't get tired easily in my daily work. (Sa pamamagitan ng ehersiso ay hindi ako madaling mapagod sa aking pang-araw-araw na gawain.)	3.22	0.66	Agree
5. Through exercise I preserve my muscle that I lose as I get older. (Sa pamamagitan ng ehersisyo ay napapanatili ko ang aking kalamnan na nawawala sa aking pagtanda.)	3.11	0.74	Agree
Over-all	3.21	0.66	Agree

Legend: 3.50 – 4.00 Strongly Agree; 2.50 – 3.49 Agree; 1.50 – 2.49 Disagree; 1.0 – 1.49 Strongly Disagree

Table 12. Relationship Between Internalization and Physical Fitness

Behavioral Internalization	Physical Fitness			
	Body Composition	Cardiovascular Endurance	Flexibility	Muscular Strength
External Internalization	0.212*	0.170	0.166	0.156
Introjected Internalization	0.286*	0.296*	0.266*	0.253*
Identified Internalization	0.343*	0.389*	0.350*	0.344*
Integrated Internalization	0.394*	0.376*	0.470*	0.428*

*. Correlation is significant at the 0.05 level (2-tailed). Coefficients: .90 to 1.00 (-.90 to -1.00) Very high positive (negative) correlation; .70 to .90 (-.70 to -.90) High positive (negative) correlation; .50 to .70 (-.50 to -.70) Moderate positive (negative) correlation .30 to .50 (-.30 to -.50) Low positive (negative) correlation; and .00 to .30 (.00 to -.30) negligible correlation.

Table 13. Relationship Between Intentions and Physical Fitness

Intention	Physical Fitness			
	Body Composition	Cardiovascular Endurance	Flexibility	Muscular Strength
Personal Attitude	0.329*	0.390*	0.298*	0.343*
Perceived Behavioral Control	0.045	-0.008	0.052	-0.033
Social Norms	0.311*	0.232*	0.300*	0.237*

*. Correlation is significant at the 0.05 level (2-tailed). Coefficients: .90 to 1.00 (-.90 to -1.00) Very high positive (negative) correlation; .70 to .90 (-.70 to -.90) High positive (negative) correlation; .50 to .70 (-.50 to -.70) Moderate positive (negative) correlation .30 to .50 (-.30 to -.50) Low positive (negative) correlation; and .00 to .30 (.00 to -.30) negligible correlation.

DISCUSSION

The data presented on Table 1 shows that indicator 2 (I exercise because a health professional advised me to) obtained the highest mean of 3.16 (SD=0.77) with a verbal interpretation of Agree. On the other hand, indicator 4 (I exercise because others will not be pleased with me if I don't) obtained the lowest mean of 2.09 (SD=0.83) with a verbal interpretation of Disagree. The overall mean was 2.64 (SD=0.91) interpreted as Agree. This suggested that the middle-aged women respondents agreed that external internalization influences the respondents' behavioral internalization in exercise. In their opinion, exercise is joyful and interesting and aids in their goal of remaining active and productive as they age. Additionally, as evidenced by their doctors' prescriptions, it is one of the activities that they most frequently recommend. That is why they attempt to continue exercising as part of their everyday routines even after finishing their tasks or jobs. Physical activity is subject to external regulation, according to (Campbell, Shaw, and Gilliom, 2000; Eisenberg et al., 2001). The term "externalizing behavior" or "external internalization problems" describes a collection of behavioral issues that show up in an adult's outward actions during exercise and reflect the adult's poor interactions with the outside world. These externalizing disorders are described in the research literature as having disruptive, hyperactive, and aggressive behaviors that occur mostly during physical activities or workouts (Hinshaw, 1987). You act in response to an external demand or in order to receive an external reward, which is known as external internalization. "Conduct problems," "antisocial," and "undercontrolled" as to their behavioral internalization are some phrases used to characterize externalizing behavior or external internalization issues (Hinshaw). Although the action is deliberate, a third party is in charge of it. This activity is then controlled from outside. An individual perceives an action that is subject to external influence as being under external pressure rather than being autonomous. The least desirable form of motivation, external internalization, is frequently used to contrast with intrinsic motivation.

On table 2, it shows that indicator 4 (I feel a lack of energy if I don't exercise) obtained the highest mean of 2.93 (SD=0.89) with a verbal interpretation of Agree. On the other

hand, indicator 3 (I feel ashamed when I miss an exercise session) obtained the lowest mean of 2.35 (SD=0.86), with a verbal interpretation of Disagree. The over-all mean was 2.57 (SD=0.88) interpreted as Agree. This suggested that the respondents, middle-aged women, concurred that introjected internalization influences behavioral internalization in exercise. And according to the answers to the researcher's interview, exercise is the main source of their energy as they begin their daily lives, so when they don't exercise consistently, they feel low on energy and upset. They continue to exercise at least three times per week, despite the fact that it is difficult for them given their age, and they are not ashamed of it. (Thornton, 2020) asserts that introjected internalization (the urge to feel worthwhile, get other people's favor, or assuage guilt) is the driving force behind physical exercise. The human tendency to internalize other people's actions is known as introjection or introjected internalization. When someone does not want to stand out, usually when engaging in activities or exercises, it might be a protective strategy. In some situations, it is an attempt to be inclusive of a group. The mental process of assimilation through recurrent neural pathway reinforcement is known as introjected internalization. In other words, learning or exercising involves an internalization that is subconscious. According to Li (2022), this kind of internalization is still perceived as controlled because introjected behavior is carried out in response to internal pressure to lessen guilt or anxiety, bolster ego or pride, or maintain self-esteem or a feeling of self-worth, typically through engaging in physical activity or exercise. Even though the individual has accepted the activity's aim as required and its internal (psychological) intention, it is still not perceived as a "free choice." Because the behavior is not self-directed but rather controlled or coerced by internal conditions, introjected internalization is still not the desired sort of motivation.

The data presented on Table 3 indicator 2 (I value the benefits of exercise) gained the highest mean of 3.43 (SD=0.64) with a verbal interpretation of Agree. On the other hand, indicator 1 (I get restless if I don’t exercise regularly) has the lowest mean of 2.53 (SD=0.81), with a verbal interpretation of Agree. The overall mean was 3.11 (SD=0.80) interpreted as Agree. This demonstrates that the respondents, who were women of middle age, concurred that respondents' behavioral internalization in exercise is most influenced by identified internalization. Physical activity, depending on the type of lifestyle, can strengthen bones and muscles, help people control their weight, lower their risk of disease, increase their capacity to carry out daily tasks, and improve their cognitive health. Adults who engage in any quantity of moderate-to-vigorous physical activity and sit less are said to get certain health benefits. Additionally, some individuals say that when they don't exercise frequently, they develop sleeplessness. According to (Ryan RM, 2004), even though the action is extrinsically motivated, it is still largely autonomous, and identified internalization may be a significant source of motivation for adults to engage in physical activity. recognized regulation (partially internalizing the results of physical exercise as being equivalent to one's own values and sense of self). Identified regulation refers to motivating one's actions or exercising for reasons that are personally significant to them.

Table 4 shows that indicator 2 (I get pleasure and satisfaction from participating in exercise) obtained the highest mean of 3.30 (SD=0.64) with a verbal interpretation of

Agree. On the other hand, three indicators, indicator 1 (I exercise because it's fun), indicator 3 (I enjoy my exercise sessions), and indicator 4 (I find exercise a pleasurable activity) obtained the lowest mean of 3.23 (SD=0.72), (SD=0.66), and (SD=0.63) with a verbal interpretation of Agree. The over-all mean was 3.26 (SD=0.66) interpreted as Agree. This suggested that the respondents, who were middle-aged women, concurred that integrated internalization influences behavioral internalization in exercise. According to what they said throughout the interview, the majority of the respondents think that physical activity and exercise are nice and satisfying. You have the opportunity to relax, take in the outdoors, or simply do things that make you happy when you exercise. The act of physical activity has been fully merged into one's sense of self, which consists of one's fundamental personal values, beliefs, and purpose (Vallerand RJ, 2015). When a person has thoroughly absorbed the cause of an action, that is, studied the cause and determined that it is consistent with their own values and needs, integration has taken place. When it happens, the action starts on its own. It is usually in middle-aged women that it is autonomous and uncontrolled by outside motivators. Despite being extrinsic, integrated motivation has many of the same characteristics as intrinsic motivation. It is the ideal form of extrinsic motivation to use while engaging in any activities that contribute to an adult's physical fitness. Because the person has fully assimilated the extrinsic cause into their values, some researchers even refer to integrated internalization as intrinsic. Integrated internalization is the next best thing if intrinsic intention is not possible.

The data presented on Table 5 Indicator 3 (I exercise for health concerns) obtained the highest mean of 3.48 (SD=0.58) with a verbal interpretation of Agree. On the other hand, indicator 5 (I exercise to give myself personal challenges to face) obtained the lowest mean of 2.92 (SD=0.76) with a verbal interpretation of Agree. The over-all mean was 3.20 (SD=0.73) interpreted as Agree. This implied that the middle-aged women respondents agreed that personal attitude affects the respondents' intention in exercise. (Fishbein, 2017) asserts that people who are in good health typically have supportive views toward exercise. They view it as an essential component of their way of life and often plan regular times to engage in physical activity. Middle-aged adults can stay motivated and prevent overload and anxiety by maintaining a positive outlook on life. Finding ways to transform a bad attitude into a good one can help you perform at your best, even though it could involve time, work, and frequent maintenance. Having a positive outlook on life will help you achieve your goals in any activity if you're in your middle years. Please keep in mind that your energy level, as well as other parts of your physical performance, can be impacted by your emotions, both happy and sad. This includes your ability to think clearly.

Table 6 shows that indicator 5 (Physical activity takes too much time away from other commitments- time, work, family, etc), and Indicator 3 (I've been thinking about getting more exercise, but I just can't seem to get started) obtained the highest mean of 2.44 (SD=0.85), and (SD=0.78) with a verbal interpretation of Disagree. On the other hand, indicator 4 (I'm embarrassed about how I will look when I exercise with others) obtained the lowest mean of 2.11 (SD=0.89) with a verbal interpretation of Disagree. The over-all mean was 2.32 (SD=0.84) interpreted as Disagree. This implied that the middle-aged women respondents disagreed that perceived behavioral control affects the respondents' intention in exercise. In his theory of planned behavior, (Ajzen, 2018) added the concept

of "perceived behavioral control" as a factor influencing both behavioral intention and actual action. Perceived behavioral control and self-efficacy are conceptually related. Both concepts refer to the person's sense of control over the behavior in question, but operationally, perceived behavioral control is frequently measured by how easy or difficult the behavior is, whereas self-efficacy is operationalized by the person's belief in their ability to carry out the behavior in the face of challenging situations. Perceived behavioral control has been included in (Schwarzer, 2009) as a significant predictor of desire to engage in a health behavior and/or as a predictor of engaging in the behavior.

On table 7, it shows that indicator 5 (I like to show exercising with other people in the same age range is socially beneficial) obtained the highest mean of 3.08 (SD=0.71) with a verbal interpretation of Agree. On the other hand, indicator 3 (I like to compare my abilities with other peoples') obtained the lowest mean of 2.43 (SD=0.88) with a verbal interpretation of Disagree. The overall mean was 2.83 (SD=0.85) interpreted as Agree. This implied that the middle-aged women respondents agreed that social norms affect the respondents' intention in exercise. According to (Randazzo, 2016), social norms, which are defined as a person's perception of other people's conduct, offer a framework for examining the variables that affect whether or not a person chooses to engage in physical activity. Theoretically, social norms could have an impact on health-related behaviors like physical activity. However, empirical evidence linking social norms to these behaviors, apart from other social variables that are more frequently studied, including social support, is limited, and findings are ambiguous. This may be because of limitations in how social norms have been conceptualized and evaluated. After controlling for the effects of social support, this study examined relationships between clearly defined social norms and a variety of physical activities and behaviors among middle-aged women.

Table 8 shows that indicator 2 (Through exercise I gain a good body posture) obtained the highest mean of 3.30 (SD=0.69) with a verbal interpretation of Agree. On the other hand, indicator 4 (Through exercise my cholesterol levels in the blood keeps lower) obtained the lowest mean of 3.12 (SD=0.81) with a verbal interpretation of Agree. The over-all mean was 3.25 (SD=0.74) interpreted as Agree. This implied that the middle-aged women respondents agreed that exercise helps on their body composition. Body composition exercises, in accordance with (Patnaek, 2023), aid in achieving a fit and toned appearance. In order to achieve your ideal physique, it is crucial to understand your body composition (the proportion of muscle to fat on your body). If you are middle-aged, it is especially necessary to take this into account before engaging in any exercise. To change your body composition to have more muscle and less fat, or at least to maintain your muscular mass and lose the fat on top of your muscles, is what it means to "tone up" or seem more toned. It's your body's proportion of lean mass, or anything that isn't fat. Your overall weight includes your body composition, but it's important to understand your body composition rather than just your weight in order to determine how much of your body is made up of muscle and how much of it is fat.

On table 9, it shows that indicator 4 (Through exercise my heart and lung health will improve) obtained the highest mean of 3.43 (SD=0.63) with a verbal interpretation of Agree. On the other hand, indicator 5 (Through exercise the amount of oxygen that my

blood can carry in the respiratory will increase) obtained the lowest mean of 3.23 (SD=0.62) with a verbal interpretation of Agree. The over-all mean was 3.34 (SD=0.66) interpreted as Agree. This implied that the middle-aged women agreed that exercise helps on their cardiovascular endurance. (Myers, 2022) defined cardiovascular exercise as any strenuous activity that boosts heart rate, breathing, oxygenation, and blood flow levels while utilizing a significant number of the body's big muscle groups in a rhythmic and repeating manner. Your cardiorespiratory fitness, commonly known as your CRF, tells a lot about your health and the likelihood of certain health outcomes. CRF assesses the efficiency with which your body absorbs oxygen and distributes it to your muscles and organs after extended activity. Exercise that uses a lot of the body's main muscle groups repeatedly and rhythmically is referred to as cardiovascular exercise. Cardiovascular exercise boosts heart rate, breathing, and oxygen and blood flow throughout the body. Your most important internal organs are gradually put to the test by this exercise, which also helps the heart, lungs, and circulatory system work more efficiently. Cardio helps a variety of health conditions, especially in middle-aged people, including heart health, mental health, mood, sleep, weight regulation, and metabolism.

Table 10 shows that indicator 2 (Through exercise the circulation of my blood improves, and my body becomes flexible) obtained the highest mean of 3.34 (SD=0.67) with a verbal interpretation of Agree. On the other hand, indicator 1 (Through exercise I can avoid injuries and reduces the risk of getting fractures) obtained the lowest mean of 3.03 (SD=0.76) with a verbal interpretation of Agree. The over-all mean was 3.19 (SD=0.68) interpreted as Agree. This implied that the middle-aged women respondents agreed that exercise helps on their flexibility. According to (Hautier, 2020), flexibility training programs in middle-aged or older persons are frequently beneficial at enhancing joint range of motion in various joints, and many functional outcomes can be enhanced. However, older people are less focused on the high-performance advantages of enhanced flexibility and more concerned with being safely active and executing activities of daily living. Another typical reason for advising older people to participate in flexibility exercises is to prevent injury and falls. When paired with weight training, flexibility training may improve balance and postural stability. Because flexibility is the capacity of the muscles, joints, and soft tissues to move freely and painlessly, it involves these structures' unlimited flexibility, which enables effortless and effective movement. Adequate flexibility can improve performance in middle age, lower the risk of musculoskeletal ailments, and boost the general quality of life. Although everyone's ranges of flexibility differ significantly, they must be met in order to preserve the health of their joints and whole body. Genetics, age, degree of activity, and prior injuries are a few of the many factors that cause the loss of normal joint flexibility. The flexibility of the soft tissues around the joint, such as the muscles, ligaments, tendons, joint capsules, and skin, will have an impact on the range of motion. Lack of stretching, especially when coupled with exertion, might eventually cause soft tissue shortening brought on by tiredness.

Table 11 shows that indicator 3 (Through exercise my balance and proprioception improve) obtained the highest mean of 3.33 (SD=0.61) with a verbal interpretation of Agree. On the other hand, indicator 5 (Through exercise I preserve my muscle that I lose as I get older) obtained the lowest mean of 3.11 (SD=0.74) with a verbal interpretation of

Agree. The overall mean was 3.21 (SD=0.66) interpreted as Agree. This implied that the middle-aged women respondents agreed that exercise helps on their muscular strength. According to (Newman, 2019), muscle strength steadily declines from the 40th to roughly the 60th year of life. As they get older, the middle-aged need strength training more and more to maintain their mobility for daily tasks. Reducing muscle atrophy and the ensuing loss of motor function is the aim of training. Even at greater intensities, progressive strength training in the middle-ages is effective at preventing sarcopenia and maintaining motor function. The earlier age-related changes will show themselves; the less active a person's lifestyle is. The most notable of these changes is a decline in motor function as well as visual and vestibular abilities. A Pearson product-moment correlation was run to determine the relationship between internalization and physical fitness. External internalization has a very weak, positive correlation to cardiovascular endurance (p=0.170), flexibility (p=0.166), and muscular strength (p=0.156) which were both statistically not significant. On the other hand, external internalization has a weak, positive correlation to body composition (p=0.212) which was statistically significant. Introjected Internalization has a weak, positive correlation to body composition (p=0.286), cardiovascular endurance (p=0.296), flexibility (p=0.266), and muscular strength (p=0.253) which were all statistically significant. Identified internalization has a weak, positive correlation to body composition (p=0.343), cardiovascular endurance (p=0.389), flexibility (p=0.350), and muscular strength (p=0.344) which were all statistically significant. Integrated internalization has a weak, positive correlation to body composition (p=0.394), and cardiovascular endurance (p=0.376), while moderate positive correlation to flexibility (p=0.470), and muscular strength (p=0.428) which were all statistically significant.

Based on the data in Table 12, it is clear that even if the respondents are very busy with their daily responsibilities, they still value exercise and can find time to do it in order to maintain a healthy lifestyle, which becomes less important as they get older. According to the respondents, the importance of exercising frequently and feeling confident about it does not depend on whether they exercise alone or with others. And whether it comes before, during, or after their responsibilities and work, they enjoy exercising as part of their daily routine. According to interviews and surveys with respondents, the top three reasons people occasionally skip workouts are a lack of inspiration, a lack of resources, and a lack of time. However, as of right now, thanks to the researcher's assistance, these problems do not have to keep individuals from getting in shape, becoming healthy, and understanding all the benefits exercise can have on their lives. (Ryan & Deci, 2000) assert that there is a strong connection between internalization and physical health. According to their self-determination theory, behavioral internalization in middle-aged women may account for variations in motivation and physical fitness performance. Additionally, the internalization of the exercise behavior would have a favourable effect on an individual's intention, physical fitness, and level of physical activity. Internalization of self-regulated behavioral patterns can positively predict the intention to engage in physical activity. Personal attitude has a weak, positive correlation to body composition (p=0.329), cardiovascular endurance (p=0.390), flexibility (p=0.298), and muscular strength (p=0.343) which were all statistically significant. Perceived behavioral control has a very weak, negative correlation to cardiovascular endurance (p=-0.008) and muscular strength

(p=-0.033) which were both statistically not significant. Likewise, perceived behavioral control has a very weak, positive correlation to body composition (p=0.045) and flexibility (p=0.052) which were both statistically not significant as well. Social norms have a weak, positive correlation to body composition (p=0.311), cardiovascular endurance (p=0.232), flexibility (p=0.300), and muscular strength (p=0.237) which were all statistically significant.

Table 13 shows a limited correlation between respondents' physical fitness and their personal attitudes and social norms under intention. One of the key reasons people engage in an activity, particularly when it comes to fitness, is their personal attitude, according to the respondents. It piques their curiosity and inspires them to engage in workouts on their own or with others. They develop self-confidence, muscles, and social skills with others their own age or within a range of ages with the aid of exercise. They can express themselves through exercise, which relieves tension and allows them to forget about issues that might otherwise result in illnesses or problems. In their opinion, the reasons why some middle-aged people don't exercise are because they are too exhausted from their jobs, lack desire, or lack time. However, with the help of peers and professionals, some middle-aged people's opinions about exercising have changed. And according to some respondents who are now employed, exercise boosts worker productivity by boosting blood flow to the brain and facilitating concentration. Additionally, it encourages original thought, assisting staff in coming up with unique answers to challenging issues. According to (Teixeira, 2012), there is a consistent correlation between intention and physical fitness that favors more autonomous forms of intention, with identified internalization tending to predict initial or short-term adoption more strongly than intrinsic intention and intrinsic intention favoring long-term exercise adherence. Across a variety of groups and contexts, exercise engagement is positively predicted by competence satisfaction and higher intrinsic intention, according to some studies. There was conflicting evidence about the function of different kinds of intention (such as personal attitude, perceived behavioral control, and social standards), as well as the unique characteristics and outcomes of introjected internalization.

Conclusions

The findings gathered in the study led to the formulation of the conclusion: (1) It was found out that there was insignificant and significant relationship existed between among the variables of intention and to the physical fitness of the respondents, then the null hypothesis is partially sustained. (2) Since there was insignificant and significant relationship existed between among the variables of perceived behavioral control and to the physical fitness of the respondents, then the null hypothesis is partially sustained.

Recommendations

Based on the results and conclusions of the study, the following recommendations are hereby suggested: (1) To the Middle-Aged Women, they would gain knowledge about the importance and benefits of having regular exercises making them gain self-improvement reducing exercise barriers. Result would guide them on how to gain a healthy lifestyle

that can lead to preventing chronic diseases, and to manage their behavioral regulation and motives to engage in different types of activity or exercises, that they can use and share to those people who mostly needed the physical activities. (2) To the community, it would lessen the growing population of inactive people in physical fitness activities. It would also help them to lower the continuous growing number of people with disease. Also, this study would also arouse the interest of the community, the people themselves and the planner to be aware of the process and means of improving health. (3) For the local health officers, they can use the result of the study as springboard in knowing the reasons and lifestyle of the middle-aged adults to their community. That way, they can provide some answers and solutions to the problem of their middle-aged people so they can motivate them to engage in some activities where they can be productive. (4) To the future researchers, this study can guide them to do a thesis about knowing the behavioral internalization, intention of an individual about the exercise and it can help them conduct an effective program. This research would give them knowledge about the consequences and profit of exercise and physical fitness activities. It can motivate future researchers to produce another study which will be concerned to the internalization and importance of having a good healthy lifestyle for the middle-aged women.

Compliance with Ethical Standards

The authors declare compliance in ethical standard. All respondents gave their informed consent for inclusion before they participated in the study. Their anonymity has been observed as well. No conflict or harm has been done in gathering data. Proper citation of related literature and studies are maintained. More importantly, there is no bias or prejudice in the findings and results of this study.

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EXPLORING EDUCATORS' AND STUDENTS' PERSPECTIVES ON PEDAGOGICAL INNOVATIONS AND TECHNOLOGY INTEGRATION IN THE MODERN CLASSROOM

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ABSTRACT

This study explores the impact of innovative pedagogical techniques and technology integration on education by examining educators and students' perspectives on Isabela. Employing a mixed-methods approach, this study investigates the profiles, perceptions, and challenges of modern classrooms through quantitative surveys and qualitative open-ended questions. This study involved a diverse group of participants from various educational institutions at the primary, secondary, and tertiary levels. The key findings revealed positive perceptions of teaching methods and widespread technological integration among educators. Both teachers and students recognize the benefits of technology in learning, despite challenges such as technical issues and varied online learning experiences. The study suggests a generally positive educational environment with effective teaching methods and technological integration, while highlighting the need for improvements in the technology infrastructure. Recommendations include ongoing professional development for teachers, addressing infrastructure challenges, and customizing online learning to meet diverse student needs. Future research should explore the long-term impact of technology on student learning outcomes, and assess the effectiveness of professional development in supporting innovative pedagogical practices. This study contributes to the understanding of the evolving landscape of education in the context of technological advancement and innovative pedagogical practices in the Isabela Province.

Keywords: *Student Perspective, Teaching Innovations, Technology Integration, Learning Dynamics*

INTRODUCTION

The research article titled Exploring Educators' and Students' Perspectives on Pedagogical Innovations and Technology Integration in the Modern Classroom" aims to examine the ever-changing educational environment in relation to innovative pedagogical methods and technological incorporation. This study aimed to explore the effects of these developments on the educational experiences of educators and students.

In recent years, the field of education has undergone a transformative shift, owing to technological advancements and changes in teaching methodologies (Kanwar et al., 2019). Traditional pedagogical practices are being reconsidered and, in some cases, replaced by innovative approaches that leverage technology to enhance learning experiences (Sarker et al., 2019). This shift is not only driven by the availability of new tools, but also by the recognition that traditional methods may not effectively meet the needs of 21st-century learners (Rodney, 2020).

Educators have pioneered pedagogy by exploring new teaching strategies, incorporating technology into their classrooms, and adapting instructional methods to cater to students' diverse learning styles and preferences. Students navigate dynamic and interactive learning environments. The integration of technology into education has the potential to redefine the learning landscape, providing opportunities for personalized learning, collaborative experiences, and skill development that aligns with the demands of the modern workforce (Perera et al., 2020).

Although there is a considerable body of literature on technological integration in education and innovative pedagogical practices, there is a noteworthy gap in our understanding of educators’ and students’ perspectives regarding these changes. While most studies have examined the effects of technology on teaching and student learning outcomes, few have offered comprehensive analyses that simultaneously consider the perspectives of educators and students (Lai & Bower, 2019; Hew et al., 2019).

This study aims to bridge this gap by conducting an in-depth analysis that captures the nuanced experiences, challenges, and successes of educators as they navigate the complexities of innovative pedagogy and technological integration. In addition, it explores how students perceive and engage with these novel teaching methods and technological tools. By considering both sides of the educational equation, this study sought to provide a holistic understanding of the dynamics of play in modern classrooms.

The rationale for conducting this research lies in the necessity of informing educational stakeholders, policymakers, and practitioners of the intricacies and implications of pedagogical innovation and technological integration. The insights gained from this study

have the potential to shape educational policies, guide educators' professional development initiatives, and influence their instructional design.

Understanding educators' perspectives is crucial for designing effective professional development programs that support them in navigating the challenges associated with adopting innovative teaching methods and integrating technology in their classrooms. Furthermore, gaining insight into students' experiences can inform the development of educational technologies that align with their needs, preferences, and learning style. This study identified positive and significant relationships across all factors of the attitude and confidence scales. Importantly, teachers' attitudes toward technology emerged as a significant predictor of their TPCK confidence. This underscores the pivotal role that teachers' attitudes play in shaping their confidence levels in effectively integrating technology into pedagogical practices (Ardiç, 2021).

Moreover, as education continues to undergo rapid transformation, it is essential to critically examine the effectiveness of these changes and their impact on quality of learning. This study contributes to education scholarship by providing a nuanced exploration of the complex interplay between teaching innovation, technological integration, and learning dynamics.

In summary, research on "Pedagogical Pioneering" fills a crucial void in the existing body of literature and offers promising prospects for enriching our understanding of the future of education. Through a thorough examination of the viewpoints of both educators and students, this study endeavors to provide a holistic grasp of the dynamic and evolving nature of education in response to technological advancements and implementation of innovative teaching methodologies.

Research Questions

1. What was the profile of the respondents?
   a. (Teachers) School, sex, age, grade level taught, teaching experience, subject taught?
   b. (Students) School, Sex, Age, and Grade Level?
2. How do teachers perceive the effectiveness of various teaching methods, such as multimedia resources, active learning techniques, and hands-on activities in engaging students?
3. What is the frequency of technology integration among educators, and how does it align with their perceptions of its impact on student learning?
4. How do educators perceive the effectiveness of their current assessment methods in gauging student progress and their contribution to learning and growth?
5. How do students perceive their current learning environment?
6. What is the level of student participation in online and remote learning courses?
7. How effective do students find the teaching methods employed to help them learn, retain information, and align with their preferred learning styles?

8. How positively do students perceive the use of technology in their education and to what extent do they believe it enhances their learning experience?
9. What common themes emerge from teachers' opinions on the most effective teaching methods for engaging students and are there subject-specific patterns?
10. How do teachers describe the challenges and benefits of technology use in their teaching and are there notable differences in experiences based on demographic factors?
11. In what ways do students describe their learning environments and their impact on their academic success, are there differences based on grade levels or other demographic factors?
12. How do students perceive the effectiveness of teaching methods in supporting their learning and are there variations based on their experiences with online learning?

METHODOLOGY

Research Design

The research design incorporated a robust mixed-method approach that combined both quantitative and qualitative methods. The quantitative dimension of the study employed a survey method to collect structured data systematically from a diverse sample of educators and students. The study incorporated a qualitative aspect through written, open-ended questions within the survey instrument. This qualitative component encourages participants to express their viewpoints in narrative form, providing depth and context for their experiences. Open-ended questions will be strategically crafted to explore the nuanced aspects of pedagogical approaches, impact of technology integration, and dynamics of the learning environment.

Research Environment or Locale of the Study

This research was conducted within the educational landscape of the province of Isabela, situated in the northern part of the country, which served as the overarching locale for the study. Schools within the province encompassing various educational institutions and settings formed a specific research environment in which data collection and analysis took place.

Respondents or Participants of the study

The participants of the study were educators and students within the province of Isabela, Philippines. This study involved a diverse group of individuals from various educational institutions, including primary, secondary, and tertiary levels. Both educators and students played pivotal roles as respondents, offering perspectives on teaching innovation, technological integration, and learning dynamics.

Data Analysis Procedure

Quantitative Analysis. Quantitative data obtained from Likert-scale responses were analyzed using statistical tools to identify patterns, trends, and correlations. Descriptive statistics such as means and percentages were used to summarize the quantitative findings.

Qualitative Analysis. Qualitative data from open-ended questions, interviews, and focus groups were subjected to a thematic analysis. Emerging themes and patterns were identified, providing a rich narrative to complement quantitative results.

Ethical Considerations

In conducting the study Prior to participation, informed consent was obtained from all respondents, including the educators and students. Participants were thoroughly informed about the purpose, scope, and objectives of the study. They were provided with detailed information about their participation, including the nature of the data to be collected, the methods of data collection, and how their data would be used. The consent forms were designed to be clear and comprehensible, ensuring that participants understood their rights, including the right to withdraw from the study at any point, without any negative consequences.

RESULTS

Quantitative Aspect

Table 1 shows the teacher respondents' profiles based on school, sex, age, grade level, teaching experience, and the subjects taught. Half of the teachers were from Lalauanan National High School Tumauini Isabela (50%) and the other half were equally distributed between Lapogan Integrated School Tumauini Isabela (25%) and Andadawen National High School Benito Soliven Isabela (25%). Most respondents were female (62.5%) or middle-aged (62.5%). The majority were JHS teachers (75%) with 10 years or less of teaching experience (68.8%). All of them teach science, but some also teach other subjects.

Variable		Frequency	%
School	Lalauanan National High School Tumauini Isabela	8	50.0%
	Lapogan Integrated School Tumauini Isabela	4	25.0%
	Andadawen National High School Benito Soliven Isabela	4	25.0%
Sex	Male	6	37.5%
	Female	10	62.5%
Age	Young adult (30 and below)	4	25.0%

	Middle Adult (31-50)	10	62.5%
	Old (51 and above	2	12.5%
Grade level taught	JHS	12	75.0%
	SHS	4	25.0%
Teaching experience	10 years and below	11	68.8%
	11-20 years	2	12.5%
	more than 20 years	3	18.8%
Subjects taught	Science	16	100.0%
	Math	3	18.8%
	Social Studies	3	18.8%
	TLE	2	12.5%
	English	2	12.5%
	Filipino	1	6.3%
	MAPEH	1	6.3%
	Economics	1	6.3%
	ESP	1	6.3%

Table 2 presents the characteristics of student respondents in terms of their school, gender, age, and grade level. The participants were drawn from 33 schools located in the province of Isabela, and the majority were from Cabatuan National High School (18%) or Cauayan City Stand Alone (17%). The student respondents were predominantly female (58%), falling within the age range of 17-18 years old (48%), and in grade 12 (41%).

Variable		Frequency	%
Student's School	Advance Montessori Education Center Isabela Inc.	1	1.0%
	Andabuen National High School	6	6.0%
	Aurora Senior High School	6	6.0%
	Alicia Vocational School	1	1.0%
	Callang National High School	1	1.0%
	Cauayan City Stand Alone	17	17.0%
	Cauayan City Science and Technology High School	3	3.0%
	Cabatuan National High School	18	18.0%
	Delfin Albano Stand Alone Senior High School	1	1.0%
	Dappat Integrated School	4	4.0%
	Eveland Christian College	2	2.0%
	Gamu Agri Fisheries School	3	3.0%
	Gayong Gayong Sur Integrated School	1	1.0%
	Gappal High School	1	1.0%
	Isabela Colleges	1	1.0%
	Isabela National High School	2	2.0%
	Isabela School of Arts and Trade	1	1.0%

	La Sallete of Cabatuan	2	2.0%
	Louis Fe Gomes Dimantina National High School	2	2.0%
	Luna National High School	2	2.0%
	Lanting Region National High School	3	3.0%
	Munoz National High School Senior High Main	1	1.0%
	Nueva Ecija Science High	1	1.0%
	Naguillan National High School	1	1.0%
	Pinoma National High School	4	4.0%
	Quirino National High School	1	1.0%
	Reina Mercedes Vocational High School	2	2.0%
	Roxas Stand Alone Senior High School	3	3.0%
	San Antonio National High School	1	1.0%
	Saint Claire College of Region 2	1	1.0%
	Ueg National High School	1	1.0%
	Villa Concepcion National High School	4	4.0%
	Yeban Integrated School	2	2.0%
Sex	Male	41	41.0%
	Female	58	58.0%
Age	15-16	45	45.0%
	17-18	48	48.0%
	19-20	7	7.0%
Grade level	10	35	35.0%
	11	23	23.0%
	12	41	41.0%

Table 3 indicates the perceived effectiveness of different teaching methods, as determined by the respondents. The results revealed that all the teaching methods were deemed very effective, with an overall mean score of 4.8 and a standard deviation of 0.4. According to the study conducted by Johnson and Lee (2024), teachers generally perceive various teaching methods as highly effective in fostering student engagement. The overall mean score of 4.8 (with a standard deviation of 0.4)

Statements	SD	Mean	Description
1. The use of multimedia resources enhances student engagement in the classroom.	0.4	4.8	Strongly Agree
2. Active learning techniques, such as group discussions and problem-solving activities, effectively engage students.	0.6	4.7	Strongly Agree
3. Incorporating real-world examples into lessons helps capture students' interest and attention.	0.5	4.8	Strongly Agree
4. Personalized feedback on assignments contributes to increased student engagement.	1.0	4.4	Strongly Agree

5. Technology integration in teaching methods positively impacts student involvement.	0.4	4.8	Strongly Agree
6. The incorporation of firsthand activities facilitates a deeper understanding of the subject matter.	0.5	4.8	Strongly Agree
7. Encouraging student participation in class discussions enhances overall engagement.	0.5	4.9	Strongly Agree
8. Providing opportunities for student collaboration fosters a more engaging learning environment.	0.3	4.9	Strongly Agree
9. Using a variety of teaching methods appeals to different learning styles, promoting engagement.	0.5	4.8	Strongly Agree
10. Adapting lessons to students' interests increases their enthusiasm for learning.	0.5	4.9	Strongly Agree
11. Clear communication of learning objectives contributes to better student engagement.	0.4	4.8	Strongly Agree
12. Incorporating gamification elements in lessons enhances student interest and participation.	0.6	4.8	Strongly Agree
13. Flexibility in teaching methods to accommodate diverse student needs positively influences engagement.	0.5	4.8	Strongly Agree
14. Regularly assessing student comprehension and adjusting teaching strategies accordingly improves engagement.	0.7	4.7	Strongly Agree
15. Creating a supportive and inclusive classroom environment positively impacts student engagement.	0.5	4.8	Strongly Agree
Over-all	0.4	4.8	Strongly Agree

Table 4 shows that all the teacher respondents integrated technology into their daily teaching.

Frequency of technology integration	%
Daily	100%
Weekly	0%
Monthly	0%
Rarely	0%
Never	0%

Table 5 shows the teachers' Perceived Impact of Technology Integration on Student Learning. According to the results, teachers perceived a strong impact of technology integration on the following aspects: the type of technology effectively enhanced students' understanding (M=4.6, SD=0.6), using technology had a positive impact on student engagement in the classroom (M=4.3, SD=1.0), incorporating digital citizenship education had a positive influence on students' online behavior (M=4.3, SD=0.7), teachers' confidence in their ability to effectively use technology in teaching despite the challenges (M=4.6, SD=0.5), students' technology skills being a key factor in their readiness for

college and careers (M=4.4, SD=0.8), seeking professional development to enhance proficiency in using educational technology (M=4.4, SD=0.6), and providing Internet references aligning with their teaching philosophy and learning objectives (M=4.4, SD=0.5). All other aspects were perceived to have a technological integration impact on student learning (Overall mean = 4.2, SD=0.4). A study by Smith and Doe (2023) investigated teachers' perceptions of the impact of technology integration on student learning. The results indicated that teachers believed technology integration had a significant positive impact on various aspects of student learning.

Statements	SD	Mean	Description
1. The types of technology I use in teaching effectively enhance students' understanding of the subject matter	0.6	4.6	Strongly Agree
2. Providing internet references for students to search is an integral part of my teaching strategy.	0.9	3.9	Agree
3. Students require additional education on digital citizenship and understanding their digital footprints.	0.9	4.1	Agree
4. Despite challenges, the benefits of using technology in my teaching outweigh the concerns.	0.7	3.9	Agree
5. I have encountered significant challenges when integrating technology into my teaching practices.	0.9	3.8	Agree
6. Using technology has positively impacted student engagement in my classroom.	1.0	4.3	Strongly Agree
7. Students' ability to navigate online resources has improved through the references I provide.	0.7	4.2	Agree
8. I actively address and educate students about responsible internet use and digital footprints.	0.9	4.1	Agree
9. Incorporating digital citizenship education positively influences students' online behavior.	0.7	4.3	Strongly Agree
10. Despite challenges, I feel confident in my ability to effectively use technology in teaching.	0.5	4.6	Strongly Agree
11. Students' technology skills are a key factor in their readiness for college and careers.	0.8	4.4	Strongly Agree
12. The use of technology has improved students' critical thinking and problem-solving abilities.	0.9	3.9	Agree
13. I actively seek professional development to enhance my proficiency in using educational technology.	0.6	4.4	Strongly Agree
14. Providing internet references aligns with my teaching philosophy and learning objectives.	0.5	4.4	Strongly Agree
15. Digital citizenship education is a priority in my curriculum to prepare students for the digital age.	0.7	4.1	Agree
Over-all	0.4	4.2	Agree

Table 6 indicates that educators viewed their existing assessment strategies as highly effective in evaluating student progress and fostering learning and development, with an

overall mean score of 4.6 and a standard deviation of 0.4. According to this study, the teachers deemed their current assessment methods to be very effective in measuring student progress and promoting learning and growth (Brown & Green, 2024).

Statements	SD	Mean	Description
1. The assessment methods I currently use effectively gauge students' progress in the course.	0.6	4.4	Strongly Agree
2. My current assessment practices contribute positively to student learning and growth.	0.5	4.5	Strongly Agree
3. I am open to incorporating new and innovative assessment methods in my teaching practices.	0.6	4.7	Strongly Agree
4. I actively seek feedback from students on the effectiveness of assessment methods in the learning process.	0.5	4.4	Strongly Agree
5. Continuous improvement of assessment practices is crucial for enhancing student learning outcomes.	0.4	4.8	Strongly Agree
Overall	0.4	4.6	Strongly Agree

Table 7 illustrates the students' perceptions of their current learning environment. The results demonstrated that all the items in the learning environment were considered accurate by the students, as evidenced by the overall mean of 3.7 and a standard deviation of 0.7. This study provides insight into the students' perceptions of their current learning environment. The findings reveal that all the items in the learning environment were perceived as true by the students. (Adams and Roberts, 2023).

Statements	SD	Mean	Description
1. In my current learning environment, I consistently feel engaged and motivated to learn.	0.9	3.7	Agree
2. The various aspects of my learning environment significantly contribute to my academic success and well-being.	1.0	3.8	Agree
3. Challenges or distractions in my learning environment often hinder my academic progress.	1.0	3.5	Agree
4. My learning environment fosters a positive atmosphere for effective learning.	0.9	3.7	Agree
5. The overall setup of my learning environment supports my ability to stay focused and productive during academic activities.	1.0	3.7	Agree
Overall	0.7	3.7	Agree

Table 8 illustrates the level of student engagement in online and remote learning courses. The results indicate that participation in online or remote learning courses, even in part due to circumstances such as the COVID-19 pandemic (M=3.9, SD=1.1), was perceived as accurate. On the other hand, all other statements about online learning were perceived as neutral (overall mean = 3.2, SD=0.6)

Statements	SD	Mean	Description
1. I have participated in online or remote learning courses, even partially, due to circumstances such as the COVID-19 pandemic	1.1	3.9	Agree
2. My experiences with online learning have been more on the positive effect,	0.9	2.8	Neutral
3. The flexibility of online learning has positively impacted my ability to manage my schedule	0.9	3.0	Neutral
4. Interactions with peers and instructors in online courses have been abundant.	0.7	3.1	Neutral
5. Technology-related challenges have significantly hindered my online learning experience. (reverse legend)	0.8	3.4	Disagree
Overall (negative statements was coded in reverse)	0.5	3.0	Neutral

Table 9 shows the perceived effectiveness of the teaching methods employed in helping students learn, retain information, and align themselves with their preferred learning style. All statements regarding the teaching methods were perceived as effective (overall mean = 3.8, SD=0.8).

Statements	SD	Mean	Description
1. The teaching methods or approaches employed have been highly effective in helping me learn and retain information.	0.9	3.8	Agree
2. I believe that the teaching methods in place contribute positively to my learning and retention of information.	0.9	3.8	Agree
3. The teaching methods used align well with my preferred learning style.	0.9	3.5	Agree
4. The variety of teaching methods appeals to different learning styles, promoting a more engaging learning experience	2.1	3.9	Agree
5. Teaching methods in my educational institution actively encourage student participation and engagement	1.0	3.7	Agree
Overall	0.8	3.8	Agree

Table 10 shows the students' perceived use of technology in their education and the extent to which they believe it enhances their learning experience. They perceived a positive contribution from technology to education (overall mean = 3.4; SD=0.6).

Statements	SD	Mean	Description
1. I have an incredibly positive perception of the use of technology (e.g., online tools, educational apps) in my education	0.9	3.6	Agree
2. I hold a positive view of how technology enhances my learning experience	0.9	3.7	Agree

3. My learning experience is significantly enhanced by the integration of technology in education	0.9	3.5	Agree
4. Specific technology tools or platforms positively contribute to my understanding and engagement in learning	0.8	3.8	Agree
5. I have encountered technology tools or platforms that have negatively impacted my learning experience (reverse legend)	1.0	3.4	Disagree
Overall (negative statements was coded in reverse)	0.6	3.4	Agree

Qualitative Aspects

Thematic Analysis (Students)

Learning environment conducive to academic success and well-being

Theme	Description
Physical Environment	A well-organized and comfortable physical space, free of clutter and well-lit, is essential for fostering concentration and efficiency during study sessions.
Access to Educational Resources	The availability and accessibility of educational resources, including a well-equipped library, online databases, and relevant course materials, contribute to comprehensive learning.
Integration of Technology	The integration of technology, including high-speed internet, up-to-date software, and interactive learning tools, enhances the educational experience, making it dynamic and engaging.
Social Support	A supportive social environment, built through interactions with peers, professors, and mentors, is imperative for both academic and emotional well-being.
Flexibility and Autonomy	Flexibility in the learning schedule and autonomy to explore personal interests contribute significantly, fostering a sense of ownership over one's education and enhancing motivation.
Inclusive and Diverse Environment	An inclusive and diverse academic environment, exposing individuals to varied perspectives and ideas, enhances critical thinking and prepares them for a globalized world.

Health and Wellness Initiatives	The integration of health and wellness initiatives, including access to fitness facilities, mental health resources, and programs promoting a healthy work-life balance, is vital for well-being.
Quality of Teaching Methodologies	The quality of teaching methodologies, incorporating varied instructional approaches catering to diverse learning styles, is a key determinant of academic success.
Feedback and Evaluation Systems	A robust system for feedback and evaluation, providing constructive feedback from peers and instructors, aids in identifying areas for improvement and promotes continuous learning.
Extracurricular Engagement	Beyond the academic curriculum, opportunities for extracurricular activities, such as participation in clubs, sports, or cultural events, contribute to a well-rounded education.

This analysis highlights critical aspects of the learning environment that contribute to academic success and well-being. A well-organized physical space, access to educational resources, integration of technology, and social support are foundational. Flexibility, autonomy, and inclusive environments fosters a sense of ownership and readiness. Health and wellness initiatives, quality teaching methodologies, and effective feedback systems are vital for holistic development. Extracurricular engagement beyond academics enriches overall educational experience. This synthesis underscores the interconnected nature of these elements, emphasizing the need for a comprehensive approach to create a supportive and enriching learning environment.

Challenges or distractions related to technical issues in the learning environment.

Theme	**Description**
Technical Infrastructure Challenges	- Slow internet connectivity and malfunctioning devices are identified as pervasive issues.
Disruption to Online Learning	- Technical glitches disrupt the seamless flow of online learning and research activities.
Impact on Research Activities	- Challenges with technological infrastructure hinder research activities, potentially impacting the quality and depth of research conducted.

Universal Nature of Challenges	- The repetition of the issue across multiple responses highlights the universality of these challenges, suggesting a widespread impact on the learning environment.
Need for Technological Solutions	- The prevalence of technical challenges underscores the need for effective technological solutions to ensure a smooth learning experience.

This analysis revealed the consistent technical challenges in the learning environment. Slow Internet connectivity and malfunctioning devices are pervasive issues that disrupt the seamless flow of online learning and hinder research activities. The universal nature of these challenges, evident through their repetition across multiple responses, suggests their widespread impact on the learning environment. These findings emphasize the critical need for effective technological solutions to address these challenges and to ensure a smooth and productive learning experience for students.

Online Learning Experiences

Theme	**Description**
Advantages of Online Learning	
Flexibility of Scheduling	Online learning provides the individual with the flexibility to schedule study hours according to their peak productivity times, allowing for a personalized and efficient learning experience.
Access to Digital Resources	The wealth of digital resources available online facilitates comprehensive research, offering a broader range of materials compared to traditional learning methods.
Disadvantages of Online Learning	
Technical Issues	Online learning presents challenges such as internet connectivity problems or platform glitches, occasionally disrupting the learning experience.
Lack of Face-to-Face Interaction	The absence of face-to-face interaction is noted as a drawback, impacting the depth of social connections and the immediacy of feedback from instructors.

Advantages of Online Learning

Flexibility of Scheduling

Online learning is a versatile and accessible learning method. Individuals have benefited from scheduling flexibility, which allows them to tailor their study hours to the peak productivity times. This flexibility enables learners to create personalized timetables, accommodate various responsibilities, and optimize their learning efficiency.

Access to Digital Resources

Additionally, the wealth of digital resources available online has facilitated comprehensive research. Compared to traditional learning methods, online platforms offer a broader range of materials, including articles, videos, and interactive simulations. This wealth of resources enhances the depth and breadth of learning and provides diverse perspectives on the subjects studied.

Disadvantages of Online Learning

Technical Issues

However, despite these advantages, online learning presents several challenges. Technical issues such as Internet connectivity problems or platform glitches occasionally disrupt learning experiences. Such disruptions can hinder the flow of the learning process and create frustration among individuals.

Lack of Face-to-Face Interaction

Another notable drawback is the absence of face-to-face interaction. In a traditional classroom setting, students benefit from direct communication with instructors and peers, fostering a sense of community and providing immediate feedback. Online learning that lacks this physical presence may limit the depth of social connections and affect the immediacy of feedback from instructors.
Effective Teaching Methods

Theme	**Description**
Diversity of Instructional Modalities	
Visual Aids, Multimedia Presentations, and Interactive Discussions	Diverse instructional modalities, including visual aids, multimedia presentations, and interactive discussions, have proven to be impactful. The incorporation of different learning styles ensured a more comprehensive understanding of the material. This approach caters to individual preferences and allows for a personalized

	learning experience, contributing to better information retention.
Teaching Methods Involving Feedback and Assessments	
Regular Feedback on Assignments, Quizzes, and Exams	Teaching methods that involve regular feedback and assessments play a crucial role in the learning process. Timely feedback on assignments, quizzes, and exams helps the individual gauge their understanding of the material, identify areas for improvement, and adapt their study strategies accordingly. This iterative feedback loop enhances the retention of information in the long term.

Diversity of Instructional Modalities

Visual Aids, Multimedia Presentations, and Interactive Discussions

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Teaching methods that involve regular feedback and assessments play a crucial role in the learning process. Timely feedback on assignments, quizzes, and exams helps individuals gauge their understanding of material. This allowed them to identify areas for improvement and to adapt their study strategies accordingly. This iterative feedback loop enhances long-term information retention.

Teaching Methods that Need Improvement

Theme	**Description**
Integration of Technology	

Seamless Incorporation into the Curriculum	The individual identifies the need to improve the integration of technology within educational institutions. While acknowledging the importance of technology in contemporary learning, there is a call for enhancing its seamless incorporation into the curriculum. This includes providing adequate training for both educators and students to navigate digital platforms effectively, ensuring a smoother and more productive online learning experience.
Adequate Training for Educators and Students	There is a recognition that adequate training for both educators and students is essential for effective use of technology. The lack of proficiency in navigating digital platforms may hinder the overall learning experience.
Diversification of Teaching Styles	
Catering to Diverse Learning Preferences	A perceived need for greater diversification of teaching styles within the educational institution is identified. The current teaching methods may not cater to the diverse learning preferences of all the students. There is a call for a more inclusive approach that incorporates a variety of instructional modalities, such as project-based learning, collaborative activities, and experiential learning. This could better accommodate different learning styles and enhance overall understanding and retention of information.
Conclusion	
Addressing Technological Integration and Diversity	In conclusion, the identified areas for improvement revolve around addressing the integration of technology and diversification of teaching styles. Ensuring the seamless incorporation of technology into the curriculum with proper training for both educators and students is crucial. Simultaneously, adopting a more inclusive approach to teaching that accommodates diverse learning preferences through various instructional modalities is deemed necessary for enhancing overall understanding and retention of information.

Integration of Technology

Seamless Incorporation into the Curriculum

Individuals identify a need to improve the integration of technology within educational institutions. Acknowledges the importance of technology in contemporary learning. Calls to enhance seamless incorporation into the curriculum.

Adequate Training for Educators and Students

Adequate training of educators and students is essential for effective use of technology. Lack of proficiency in navigating digital platforms may hinder the overall learning experience.

Diversification of Teaching Styles

Catering to Diverse Learning Preferences

Perceived need for greater diversification of teaching styles within educational institutions. Current teaching methods may not cater to the diverse learning preferences of all the students. Calls for a more inclusive approach incorporating various instructional modalities.

Technology Tools and Platforms Impacting Learning Experience

Theme	**Description**
Positive Impactful Technology	
Effective Learning Tools	Individuals have experienced positive impacts from specific technology tools or platforms in their learning journey. While specific examples are not provided, it is evident that certain technologies have contributed positively to the learning experience.
Negative Impactful Technology	
Challenges with Learning Management System (LMS)	The individual has encountered challenges with the Learning Management System (LMS) used in their educational institution. The LMS, intended to streamline course content and assignments, is noted for its complexity and occasional technical limitations. These issues have led to frustration and disruption in the learning process, highlighting the need for

	improvements in the usability and reliability of the chosen LMS.

Positive Impactful Technology

Effective Learning Tools

Individuals experience positive effects from specific technological tools or platforms during their learning journeys. Specific examples are not provided, but it is evident that certain technologies have contributed positively to the learning experience.

Negative Impactful Technology

Challenges with Learning Management System (LMS)

Individuals encounter challenges in the learning management systems (LMS) used in their educational institutions. The LMS, intended to streamline course content and assignments, was noted for its complexity and technical limitations. These issues have led to frustration and disruption in the learning process, highlighting the need to improve the usability and reliability of selected LMS.

Thematic Analysis (Teachers)

Effective Teaching Methods for Student Engagement

Teaching Method/Strategy	**Description**	**Elaboration**
Active Discussion and Engaging Use of Technology	- Fostering interactive discussions. - Integrating technology (laptops, tablets) for research and online activities.	- Dynamic and engaging learning environment.
Motivation Mastery of the Lesson	- Emphasizing motivation and mastery of the lesson. - Use of visual aids like TV and PowerPoint (PPT). - Administering quizzes for improvement.	- Motivational strategies to enhance lesson delivery. - Aligning lessons through visual aids. - Quizzes for continuous improvement.

Brainstorming for Knowledge and Practical Experience	- Utilizing brainstorming to gauge knowledge and practical experience.	- Assessing understanding through interactive brainstorming sessions.
Incorporation of Games, Traditional, and Modern Methods	- Using a combination of games, traditional, and modern methods. - Integrating technology (laptop, TV, speakers, projectors).	- Engagement through diverse methods. - Concerns about potential disengagement during presentations.
Discovery and Collaborative Techniques	- Implementing discovery methods (induction, demonstration). - Encouraging collaborative techniques for active participation.	- Active student participation through discovery and collaboration. - Acknowledgment of challenges related to internet connectivity and power supply.
Collaborative Activities and Engagement	- Emphasizing collaborative activities. - Use of PowerPoint (PPT) with videos.	- Facilitating collaborative activities with multimedia support. - Challenges in creating appealing and informative PowerPoint presentations.
Interactive Activities and Real-World Examples	- Utilizing interactive or gamified PowerPoint (PPT). - Incorporating real-world examples for exploration.	- Enhancing engagement through interactive presentations. - Challenges related to material availability.
Group Activities for Unlocking Difficulties	- Using group activities for unlocking difficulties. - Incorporating deductive and inductive methods. - Utilizing laptops and computers.	- Unlocking difficulties through group activities. - Addressing challenges related to poor internet connectivity.
Professional Development and Training	- Participating in professional development activities (regional training, webinars).	- Enhancing teaching skills through ongoing professional development. - The specific impact on teaching is not detailed.

A thematic analysis of teaching methods revealed a diverse range of strategies employed by educators. Active discussions on technology integration, motivation mastery using visual aids, and incorporation of games and modern methods are emphasized. Brainstorming for knowledge assessment, collaborative techniques, and real-world examples are also prevalent. Challenges related to technology, such as poor Internet connectivity, underscore the need for infrastructure support. Additionally, the importance of ongoing professional development through activities such as regional training and webinars has been recognized. Despite effective strategies, the responses highlighted the continual need for adaptation and improvement to address challenges and enhance overall teaching experience.

Types of technology used in teaching and their benefits.

Technology	**Usage**	**Benefits**
Laptop, Tablets	Research and engaging online class activities	Enhances student involvement and provides a platform for dynamic, interactive learning.
TV, PPT	Presentation of information	Effectively conveys content in a visually appealing manner, aiding in comprehension.
PPT	Visual aid in presentations	Facilitates organized and visually appealing lessons, improving the understanding of complex topics.
Laptop, TV, Speakers, Projectors	Utilized for various teaching activities	Enhances the audio-visual aspects of teaching, making lessons more engaging and interactive.
PPT with Videos	Visual aid and multimedia integration	Combines visual and auditory elements for a richer learning experience, catering to different learning styles.
Interactive or Gamified PPT	Engaging presentations with interactive elements	Makes learning enjoyable and interactive, fostering active participation and comprehension.
Video Clips	Incorporation into lessons for diverse subjects	Provides real-world examples, enhancing understanding and making lessons more relatable.

Laptops, Computers, Applications	Diverse applications in teaching and learning	Enables a versatile approach, utilizing various tools for different aspects of the educational process.

A thematic analysis of technology usage in teaching highlights the variety of tools employed by educators. Laptops and tablets are used for research and engaging in online class activities to enhance student involvement. The use of TV and PowerPoint (PPT) is recurrent, indicating their effectiveness in conveying information. PPT, along with videos, is a prevalent choice for visual aids, and contributes to a dynamic learning environment. The incorporation of interactive or gamified PPT adds an engaging dimension to lessons. The consistent use of video clips underscores their role in facilitating understanding. A broad spectrum of technologies, including laptops, computers, and video applications, provides versatile teaching approaches. Overall, the responses emphasized the significant role of diverse technologies in enhancing teaching and learning experiences.

Students' reference

Theme	**Key Points**
Alignment of Lessons	- Internet references are used to align lessons with additional online resources.
Enhancing Engagement	- Providing internet references is seen to encourage active engagement in the learning process.
Facilitating Exploration	- Internet references are used to prompt students to explore topics independently, fostering a deeper understanding.
Supporting Classroom Discussion	- References are given to compensate for potential forgetfulness of classroom discussions, reinforcing concepts outside the classroom setting.
Ease of Access	- Internet references are provided to allow students easy access to information, acknowledging the practicality of the digital learning environment.
Encouraging Independent Thinking	- Internet references aim to give students new ideas and promote independent thinking and critical analysis.
Subject-specific References	- References are tailored to the specific subject, ensuring relevance and optimization of the learning experience.

Thematic analysis reveals that the decision to give students references from the Internet is motivated by a combination of pedagogical considerations, a desire to enhance engagement, and an acknowledgment of the evolving learning landscape. Educators leverage online resources to align lessons, support classroom discussions, facilitate exploration, and encourage independent thinking. The responses reflect a nuanced understanding of the role of Internet references in modern education, emphasizing the importance of a dynamic and inclusive approach to teaching and learning.

Challenges and concerns encountered when using technology for teaching.

Theme	**Key Points**
Technical Difficulties	- Equipment malfunctions can disrupt the flow of discussion.
	- Concerns about maintaining an easy elaboration of lessons.
Internet Connectivity	- Access to good internet is crucial for effective teaching.
	- Students may disengage if there are issues with internet connectivity.
	- Connectivity issues can affect students' ability to listen or take notes, especially if relying on slides.
	- Consistent challenges with internet connection and power supply.
PowerPoint Presentation Concerns	- Questions about making PowerPoint presentations both appealing and informative.
Lack of Material Availability	- Concerns about the availability of materials for teaching.
Poor Internet Connectivity	- Multiple mentions of poor internet quality affecting teaching.

This table summarizes the identified themes and key points related to the challenges and concerns faced when incorporating technology into teaching. These issues range from technical difficulties and Internet connectivity problems to concerns about maintaining student engagement, and the appeal and informativeness of presentations. Additionally, there are mentions of the challenges related to the availability of teaching materials.

Assessment methods are typically used to evaluate students' progress.

Theme	Key Points
Quizzes and Exams	- Regular use of quizzes and exams as assessment methods.
	- Administering quizzes after lessons for ongoing evaluation.
	- Recognition that giving quizzes post-lesson can improve teaching capability.
Performance Tasks	- Utilization of performance tasks as a form of assessment.
	- Integration of different types of assessments, including essays, identification tests, true or false, and multiple-choice.
Projects	- Inclusion of projects as a method to assess students' progress.
Variety of Assessments	- Use of a combination of quizzes, exams, performance tasks, research, reaction papers, and summarization of concepts.
Written Assessment	- Emphasis on written performance tasks, reports, and discussions as assessment tools.
Daily Performance	- Consideration of daily performance as part of the assessment process.
Video Presentations	- Assessment through students presenting topics via video.
Quarterly Assessment	- Inclusion of quarterly assessments for a broader evaluation of learning progress.
Word Problems	- Use of word problems in written assessments.

This table provides an overview of the thematic analysis, highlighting the variety of assessment methods used by educators. These themes include traditional approaches such as quizzes and exams as well as a diverse range of assessment methods such as performance tasks, projects, written assessments, and the integration of distinct types of quizzes. Emphasis on ongoing assessments and a mix of evaluation techniques was evident in the responses.

How assessment practices can be improved to better support student learning and growth

Theme	Key Points
Developing Critical Thinking Skills	- Practicing learning to help students develop critical thinking skills.
Knowledge Verification	- The belief that assessment is necessary to verify what students have learned.
Immediate Post-Lesson Assessment	- Conducting assessments immediately after the lesson to test student understanding.
Continuous Improvement through Research	- Continuous research and training to improve assessment practices.
Assessment Score as Learning Indicator	- Viewing the score of assessments as an indicator of students' learning and growth.
Improvement of Assessment Techniques	- Strong belief in the need to improve assessment techniques.
Regular Monitoring for Learning Progress	- Providing regular monitoring of learning progress after assessments.
Identifying Weaknesses and Improving	- Assessments help identify weaknesses and strengths, facilitating targeted teaching to fill learning gaps.
Variety of Methods in Formative Assessment	- Improvement by incorporating a variety of methods, including formative assessment.
Lifelong Learning and Assessment	- Assessment practices aimed at fostering lifelong learning.

This table summarizes the thematic analysis, showing a range of beliefs about how assessment practices can be enhanced to better support student learning and growth. The identified themes included the importance of critical thinking, necessity of assessments for knowledge verification, timing of assessments, continuous improvement through research, role of assessment scores, need for improvement in assessment techniques, regular monitoring of progress, targeted teaching based on assessment results, use of various formative assessment methods, and the alignment of assessment practices with lifelong learning goals.

Participation in professional development activities related to teaching using technology in the past year.

Theme	Key Points
No Participation	- Multiple responses indicating no participation in professional development activities related to teaching with technology in the past year.
Limited Information	- Some responses provide minimal information, stating "none," "not yet" or "not yet" making it unclear if there was a lack of opportunities or if the individual did not participate.
Yes, Webinars and Training	- Positive responses indicating participation in professional development activities such as regional training in science, webinars, etc.
	- Acknowledgment of engagement in webinars as a specific form of professional development.
General Affirmative Responses	- Affirmative responses without specific details about the nature and impact of the professional development experiences.

This table summarizes the thematic analysis, highlighting the prevalence of non-participation in professional development related to teaching with technology in the past year. Among those who participated, there was a mention of engaging in webinars, regional training in science, and other unspecified activities. The impact of these experiences on teaching is not explicitly described in the responses provided.

DISCUSSION

Quantitative and qualitative data provide a comprehensive overview of teacher and student profiles, their perceptions of various aspects of the educational environment, and the integration of technology into teaching and learning. These findings highlight several key points, which require further investigation.

Teacher and Student Profiles

The distribution of teacher respondents across schools in Isabela reflects diverse representations, thus ensuring a broad perspective of the educational landscape.

Many female teachers belonging to the middle-adult age group may influence their teaching styles and approaches, as these demographics often bring unique perspectives and experiences into the classroom.

The focus on junior high schools (JHS) and the significant percentage of teachers with 10 years of teaching experience or less indicate a dynamic teaching environment, possibly with a mix of experienced educators and those early in their careers.

For students, representation from various schools, especially those with a high concentration in specific institutions, offers insight into the learning experiences of diverse groups.

The majority were female, aged 17-18 years, and in grade 12, shedding~~s~~ light on the demographics of the student population, which may influence their preferences and learning needs.

Teaching Methods and Technology Integration

The overwhelmingly positive perception of teaching methods by teachers, with a mean of 4.8 out of 5, indicates a strong consensus on their effectiveness. This alignment is crucial in creating a cohesive and impactful teaching environment.

The universal daily integration of technology by all teachers suggests a commitment to remaining technologically relevant to the rapidly evolving educational landscape.

Impact of Technology on Learning

Teachers acknowledge the strong positive impact of technology on various aspects of student learning, including understanding, engagement, and critical thinking, and emphasize the pivotal role of technology in enhancing educational experience.

The positive perception of students towards technology in education aligns with teachers' beliefs, indicating the mutual recognition of their value.

Challenges Faced

The thematic analysis of challenges faced by both students and teachers, such as technical difficulties, slow Internet connectivity, and issues with the Learning Management System (LMS), underscores the need for a robust technological infrastructure and ongoing support.

Conclusions

This study has the potential to greatly enhance the field of education by demonstrating the positive effects of innovative pedagogical methods and technological integration on contemporary learning. By employing a mixed-methods approach, this study provides a comprehensive understanding of both the quantitative and qualitative aspects of the teaching and learning environments. This approach allowed for a thorough examination of the perceptions of both educators and students, emphasizing the

effectiveness of current teaching methods and widespread incorporation of technology in the classroom. This study significantly advances the current knowledge by providing empirical evidence of the advantages and challenges associated with technological integration in education. The key findings of this study reveal that both educators and students recognize the positive impact of technology on learning, despite facing technical issues and varying online learning experiences. Quantitative data, supported by qualitative insights, provide a detailed picture of the current educational landscape, highlighting effective teaching methods and areas that need improvement.

Future research should focus on several key areas, including the long-term impact of technology on learning outcomes and how sustained use of technology in education affects student performance over time; the effectiveness of professional development programs in supporting innovative pedagogical practices; personalized online learning experiences to cater to individual student needs; the impact of enhanced technological infrastructure on teaching effectiveness and student engagement; and the relationship between student well-being and the physical and technological aspects of the learning environment. By addressing these areas, future studies can build on the findings of this research, further advancing the field of education and contributing to the development of more effective and inclusive educational practices.

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EXPLORING STAKEHOLDERS' PERCEPTIONS OF BRIGADA ESKWELA AND ITS IMPACT ON KALAMTUKAN ELEMENTARY SCHOOL

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ABSTRACT

This study examined the significance of the Brigada Eskwela (BE) program at Kalamtukan Elementary School, focusing on stakeholders' engagement, satisfaction, and the resulting improvements. The participants included 15 teachers, 30 students, 30 parents, 30 community members, and 30 local officials. A researcher-made questionnaire assessed the stakeholders' perceptions of the BE program's impact on school facilities, student performance and engagement, the learning environment, community participation and satisfaction, and the sustainability of improvements. The findings revealed that all participants were very active in the BE initiatives. The stakeholders perceived the school facilities and learning environment as excellent, with significant improvements in students' performance and engagement due to Brigada Eskwela. The results also indicated very high satisfaction with the school improvements and a very high level of community engagement during the program's implementation. Furthermore, the stakeholders believed in the long-term sustainability of these improvements and noted the positive impact of the National Brigada Eskwela Hall of Fame Award on the community's perception of the school. The BE program was found to be highly successful, well-received, and impactful. Consequently, it is recommended to continuously promote strong community relationships and stakeholder engagement. Additionally, implementing a monitoring and evaluation system to assess the long-term impact of the improvements and identify areas needing further attention is suggested.

Keywords: *Brigada Eskwela (BE), Program Implementation, Community Engagement, Stakeholders, School Facilities*

INTRODUCTION

Community engagement is essential for eliminating barriers to quality education. Though external problems like low enrollment are identifiable, the community's reflective analysis of its unique circumstances leads to sustainable, locally generated solutions. Effective engagement empowers communities to support education in various ways, including school management and curriculum development. ("First Principles: Community Engagement in Education Programs Compendium," n.d.). Bekalu (2011), likewise, posited that community participation is a key factor in enhancing access to and the quality of education in a country. Additionally, schools often struggle to adapt to changes or implement necessary program improvements without active involvement from the community in various aspects (Bekalu, 2011).

Public schools in the Philippines face challenges in getting the community involved in their programs. At the beginning of each school year, they often struggle with the lack of support and cooperation from parents and other stakeholders. To address this issue, the Brigada Eskwela (BE) program, also known as National Maintenance Week, was launched in May 2003 (Brigada Eskwela Manual, 2009). This program exemplifies successful collaboration between schools and communities. One of the main hurdles is for school administrators to effectively communicate their efforts to the public in order to gain community support for improving education (DO 21, s. 2011). Indeed, Carmelo (2022) emphasized the importance of forming school-community partnerships, involving administrators, teachers, and students, to effectively implement programs like Brigada Eskwela. Such collaborations not only provide valuable resources but also help schools save costs. The ongoing support and efforts from various stakeholders have resulted in better learning environments and enhanced school facilities, ready for use at the beginning of the academic year. Consequently, students can now focus on their studies from the first day of classes without the distraction of preparing their classrooms.

Various Filipino scholars have explored the implementation of the BE (Brigada Eskwela) program in different schools in the country. Nieva (2023), for instance, focused on BE program implementation by school sizes and found that the majority of participants recognized the significant contributions made by stakeholders and appreciated the active involvement of private partners in the school. Requina (2022), on the other hand, investigated the level of compliance with the BE program implementation, while Legal et al. (2024) looked into the approaches that public school teachers used to ensure effective implementation of the BE program during the COVID-19 pandemic. Furthermore, Garcia (2021) explored the best practices in implementing the BE program and stated that Brigada Eskwela is characterized by its collaborative nature, fostering a spirit of volunteerism and encouraging individuals from various sectors to assist schools annually and that it enhances community support for basic education by moderately enriching curricular activities and improving physical facilities, while significantly promoting a unified purpose in support of basic education.

However, this study specifically focuses on the Brigada Eskwela initiatives of Kalamtukan Elementary School in Bayawan City, Negros Oriental, which initiated its BE program in

2013. Before the program was implemented, the school faced challenges such as insufficient resources, lack of community engagement, and coordination and sustainability issues for its school initiatives. Nonetheless, in 2015, the school received the prestigious National Brigada Eskwela Hall of Fame Award and its BE program has been successful in recent years. However, the current researcher believes it is still important to continuously monitor and evaluate the BE program to maintain consistent community participation and educational improvement. The study focuses on understanding how stakeholders perceive the effectiveness of the BE program in enhancing the school. No previous local studies have explored the perspectives of parents, students, teachers, community members, and local officials regarding the BE program, which is why this study was undertaken.

Thus, the main purpose of the study is to collect feedback from stakeholders about their thoughts on the school's BE program and how it has contributed to enhancing school facilities and the learning environment. This feedback is essential for maintaining the success of the BE program.

Research Questions

This inquiry aims to gather the perceptions of Kalamtukan Elementary School's stakeholders regarding the Brigada Eskwela program implementation, community involvement, and the program's impact on the school's improvement. Specifically, it seeks to answer the following questions:

1. How active are the following stakeholders in engaging in the school's BE program:
   1.1 Teachers;
   1.2 Students;
   1.3 Parents;
   1.4 Community Members; and
   1.5 Local Officials?
2. What is the impact of the BE program on the school, as perceived by the stakeholders, in terms of:
   2.1 School Facilities;
   2.2 Student Performance and Academic Engagement; and
   2.3 Overall Learning Environment?
3. What is the level of community involvement and support and level of satisfaction during the Brigada Eskwela?
4. What are the stakeholders' perceptions of the long-term sustainability of the improvements resulting from the Brigada Eskwela?
5. What is the impact of the National Brigada Eskwela Hall of Fame Award on the community's perception of Kalamtukan Elementary School as perceived by the stakeholders?

METHODOLOGY

Research design

This study utilized the descriptive method of research to achieve its objectives. This approach was instrumental in assessing the stakeholders' perceptions of the Brigada Eskwela (BE) program, its impact on Kalamtukan Elementary School, and the extent of community engagement throughout the program's implementation. By employing this method, the study provided ample account of the stakeholders' views and measured how the program impacted the school facilities and fostered community involvement.

Population and sampling

The participants for this study were chosen using the simple random sampling technique. This method guarantees that each person in the population has an equal chance of being selected for the sample (Acharya et al., 2013). In this study, the selection process involved using a table of random numbers. A total of 135 participants—15 teachers, 30 students, 30 parents, 30 community members, and 30 local officials—were selected.

Research instrumentation

The "Brigada Eskwela Impact and Effectiveness Survey" is a questionnaire created by the researcher as the main tool for gathering data in this study. The first part of the questionnaire collects information about the participants. The second part contains questions aimed at measuring the level of community engagement, the participants' perceptions of the program's contribution to improving the school's facilities and learning environment, and the level of their satisfaction with the support given by other members of the community (i.e. volunteers, local organizations, and businesses). Moreover, the questionnaire underwent review by three experts to ensure its contents' validity. A trial run was also conducted to confirm the reliability of the questionnaire's items. The results of the trial run, using Cronbach's alpha, showed alpha values of 0.7 and above, indicating that all items are reliable.

Data gathering procedures and analysis

Before distributing the questionnaires widely, a pilot test was conducted with a small group of teachers, students, parents, community members, and local officials. This step ensured the questions were clear and relevant. Adjustments were made based on feedback, and the survey was then distributed as paper forms during and after Brigada Eskwela events. Anonymity was also assured to encourage honest feedback from the participants. Moreover, efforts were made to include a diverse and representative sample from various roles within the school community.

After data collection, quantitative data were analyzed using statistical methods to identify trends. The results were then compiled into a comprehensive report that details the methodology, key findings, and actionable recommendations. This report was shared with stakeholders, including school administrators, local education authorities, and community leaders, to guide future Brigada Eskwela initiatives, ensuring they meet community needs and expectations.

RESULTS

Table 1 shows the participants' profile information as regards their role during the Brigada Eskwela.

Table 1. Stakeholders' Profile

Profile (Role/Position)	Frequency	Percentage
Teachers	15	11.2
Students	30	22.2
Parents	30	22.2
Community Members	30	22.2
Local Officials	30	22.2
Total	**135**	**100.0**

It can be seen from the data that teachers have the lowest number of participants, while there are equal numbers of participants among students, parents, community members, and local officials.

Level of Stakeholders' Engagement and Participation

Table 2 reveals the participants' perceptions of how active they are in the Brigada Eskwela.

Table 2 Stakeholders' Participation and Engagement Level

Participants	Weighted Mean	Verbal Description
Teachers	3.93	Very Active
Students	3.77	Very Active
Parents	3.90	Very Active
Community Members	3.73	Very Active
Local Officials	3.97	Very Active
Average	3.86	Very Active

Legend: 3.26-4.00 - Very Active; 2.51-3.25 - Moderately Active; 1.76-2.50 - Minimally Active; 1.00-1.75 - Not Involved

The data in Table 2 indicate that all the stakeholders participated very actively in the BE program. In particular, teachers, parents, and local officials have the highest levels of engagement as signified by the mean values of 3.93, 3.90, and 3.97, respectively.

Impact of Brigada Eskwela on Education

Table 3 presents data identifying how the Brigada Eskwela has contributed to the improvement of Kalamtukan Elementary School specifically in terms of school facilities, students' academic performance and engagement, and overall learning environment.

Table 3 School Facilities and Educational Improvement during the Brigada Eskwela

Areas	Weighted Mean	Verbal Description
School Facilities		
Teachers	5.00	Excellent
Students	5.00	Excellent
Parents	5.00	Excellent
Community Members	4.97	Excellent
Local Officials	4.97	Excellent
Average	**4.99**	**Excellent**
Student Performance & Academic Engagement		
Teachers	4.87	Significantly Improved
Students	4.87	Significantly Improved
Parents	4.93	Significantly Improved
Community Members	4.83	Significantly Improved
Local Officials	4.93	Significantly Improved
Average	**4.98**	**Significantly Improved**
Overall Learning Environment		
Teachers	5.00	Excellent
Students	5.00	Excellent
Parents	5.00	Excellent
Community Members	4.97	Excellent
Local Officials	4.90	Excellent
Average	**4.97**	**Excellent**

Legend: 4.21-5.00 - Excellent/Significantly Improved; 3.41-4.20 - Good/Improved; 2.61-3.40 - Fair/No Noticeable Change; 1.81-2.60 - Poor/Declined; 1.00-1.80 - No Change Observed/Unsure

The results in Table 3 show that all stakeholders believe that the school facilities are excellent as signified by the average mean of 4.99. They also think that the students' performance and academic engagement have improved significantly, with an average mean of 4.98, because of the Brigada Eskwela. Furthermore, they perceive the overall learning environment to be excellent, with an average mean of 4.97, due to the program

implementation.

Level of Community Engagement and Stakeholders' Satisfaction

Table 4 presents the level of community involvement and the participants' satisfaction with the support provided by local businesses, organizations, and volunteers during the Brigada Eskwela activities.

Table 4 Community Involvement and Satisfaction Level during the Brigada Eskwela

Areas	Weighted Mean	Verbal Description
Community Involvement and Support		
Teacher	4.93	Very High
Students	4.90	Very High
Parents	5.00	Very High
Community Members	4.83	Very High
Local Officials	4.97	Very High
Average	**4.93**	**Very High**
Satisfaction with the Support from Local Businesses, Organizations, and Volunteers		
Teachers	4.80	Very Satisfied
Students	4.77	Very Satisfied
Parents	4.83	Very Satisfied
Community Members	4.67	Very Satisfied
Local Officials	4.70	Very Satisfied
Average	**4.75**	**Very Satisfied**

Legend: 4.21-5.00 - Very High/ Very Satisfied; 3.41-4.20 - High/Satisfied; 2.61-3.40 - Moderate/Neutral; 1.81-2.60 - Low/Dissatisfied; 1.00-1.80 - None/Very Dissatisfied

The data indicate that there is a very high level of community involvement and support during the Brigada Eskwela as perceived by all the stakeholders. The stakeholders also claimed to be very satisfied with the support they have received from local organizations, businesses, and volunteers. It must be noted as well that among the stakeholders, the parents gave the highest ratings both in the areas of community involvement and satisfaction level.

Perceptions of Stakeholders on Sustainability

Table 5 provides data signifying the participants' views of the sustainability of the Brigada Eskwela's positive outcomes.

Table 5 Stakeholders' Perceptions of the Long-Term Sustainability of the Improvements Brought by the Brigada Eskwela

Participants	Weighted Mean	Verbal Description
Teachers	3.93	Yes, definitely
Students	3.80	Yes, definitely
Parents	3.73	Yes, definitely
Community Members	3.80	Yes, definitely
Local Officials	3.73	Yes, definitely
Average	**3.80**	**Yes, definitely**

Legend: 3.26-4.00 - Yes Definitely; 2.51-3.25 - Yes, to some extent; 1.76-2.50 - Not sure; 1.00-1.75 - No, not sustainable

Table 5 reflects the participants' perceptions as to whether the improvements brought on by the Brigada Eskwela initiatives are sustainable or not in the long run. It is quite clear, based on the average mean of 3.80, that all the participants have a strong belief in the long-term sustainability of the BE program's positive impact on Kalamtukan Elementary School.

National Brigada Eskwela Hall of Fame Award and Its Impact on Community's Perception of Kalamtukan Elementary School

Table 6 presents evidence of the stakeholders' views of how the National Brigada Eskwela Hall of Fame Award, received by Kalamtukan Elementary School, has affected how the community perceives the school.

Table 6. Assessment of the Participants' Perceptions of the Impact of the National Brigada Eskwela Hall of Fame Award on Community Perception

Participants	Weighted Mean	Verbal Description
Teachers	5.00	Very Positive
Students	5.00	Very Positive
Parents	5.00	Very Positive
Community Members	4.93	Very Positive
Local Officials	5.00	Very Positive
Average	**4.99**	**Very Positive**

Legend: 4.21-5.00 - Very Positively; 3.41-4.20 - Positively; 2.61-3.40 - No Noticeable Impact; 1.81-2.60 - Negatively; 1.00-1.80 – Unsure

The data show that, overall, the stakeholders believe that the National Brigada Eskwela Hall of Fame Award has a very positive impact on the community's perception of Kalamtukan Elementary School, as evidenced by the average mean of 4.99. Specifically, the teachers, students, parents, and local officials gave a perfect rating of 5.00. Only the community members gave a rating of 4.93.

DISCUSSION

Level of Stakeholders' Engagement and Participation

Notably, the teachers, parents, and local officials exhibited the highest engagement levels, which indicates a strong commitment from these groups. This result highlights the crucial roles of teachers, parents, and local officials in the successful implementation of the program. Their active involvement is essential for fostering a collaborative environment, ensuring that the objectives of Brigada Eskwela are effectively met and sustained. This is strengthened by the statements of Cando, as cited by Requina (2018), who found that the success of the Brigada Eskwela program depends on the commitment of school professionals, the cooperation of parents, the backing of the community, and the discipline of students to participate in volunteer activities. The program seeks volunteers willing to contribute their time, effort, and energy towards enhancing the school's infrastructure. Results from the study of Jungay and Guillo (2019), likewise, demonstrated that stakeholder volunteerism consistently remains at a high level.

Brigada Eskwela's Impact on Education

The high average mean of 4.99 indicates that the stakeholders unanimously consider the school facilities to be excellent, which is attributed to the effectiveness of the Brigada Eskwela program in improving physical infrastructure. Additionally, with an average mean of 4.98, the stakeholders believe that the program has significantly enhanced the students' performance and academic engagement, suggesting that improved facilities may positively impact educational outcomes. Lastly, the average mean of 4.97 for the overall learning environment implies that the Brigada Eskwela has created a conducive and supportive atmosphere for learning, which the stakeholders perceive as excellent. All these findings underscore the program's comprehensive impact on the school's educational quality and community involvement.

Similarly, Oco's study (2023) stresses the importance of a safe and adequate learning environment in enhancing students' performance, satisfaction, and participation in school activities and projects. Achieving this requires active stakeholder involvement, as the school staff alone cannot meet all the school's needs. Therefore, it is essential for school leaders to understand and implement strategies that attract volunteers, donors, and participants. On the same note, Nieva and Lim (2023) concluded that children with engaged parents exhibit notable improvements in academic performance, personality development, and participation in school activities, although these ideal conditions are often not seen in public secondary schools in other districts. They also revealed that Brigada Eskwela united community members to refurbish public schools in preparation for the new school year. During the week-long event, volunteers focused on tasks such as minor repairs, painting, and cleaning school campuses. Correspondingly, the data obtained by Andal et al. (2016) show that safe learning facilities achieved the highest level of implementation among the six provisions. This demonstrates that schools and educational partners prioritize and effectively focus their efforts on ensuring safe learning environments for students. It is reassuring to see that the safety and welfare of learners

are paramount for schools and their partners.

Level of Community Engagement and Stakeholders' Satisfaction

The findings underscore the success of Brigada Eskwela in fostering a strong sense of community and collective effort in supporting local schools. The high levels of involvement and support suggest that the program effectively mobilizes resources and engages various community members, including local organizations, businesses, and volunteers. This broad-based participation likely enhances the program's impact, ensuring that schools are well-prepared and maintained for the academic year. Moreover, the high satisfaction levels reported by stakeholders reflect the program's effectiveness in meeting their expectations and needs. This satisfaction likely contributes to sustained engagement and support from the community, as satisfied participants are more likely to continue their involvement in future initiatives. The positive feedback from local organizations and businesses indicates that these entities see value in their contributions, which can lead to more robust and long-term partnerships.

In addition, the fact that parents gave the highest ratings in both community involvement and satisfaction levels emphasizes the critical role they play in the program's success. Parents' active participation and high satisfaction suggest that they are highly invested in the education and welfare of their children, and they perceive the Brigada Eskwela as a valuable initiative that benefits the school and, by extension, their children. This strong parental involvement can have a positive ripple effect, encouraging other community members to participate and support the program. According to Cortez, as cited by Catid (2022), Brigada Eskwela was the school program with the highest participation from stakeholders, including parents, volunteers, and students. Parents played a particularly significant role, serving as observers and collaborators.

Perceptions of Long-Term Sustainability

The participants generally believe in the long-term sustainability of the improvements achieved through Brigada Eskwela initiatives at Kalamtukan Elementary School. The average mean score of 3.80 suggests a strong consensus among stakeholders that the positive changes brought about by the program will endure over time. This reflects confidence in the program's ability to maintain and support the school's enhanced facilities and learning environment, ensuring continued benefits for future students and the broader community. Resource mobilization was robust, with financial contributions amounting to 1,400,000.00 pesos and substantial material donations including paints, lumber, and other supplies. The involvement of 1,004 volunteers during the Brigada maintenance week underscored the community's dedication and support. Detailed reporting to DepEd ensured transparency and accountability, showcasing the tangible outcomes achieved through the initiative. Certainly, community involvement and support were pivotal in sustaining the initiative's success. Volunteers played a crucial role in executing tasks and maintaining the improvements, fostering a sense of ownership and pride among stakeholders. Partnerships with local businesses and organizations not only provided essential resources but also strengthened community ties and ensured ongoing

support for future endeavors.

Impact of National Brigada Eskwela Hall of Fame Award on the Community's Perception of Kalamtukan Elementary School

The data reveal that the stakeholders overwhelmingly view the National Brigada Eskwela Hall of Fame Award as having a highly positive impact on the community's perception of Kalamtukan Elementary School, with an impressive average mean of 4.99. This high rating indicates strong support and appreciation from all groups involved. Specifically, teachers, students, parents, and local officials awarded the highest possible rating of 5.00, reflecting their complete endorsement of the award's benefits. The slightly lower rating of 4.93 from community members still signifies a strong endorsement, suggesting that while the award is well-regarded, there might be minor areas for further engagement or improvement.

The recognition affirmed the school's dedication to excellence and community engagement, setting a benchmark for educational institutions nationwide. The award underlined Kalamtukan Elementary School's leadership in innovative educational practices and its commitment to continuous improvement, inspiring other schools and communities to emulate its success in enhancing educational environments through collaborative efforts like Brigada Eskwela.

Conclusions

The Brigada Eskwela initiative at Kalamtukan Elementary School has proven to be a highly successful school innovation. It demonstrates substantial participation and active engagement from all involved parties, including teachers, students, parents, community members, and local officials. The improvements to school facilities were unanimously rated as excellent, and the initiative significantly boosted student performance and academic engagement. Community involvement was notably high, with strong satisfaction regarding the support received from local businesses and organizations. The improvements are viewed as sustainable in the long term, and the overall perception of the initiative is overwhelmingly positive, indicating a well-received and impactful program.

Recommendations

To sustain and build on this success, it is recommended to continue fostering strong community relationships and stakeholder engagement. Implementing a monitoring and evaluation system will help assess the long-term impact of the improvements and identify areas needing further attention. Expanding participation opportunities to include more community members and organizations can diversify and strengthen support. Additionally, enhancing communication and feedback mechanisms will ensure transparency and continuous improvement. Documenting and sharing best practices can promote knowledge exchange with other schools while providing training and capacity-building programs for teachers, parents, and community members will enable more effective contributions to future school improvement efforts. These steps will help ensure

the sustained success and positive impact of Brigada Eskwela at Kalamtukan Elementary School.

Compliance with Ethical Standards

The study meticulously considered ethical aspects to ensure respectful and responsible research involving various stakeholders of Kalamtukan Elementary School, including teachers, students, parents, community members, and local officials. Informed consent was obtained from all participants, ensuring they were aware of the study's purpose and their involvement. Confidentiality was rigorously maintained by anonymizing responses to protect participants' identities. Participation was entirely voluntary, with individuals having the freedom to withdraw from the study at any stage without facing any negative consequences. The study also ensured fairness by accurately representing the perspectives of all stakeholders and avoiding any biases in reporting the findings. These ethical practices were crucial in upholding the integrity of the research and ensuring that the participants' rights and contributions were respected throughout the study.

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EXPLORING THE EFFECTS OF PERFORMANCE METRICS ON EMPLOYEES IN ACHIEVING OPERATIONAL EFFICIENCY OF ABC CALL CENTER

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ABSTRACT

ABC Call Center, like other BPO Companies across the nation, places significant emphasis on achieving performance metrics as a key measure of success. Using Performance Matrices, this study explored the challenges faced by the employees when striving to achieve operational efficiency. The study used an Explanatory Sequential Mixed Method Design to enhance the understanding of quantitative data by providing additional qualitative insights (Dovetail, 2023). The quantitative component of the study involved collecting secondary data reports from Employee Performance Metrics or Key Performance Indicators (KPI) to review and analyze the current performance of the Department Team, while the qualitative component involved conducting individual interviews, and focus group discussion with all employees in the department to understand their experiences, perceptions, and the contextual factors that influenced their performance. All quantitative and qualitative data were analyzed using descriptive statistics and thematic analysis. The result revealed and identified not only the specific constraints impeding the operational performance of ABC Call Center but also, those strategies and best practices of employees and management in the BPO company. The study concludes that addressing the challenges experienced by employees in Workforce management, Process Optimization, and Technological Infrastructure is vital for enhancing operational efficiency and elevating customer satisfaction levels. Subsequently, an action plan was developed and proposed to the Operations Management Team and partnered clients of ABC Call Center Company to drive the organization towards operational excellence.

Keywords: *Business Process Outsourcing (BPO), Service Level Agreement, Key Performance Indicator, Theory of Constraints, Post-Positivism, Operational Excellence*

INTRODUCTION

Business Process Outsourcing (BPO) refers to the process of contracting standard business functions to be handled by a party outside of the company (Sage Group, 2023). It is a business practice in which an organization contracts with an external service provider to perform an essential business function or task (Laughlin & Pratt, n.d.). Business Process Outsourcing (BPO) services are often categorized into voice-based and non-voice-based. Voice BPO includes services like customer support, technical support, and telemarketing, which involve direct interaction with customers over the phone. Non-voice-based BPO, on the other hand, covers tasks like data entry, data processing, content moderation, and other back-office functions that do not require interaction with the customers (Call Centre Helper, 2023).

This study focused on ABC Call Center, a BPO Company that manages both Non-Voice and Voice BPO services specifically in the department that handles Voice BPO services in its Dental Health Program which specializes in customer support involving direct interaction with customers over the phone.

In this study, XYZ Health Maintenance Organization (XYZ HMO) contracted ABC Call Center, a Business Process Outsourcing (BPO), to deliver customer satisfaction in its Dental Health Program by providing customer support and immediate solutions to the customers' concerns and inquiries regarding product benefits, claims, reimbursement processes, and even to its escalating customer complaints. To monitor the operational efficiency of ABC Call Center, a Service Level Agreement (SLA) was issued by XYZ HMO, which contained among others Key Performance Indicators (KPIs) for employees, namely Attendance Tracking Report (ATR); Average Handling Time (AHT); Adherence to Schedule (ADH); and Quality Assurance /Quality Score Metrics (QA).

Currently, the Business Process Outsourcing (BPO) industry places great emphasis on achieving performance metrics as a measure of success. Brown (2023), however, mentioned that while KPIs can be an effective tool, they can also be overused or misused, leading to negative consequences for both productivity and motivation. When employees are solely focused on hitting specific metrics, they may be less likely to take risks or explore new ideas or focus on what they excel at. This can lead to stagnation and demotivation among employees and ultimately lead to decreased productivity and higher turnover rates.

The employees of ABC Call Center face immense pressure to achieve what the performance metrics require, leading to stress and burnout, because managing a high volume of calls while maintaining service quality was a challenge for every employee of the company. Considering the situation, this study was undertaken to explore and mitigate the challenges of the employees of ABC Call Center with reference to the use of the Performance Matrices of the company.

Research Questions

Using Performance Matrices, this study explored the challenges faced or encountered by the employees when striving to achieve operational efficiency. By addressing these challenges, the ABC Call Center had identified the potential opportunities that could be leveraged to enhance operational efficiency. In line with this objective, this study answered the following research questions to gain a deeper insight into the operations and identify the areas of improvement or optimization to develop an action plan.

1. What is the current performance of ABC Call Center on its Dental Health Program in terms of adherence to Service Level Agreements, such as:
    - 1.1 Attendance Tracking Reports (ATR),
    - 1.2 Average Handling Time (AHT),
    - 1.3 Adherence to Schedule (ADH),
    - 1.4 Quality Assurance/ Quality Control Metrics (Error Rates);

2. What are the challenges and opportunities relative to the operational efficiency of ABC Call Center on its Dental Health Program, in terms of:
    - 2.1 Workforce Management,
    - 2.2 Process Optimization,
    - 2.3 Technology Infrastructure?

3. What Action Plan can be developed to improve the operational efficiency of ABC Call Center on its Dental Health Program?

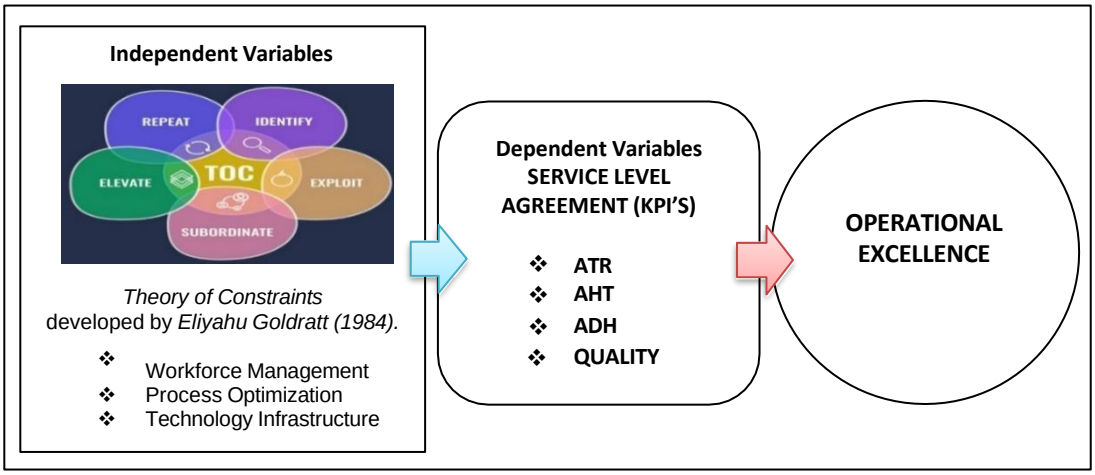
Research Framework

The Theory of Constraints (TOC) is a management philosophy that aims to identify and overcome bottlenecks in a system to achieve optimal operational performance (Gunay, Kalender, & Vayvay, 2014). This theory identifies the most important limiting factor (i.e., constraint) that prevents any system or process from meeting its goal and then systematically improving that constraint until it is no longer the limiting factor (Tabish and Syed, 2015).The ABC Call Center has set standard operational performance goals (KPIs) in a team *(dependent variables)*, and employees play a crucial role in achieving these goals. The Theory of Constraints may help to address the challenges faced by employees in achieving optimal operational performance. Through effectively managing the workforce, optimizing processes, and leveraging technology infrastructure *(independent variables)*, the organization can enhance operational efficiency and ultimately achieve its operational excellence. This theory uses a five-step process to improve throughput and achieve continuous flow.

1. Identify the constraint. This process determines the factor that limits the system's overall performance, such as employee skill gaps, inefficient processes, or system tools apps (technology infrastructure).
2. Exploit the constraint. Maximize the utilization of the constraint by addressing any issues that may prevent its effective utilization.

3. Subordinate all other processes. Align other processes and activities with the constraint to ensure they do not hinder its efficiency or effectiveness in achieving optimal operational performance.
4. Elevate the constraint. Invest in improving the constraint to increase its capacity and eliminate any barriers that prevent it from functioning optimally.
5. Repeat the process. Continuously reassess the system to identify new constraints and repeat the steps to ensure continuous improvement. and enhance operational performance.

Figure 1: *Conceptual Framework for Achieving Operational Excellence of ABC Call Center in its Dental Health Department*



Philosophical Underpinning / Lenses

Post-positivism rejects the positivist approach that a researcher can be an independent observer of the social world. Post- positivists argue that the ideas, and even the particular identity, of a researcher influences what they observe and therefore impacts upon what they conclude. Post-positivism pursues objective answers by attempting to recognize, and work with, such biases with the theories and knowledge that the theorists develop (E-International Relations, 2021). In their 2017 study, Panhwar and Shah highlighted the significance of the post-positivism paradigm, which emphasizes objective investigation of phenomena using a combination of quantitative and qualitative data sources. This approach, influenced by scholars such as Guba and Lincoln (1994) and Philip and Burbules (2000), underscores the need to prioritize quantitative data while also supporting findings with qualitative evidence, as advocated by Widemuth (1993) as cited by Panhwar and Shah (2017). Hence, the researcher employed a post-positivist paradigm to explore specific phenomena in the Dental Health Department from various employee perspectives. This approach aimed to identify the limitations of the positivist methodology traditionally used by the company through considering both objective measures and subjective experiences of employees. By addressing challenges in workforce

management, optimizing processes, and leveraging technology infrastructures, organizations can enhance their operational efficiency and competitiveness in the market.

METHODOLOGY

Research Design

This study used Explanatory Sequential Mixed Method Design. According to Dovetail (2023), in an explanatory sequential design in the mixed method of research, the quantitative data are collected first, followed by qualitative data to further explain the quantitative data. Furthermore, this specific Mixed Method Design integrates quantitative and qualitative methodologies in a single study, and involves the collection, analysis, and interpretation of both numerical and non-numerical data for a more in-depth exploration of the research topic. This research design was chosen because it allowed the researcher to explore complex phenomena from multiple perspectives and generate comprehensive insights that can enrich theory, practice, and decision-making (Dovetail, 2023).

Research Locale

The locale of the study was conducted at ABC Call Center, a prominent BPO company in the Philippines situated in Northgate Cyberzone, Filinvest Corporate Alabang, Muntinlupa City, Metro Manila.

Respondents of the Study

The participants of the study were all employees of the BPO Company, specifically under the Healthcare Program, which employs a total of 19 individuals. Among them were 17 Customer Service Associates (CSAs) working on a seasonal account, while the remaining two were part of the Management Team in the Department.

Research Sampling

The study used Total Population Sampling Technique. Since total population sampling involves all members in the population of interest, it is possible to get deep insights into the phenomenon interested in. With such wide coverage of the population of interest, there is also a reduced risk of missing potential insights from members who are not included (Lund Research, 2012).

Data Collection Instrument, and Techniques

The quantitative component of the study involved collecting secondary data reports from Employee Performance Metrics such as Attendance Tracking Reports (ATR), Average Handling Time (AHT), Adherence to Schedule (ADH), and Quality Assurance (QA/Error Rates) to review and analyze the current performance of the Department Team, while the qualitative component involved conducting virtual interview, face-to-face interview, and focused group discussion with employees to understand their experiences, perceptions, and the contextual factors that influenced their performance.

The open-ended guide questions were used, aimed to capture a range of opinions, experiences, and perspectives of the participants.

Method of Data Analysis

The secondary data reports were retrieved to review and analyze the current operational performance of the company's department team using the last three Months' Key Performance Metrics (ATR, AHT, ADH, QA/QCM). This quantitative data was analyzed using descriptive statistics. To measure the central tendency, the researcher got the Mean of each employee's performance, and the parameter was based on the targeted subject-level agreement set by the Clients. The frequency of distributions was applied to count the number of agents who failed to pass each of the required KPIs for further analysis of the challenges and opportunities for improvements, and system equivalent ratings scale was utilized as a framework to present frequency distributions for descriptive analysis.

On the other hand, the primary data were gathered through conducting virtual, face-to-face interview, and focus group discussion with all the currently employed employees of the department considering the three factors that would affect their performance (Workforce Management, Process Optimization, and Technology Infrastructure). This qualitative data was analyzed using thematic analysis where the researcher wrote a cohesive narrative that incorporated the analysis of themes and provided evidence from the data to validate the identified themes. By integrating and comparing quantitative and qualitative data, the study identified patterns, relationships, and underlying factors contributing to the challenges faced by employees, ultimately providing insights to inform strategies and interventions for enhancing operational efficiency and employee performance at ABC Call Center.

RESULTS AND DISCUSSION

Objective 1. Current Performance of ABC Call Center.

Table 1: Frequency of Distribution and Means of Employees Performance within the Past Three Months

Attendance Tracking Report (ATR) ***Target passing score 5 % and below***		
Score Ratings	**Number of Employees**	**Percentage**
Outstanding	3	18%
Excellent	4	23%
Very Good	3	18%
Failed	7	41%
Total	**17**	**100%**

Average Handling Time (AHT) Target score 550 and below		
Score Ratings	**Number of Employees**	**Percentage**
Outstanding	0	0%
Excellent	0	0%
Very Good	9	53%
Good	6	35%
Failed	2	12%
Total	**17**	**100%**

Adherence to Schedule Target score 95% and above		
Score Ratings	**Number of Employees**	**Percentage**
Outstanding	0	0%
Excellent	12	71%
Very Good	5	29%
Failed	0	0%
Total	**17**	**100.00%**

Quality Assurance Score Metrics (QA/QCM) Target score 95% and above		
Score Ratings	**Number of Employees**	**Percentage**
Outstanding	0	0%
Excellent	5	29%
Very Good	7	41%
Good	1	6%
Failed	4	24%
Total	**17**	**100%**

The reasons behind their tardiness and absences that affected achieving the ATR metrics were attributed to a variety of factors, including health concerns, external environmental factors and unforeseen circumstances such as system latency, slow or no internet connection problem , transport strike, and personal commitments outside of work that were mentioned during the interview.

On the other hand, the prolonged call interactions and delays in resolving concerns or inquiries with callers affected the achievement of AHT metrics. This was attributed to a myriad of factors related to process optimization. These include variations in agent practices, lack of available process workflows in Knowledge Exchange resources, challenges in interpreting claims decisions and reason/denial codes, struggles with sporadic processes, lapses in knowledge retention from past training, and navigating complex documentation leading to repetitive questioning during calls. Moreover, challenges stemming from technology infrastructure added to the threats in achieving the AHT metrics were attributed to various technological issues, including system lags/latency issues, difficulties in accessing necessary data due to the use of multiple tools and complex navigation processes, outdated system tool interfaces, equipment in poor condition, and unstable internet connectivity. In addition to , the lack of access to specific tools and inadequate training in utilizing technology tools exacerbated the situation.

However, the most challenging aspects contributing to prolonged call interactions were handling uncooperative, irate, and upset callers while following established processes and dealing with unclear concerns, doubts, and language barriers. The convergence of various factors highlighted the necessity for a holistic approach to effectively address the issues impacting call interactions and resolutions, as discussed during the interview.

Furthermore, the failures in meeting QA/QCM Metrics can be attributed to a variety of factors. These included not adhering to the required 2–3-minute hold times or exceeded the 40 dead air (silent), and incomplete documentation due to challenges in accessing data, using multiple tools, and navigating complex processes during calls while handling repetitive questioning from callers. Additionally, providing inaccurate information to callers, and misquotation of benefits and claims due to lack of knowledge for the product plan and processes, outdated handoff points, and unclear workflow processes

further compounded the challenges. Furthermore, the lack of active listening, failure to grasp information, and the absence of probing questions were also significant factors in the failures. These issues stemmed from unclear concerns, doubts, language differences during interactions with the callers , as well as frustration and demotivation among employees due to unsatisfied management treatment and decisions, as they mentioned during the interview.

In summary, the research findings revealed that most employees in the Dental Health Department Team had been successful in meeting a range of Key Performance Metrics (KPMs). Even though the overall employee performance was impressive in maintaining their Key Performance Metrics (KPMs), some employees need more attention to enhance their performance, particularly in attendance, average handling time, and quality. It is essential to provide support to the 41% of employees who had not met their KPI metrics, especially in their Attendance (ATR metrics), as well as the 12 % who failed in Average Handling Time (AHT), and 24% who failed the Quality Assurance (QA) performance. This support is crucial to enhance the overall performance, to ensure consistent attendance necessary to provide reliable service, to meet customer expectations, to reduce costs linked to overtime payments due to understaffing and employee burnout. Additionally, it will help to mitigate the risk of non-compliance and the associated penalties, considering the strict quality compliance and regulatory requirements set by the client.

Objective 2. Challenges and opportunities relative to the operational efficiency of ABC Call Center on its Dental Health Program.

Table 2: Summary of Codes and Themes on Workforce Management, Process Optimizations, and Technology Infrastructures

CODES	THEMES
A. Workforce Management	
• Workload Imbalance • Frequent Process Innovation • Healthcare Systems Differences Between Countries	A1. Performance and Productivity Challenges
• Post-call Survey and Quality Scores • Hybrid Work Arrangements	A2. Quality and Satisfaction Metrics Difficulties
B. Process Optimizations	
• Inconsistent processes and Outdated Resources • Poor Coordination Between Departments	B1. Process Standardization and Alignment Deficiencies
• Lack of Clarity and Familiarity in Processes • Insufficient Understanding in Technical Information • Lack of Training and Support	B2. Process Communication Barriers
C. Technology Infrastructures	
• System Latency Applications • Outdated Interfaces and Integration Issues • Unstable Connectivity and Inadequate Technical Infrastructures • Tools Accessibility Limitations	C1. Technology and System Inadequacies
D. Other Challenges that Affect to Employee's Performance and Productivity	

• Communication Barriers due to Language Differences • Uncooperative, Irate and Upset Callers	D1. Managing Difficult Callers with Satisfactions.
• Personal Commitment and Unforeseen Events • Frustration and Demotivation to Management Decision	D2. Personal and Management Concerns

Management is confronted with various challenges in assessing and overseeing the performance of Customer Service Advocates (CSAs). These challenges ranged from workload imbalances and hybrid work structures to system glitches, personal situations, external influences, and advances in processes. The disparities in healthcare systems across different countries further complicated the situation. Achieving a balance in workload is essential for effective goal attainment, while the pros and cons of hybrid work setups have a significant impact on performance evaluation. Client innovations may bring disruption to employee effectiveness, necessitating clear communication and continuous training to mitigate such disturbances. Discrepancies in healthcare systems could translate into variations in employee performance levels. Meeting client expectations regarding quality and satisfaction proved to be a demanding task, with key performance indicators such as Post-Call Survey Scores playing a critical role in performance assessment.

On the other hand, in process optimization arena, the research investigation identified several key challenges impeding the smooth operation of call interactions in the claims processing unit. These obstacles included discrepancies in implementation of standardized processes and procedures, frequent policy changes, communication barriers, and a lack of familiarity with workflow processes and procedures. Inconsistencies in call handling techniques among Customer Service Advocates, coupled with a lack of coordination with Claims Adjusters, led to operational inefficiencies, delays in claim resolutions, and even potential misconduct. The primary root cause of these inefficiencies was in the lack of alignment and coordination between two departments (operations and claims), resulting in communication errors and the dissemination of inaccurate information to customers. Moreover, outdated, and unclear information in Knowledge Exchange resources also contributed to misquoting and confusion among Customer Service Advocates. Challenges like unavailable workflow processes and uncertainties in interpreting new rules further hindered effective communication with customers. Furthermore, Customer Service Advocates faced difficulties in understanding and communicating claims decisions and denial codes due to limited information and unclear communication from Claims Adjusters. Inadequate training and support only added to the stress and confusion experienced by Customer Service Advocates. The importance of effective communication and knowledge management during call interactions highlighted the critical role performance plays in managing workflow processes effectively.

When it comes to Technology Infrastructures, Customer Service Advocates (CSAs) faced obstacles in efficiently accessing critical information, resulting in delays in meeting customer needs and processing claims. The complexity of navigating through multiple tools impeded their performance, leading to lengthier Average Handling Time (AHT) and a decline in customer satisfaction. Customer Service Advocates (CSAs) voiced their frustrations over the redundant nature of system tools and the laborious process of gathering information from various sources. To improve productivity and effectiveness in

customer service operations, it is vital to implement a centralized data access system, simplify tools, provide training, and conduct regular assessments. Moreover, CSAs encountered challenges with outdated and non-user-friendly interfaces, faulty equipment, and unreliable internet connections, impacting their overall performance and job satisfaction. To enhance efficiency and elevate the customer service experience, swift resolution of equipment issues, ensuring equal access to necessary tools, and implementing comprehensive training programs were deemed essential steps.

Lastly, Customer Service Advocates (CSAs) faced various challenges in managing Average Handle Time (AHT) due to difficulties in understanding customer concerns, leading to prolonged calls and escalated requests for supervisor intervention. Customers/Callers often had alternates' expectations even after receiving assistance, causing further difficulties for Customer Service Advocates (CSAs), particularly in dealing with topics like Pre-authorization. Communication barriers arose when engaging with Out-of-Network Providers, resulting in persistent uncertainties despite comprehensive explanations. Handling calls from irate or dissatisfied customers, especially when faced with vague queries or apathy, necessitated a combination of patience and empathy. Customer Service Advocates (CSAs) encountered personal obstacles like health issues, technical glitches, and personal commitments, had negative impact in their performance, particularly in Attendance. Moreover, inadequate guidance, support, and resources from management contributed to their frustration and demotivation. Consequently, there had been calls to enhance the employee experience and shift the focus towards process improvement rather than on managerial oversight, advocating for a more supportive and transparent work environment.

Table 3: Summary of Codes and Themes on Best Practices and Strategies of Customer Service Advocates and Management.

CODES	THEMES
E. Customer Services Strategies and Best Practices	
• Process Mastery and Resource Efficiency - Process and Product Oriented - Being Efficient in Utilizing Resources and Navigation - Being Prepared, and Organized	E1. Flexibility, Adaptability and Resilience
• Mindset Alignment and Personal Growth - Aligning Mindset with Company Core and Objectives - Having an Adopting Growth Mindset	
• Customer-Centric Approach and Problem-Solving - Connecting with Customers/Callers through Empathy - Stay Calm and Patient - Being an Active Listener, and Efficient Multitasker - Being Resourceful in Finding Solution to the Problem.	
F. Management Strategies and Best Practices	
• Regular Monitoring of KPI Metrics • Mentoring New Hired Employees by Seasoned CSA (Advocates) • Training, Coaching and Skills Development Programs Initiatives • Monetary Incentives Recognition Program Initiatives	F1. Performance Optimization
• Continuous Improvement and Coaching • Ideation Campaign • Employee Feedback Loop Mechanism	F2. Employee Engagement
• Continuous Feedback Loop and Performance Tracking • Cross-departmental Collaboration • Regular Governance Meeting Shared Accountability	F3. Management Oversight

Customer Service Advocates focused on enhancing their understanding of products and processes by continuous learning and regular review of their products. They prioritized following the established call handling protocols to ensure efficiency and maintain balanced customer interactions. It was important for them to be well-informed about specific accounts and to seek guidance or conduct research when faced with challenging inquiries. CSAs also prioritized quality over average handling time and utilizing tools to benefit quoting and claims processing; they strategized to handle calls efficiently. Familiarity with the processes, call flow, and system tools was crucial for effective support, just as engaging with metrics was essential for assessing performance. Understanding the organization's operations allowed CSAs to comprehend how their efforts impact the team and quality assurance. Adhering to job expectations and following the standard operating procedures were key in customer service, just as following the best practices, like enhancing task efficiency through call flow. To the CSAs, building rapport with customers through empathy and genuine communication was vital, as well as addressing customer concerns with understanding. Embracing a growth mindset, practicing active listening, and offering prompt issue resolution were fundamental to them in delivering exceptional service. Ultimately, having a profound understanding of the core elements and acquiring solid product knowledge was imperative for success in customer service. Furthermore, Customer Service Advocates are driven by key performance indicators (KPIs) and adherence to organizational policies and guidelines to excel in their roles. Personal values, such as family commitments and social standards, also motivate to Customer Service Advocates to demonstrate dedication and hard work. The productivity theory by Abraham Maslow, which outlines a hierarchy of needs, further explains the motivations behind the commitment of Customer Service Advocates to delivering exceptional customer service. Flexibility was a crucial element in addressing challenges and fostering resilience.

On the other hand, the management team at ABC Call Center Company had established best practices to tackle these obstacles, including the implementation of strategies like ideation (sharing insights), providing coaching, monitoring performance metrics, and offering cross-training opportunities. Root cause analyses were conducted to enhance the overall customer experience, with initiatives like customer surveys, mentorship programs, and training sessions being put into place. Prioritizing continuous improvement and employee development, the company launched programs such as READY NOW, GROW Coaching Sessions, and VIVA to identify and nurture high-performing individuals, strengthen coaching and presentation skills, and acknowledge exceptional achievements. Furthermore, an employee engagement program, featuring feedback mechanisms, an open-door policy, group chat platforms, coaching sessions, and project incentives, had been introduced. Monitoring team projects through feedback and surveys had been proven to enhance communication, problem-solving capabilities, and performance outcomes. Notably, an excessive focus on metrics has resulted in heightened pressure and competitive dynamics among team members.

Conclusions

Managing the workforce performance of Customer Service Advocates presents a range of challenges, including balancing workload, accommodating hybrid work setups, adapting to frequent process innovations, and addressing healthcare system discrepancies. To effectively address these challenges, an Action Plan to improve the operational efficiency in a BPO Company is recommended for implementation.

- ABC Call Center may incorporate the established best practices, such as sharing strategies, providing coaching, and conducting root cause analyses to enhance employee performance and increase customer satisfaction.
- The management must continue the current established employee engagement initiatives, such as mentorship sessions, and enhancing skill development programs like READY NOW, GROW Reality, and VIVA to promote innovation and collaboration in the workforce. Striking a balance between performance metrics and employee well-being is essential to mitigate burnout, unethical behavior, and data manipulation.
- The management should practice a transparent and open communication, show flexibility, and provide support to CSAs through implementation of such measures as remote work options, and adoption of supportive policies can help cultivate a positive work environment.
- Additionally, it is essential to establish streamlined protocols, improve communication channels, and offer comprehensive training to Customer Service Advocates in Claims Processing Units. Aligning call handling techniques, promoting teamwork and communication, and refining workflow processes are key aspects to ensure operational efficiency and customer satisfaction. Providing clarity on information resources and fostering continuous learning and support can enhance communication effectiveness and performance metrics. By embracing these strategies, organizations can streamline claims processing, build trust, ensure accuracy, and elevate satisfaction levels among both employees and customers.
- Addressing the challenges experienced by Customer Service Advocates in Technology Infrastructure is vital for enhancing operational efficiency and elevating customer satisfaction levels. To effectively overcome these obstacles, it is crucial to prioritize user-friendly interfaces, ensure the provision of essential equipment, maintain stable internet connections, and foster collaboration with IT professionals. By offering equal accessibility to tools, implementing comprehensive training programs, and providing continuous IT support, CSAs can enhance their problem-solving capabilities and bolster operational efficiency.
- When managing difficult customers and challenging situation, the CSA should have patience, effective communication skills, empathy, and mastery of product knowledge and processes to deliver exceptional service. Prioritizing continuous learning, understanding call handling processes, and possessing strong product knowledge are key elements that will enable CSAs to efficiently address customer queries.

- CSAs can achieve their fullest potential by embodying resilience, adaptability, and determination. Embracing challenges as opportunities for personal and professional growth will empower them to elevate their performance levels.
- To excel in customer service, the CSAs should have the following key elements: ability to multitask, skills for active listening and for asking probing questions, and maintaining unwavering focus. Effective task prioritization, genuine understanding of customer needs, and building strong connections with callers are essential for delivering exceptional service.
- By providing prompt and concise resolutions with a customer-centric approach, the overall customer service experience can be enhanced, ultimately leading to not only a reduction in Average Handling Time (AHT) but also operational excellence.

Recommendations

To achieve the operational excellence of BPO Company, the developed Action Plans were strongly recommended to Operations Management Team, and partnered clients of ABC Call Center Company, in order to enhance the employees' operational performance and job satisfaction.

- Balance the forecasted workload with the agent's capacity, address under-forecasting, and ensure adequate skill development. Use the capacity planning metrics as it plays a crucial role in resource management by identifying bottlenecks, forecasting future needs, and measuring performance. Having effective communication channels and training for remote work tools are essential for managing hybrid work arrangements successfully.
- To adapt to process changes, adopt a change management framework, have regular process reviews, and pay attention to employee feedback.
- Do extensive research on the healthcare systems in different countries and have workshop training to learn well their differences to empower the employees in the healthcare sector.
- Quality Analysts and Customer Service Advocates should attend training programs such as GROW Coaching Sessions and VIVA initiatives to enhance their performance. Career mobility for Customer Service Advocates can be improved through programs like the READY NOW Training Program.
- Management guidance is essential for optimizing call interaction processes and for ensuring coordination with other departments. Implementation of Lean Six Sigma Methodologies to pinpoint bottlenecks, inefficiency and redundancy, conducting comprehensive training for unfamiliar processes, and creating concise step by step guidelines for process and procedures are key steps towards operational excellence.
- Strategic investments in digital infrastructure, modernizing technology tools, and providing comprehensive training on emerging technologies were recommended to stay competitive. Regular maintenance checks, backup equipment, and comprehensive training on technology tools are crucial for employee performance and efficiency.

Compliance with Ethical Standards

The researcher obtained consent from the participants to ensure that they were fully aware of the purpose, procedures, potential risks, and benefits of the study. All participants were informed that their participation was voluntary, and that they had a right to withdraw from the study or not to answer the specific questions during the interview at any time if they wish to do so or if they felt uncomfortable with the questions.

The researcher took the responsibility to ensure the welfare of the participants throughout the study by monitoring and addressing any distress or discomfort experienced by the participants during the interview. Additionally, the participants were informed that all identifiable information collected during the study would be kept with utmost confidentiality and their identities would be anonymous. Furthermore, the researcher minimized bias in data collection, analysis, and interpretation by being aware of it, open-minded, and strongly committed to unbiased reporting of research findings, and plagiarism was strictly avoided.

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FEMALE LEADERS' CHARACTERISTICS AND INSTRUCTIONAL STYLES: A SYSTEMATIC REVIEW

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ABSTRACT

A leader's gender should not hinder effective leadership. However, studies indicate that women continue to be underrepresented in the field of leadership in education despite the presence of more women in the classroom. Several stereotypes about women being ineffective or not suitable for the role continue to hinder women's ascension to leadership. This systematic literature review analyzed twenty (20) research articles to identify female instructional leaders' characteristics and leadership styles. The review also determined the instructional practices of female leaders. Results revealed that women leaders are collaborative and empathetic, which helped them build positive relationships with teachers, stakeholders, and the community. Moreover, women leaders are more active instructional leaders because of the skills they acquire in long years of teaching before getting promoted. As revealed, three leadership styles are associated with women: transformational leadership, delegation leadership, and participative/democratic leadership, with the latter being the most notable.

Keywords: *Female leaders, attributes, instructional style, leadership styles, systematic review*

INTRODUCTION

Instructional Leadership is a core aspect of school leadership that prioritizes teaching and learning in school decision-making. It requires principals to focus on enhancing student learning (Shaked et al., 2018).

According to Spillane and Louis (2002), "Without an understanding of the knowledge necessary for teachers to teach well – content knowledge, general pedagogical knowledge, content-specific pedagogical knowledge, curricular knowledge, and knowledge of learners – school leaders will be unable to perform essential school improvement functions such as monitoring instruction and supporting teacher development. The "leadership content knowledge" necessary for instructional leadership was described as "that knowledge of subjects and how students teach them that is used by administrators when they function as instructional leaders" by Stein & Nelson (2003). Studies have shown a connection between the principals' instructional leadership and students' achievements (Glickman et al., 2014). Instructional leadership's effects on student outcomes were three to four times higher than that of transformational leadership, which sees leaders as inspiring, empowering, and motivational to followers (Robinson et al., 2008). Research has shown a small but statistically significant gender effect when comparing men and women in the context of instructional leadership, with female principals regularly receiving higher ratings on instructional leadership when compared with their male counterparts. (Hallinger, Li, and Wang 2016). Moreover, according to Carli & Eagly (2016), women often manifest transformational leadership more often than men.

The education sector is considered a 'woman's job' since classroom teaching manifests the same tasks expected of women: nurturing and caring for children, while men possess qualities that are more applicable to organizational leadership (Carli & Eagly, 2011; Fuller, 2017). Several countries have identified the underrepresentation of women in the school leadership roles (Bush, 2017; Shakeshaft, 1987), and one of the most significant barriers to women's rise to leadership is the difficulty of balancing a demanding school leadership role with family responsibilities that are continuously assumed by women (Arroyo, 2019; Bush, 2017; Fuller, 2017; Fuller, 2009). This is likely why women typically fill these roles with fewer family responsibilities, such as those who live alone or have grown children (Coleman, 2001, 2012). A female leaders need to establish her name and overcome the issues and challenges that come with their leadership. Stereotypes of male and female educational leaders show that males are better leaders because they are rational, decisive, and strong, while female leaders are emotional and too soft, negatively affecting their leadership style.

Research Questions

1. What are the Personal Characteristics and Professional Attributes of Female Educational Leaders?
2. What are the common leadership styles of women based on their characteristics?
3. How do female educational leaders practice instructional leadership?

METHODOLOGY

The systematic literature review is a method where all available research regarding a formulated question, topic, or area of interest is identified, selected, and evaluated to provide a clear understanding (Dewey et al., 2016). It is an efficient way to compile

different research and explore differences among the studies about a specific topic. A systematic review adheres to standardized methodologies and guidelines in systematic searching, filtering, reviewing, critiquing, interpreting, synthesizing, and reporting findings from multiple publications on a topic or domain of interest (Pati & Lorusso, 2017). Because a systematic review does not entail data acquisition for a new research topic and instead uses prior research, it is categorized as secondary research.

Moreover, a systematic literature review helps identify patterns and trends in research and gaps and contradictions in the literature. The literature review offers accurate and current summaries of the best available evidence, which can assist in informing practice, policy, and decision-making. Thus, this method is used in this study.

The first step to achieving the goals of this study is to find research articles and studies on the perceived characteristics and leadership styles of female instructional leaders in multiple databases such as Google Scholar, ERIC, and Research Gate, to name a few. The eligibility requirements set prior to the identification, location, and retrieval of the research required to address the issue of evidence-based practice served as the foundation for the search procedure.

Using the available databases with the following keywords: characteristics of female school principals, women leadership in education, women leadership styles, and attributes of female educational leaders; from the initial thirty (30) pieces of literature counted, twenty (20) papers matched the following initial inclusion and exclusion criteria. The inclusion criteria should cover at least one topic from characteristics of women educational leaders, women's leadership styles, or women's practice of instructional leadership. Additionally, the published articles should be peer reviewed with full papers available in databases. On the other hand, the excluded articles are published articles that need clear information on the characteristics of women educational leaders, women's leadership styles, and women's practice of instructional leadership. Articles with no full paper available in the database are also excluded. The timeframe for inclusion is from 2015 to 2024.

Table I. Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Presence of at least one of the characteristics of women educational leaders, women's leadership styles, and women's practice of instructional leadership.	Absence of characteristics of women educational leaders, women’s leadership styles, women’s practice of instructional leadership.
Primary research published in peer-reviewed journals	Book reviews, editorials, and literary critiques
Full paper must be available in the database.	Only contain the title and abstract.
Published articles from 2015 to 2024.	Research articles or papers that have yet to be published from 2015 to 2024.

RESULTS

Table 2 below shows the research articles included in the systematic review along with the respective authors and publication date.

Table 2. Research Articles included in the systematic review of literature

Research No.	Author/s	Research Title	Year of Publication
1	Vogel, L. R., Alhudithi A., & Alsliman, A.	A Comparison of Male and Female Saudi School Principals' Perspectives of Instructional Leadership.	2021
2	Shaked, H., Gross, Z., & Glanz, J.	Between Venus and Mars: Sources of Gender Differences in Instructional Leadership	2017
3	Weinstein, J., Sembler, M., Weinstein, M., Marfán, J., Valenzuela, P., & Muñoz, G.	A female advantage? Gender and educational leadership practices in urban primary schools in Chile	2021
4	Shaked, H., Gross, Z., & Glanz, J.	Gender differences in instructional leadership: how male and female principals perform their instructional leadership role	2018
5	Ismail, A., Ahmad, N. S., & Aman, R. C.	Gender of transformational school principals and teachers' innovative behavior	2021
6	Isnaini, R. L., Arifin, Z., Rahmi, S., & Syafii, A	Gender-based leadership in quality assurance development: A phenomenological study.	2023
7	Dugas, K., & Cerna, M. G. D.	Investigating Attributes of Women Leaders: Exploratory Approach	2022
8	Mert, P.	Leadership characteristics of female school principals according to female teachers	2021
9	Vogel, L. R., & Alhudithi, A.	Arab women as instructional leaders of schools: Saudi and Qatari female principals'	2021

		preparation for and definition of instructional leadership	
10	Abdon, L., Farin, E., & Farin, A.	Emotional Intelligence, Leadership Qualities and Decision-Making Practices Of Female Administrators In Selected Secondary Schools In Region III, Philippines	2017
11	Özcan, K., Balyer, A., & Fırat, F.	Factors Affecting Trust in Female And Male School Leaders	2022
12	Almedora, C., Niez, R., & Bentor, C. T.	Effectiveness of Principle-Centered Leadership And Characteristics of the School Heads in Leyte Division, Philippines	2016
13	Alberto, M. O.	Leadership of Woman President in the Philippine State Universities and Colleges	2023
14	Perez, E. L. A.	Philippine Women Educators' Leadership Styles and Managerial Skills	2021
15	Nicolas, W. J.	Leadership Style of Women Leaders in the Academe Industry: A Heuristic Analysis	2019
16	Entoma S. S.	Attributes of Women Leaders of State Colleges and Universities in Eastern Visayas, Philippines	2016
17	Mulawarman, W. G., & Komariyah, L	Women and Leadership Style in School Management: Study of Gender Perspective	2021
18	Howard Jr., D	Gender Leadership Styles in Higher Education: A Transformational Leadership Study	2023
19	Redmond, P., Gutke, H., Galligan, L., Howard, A., & Newman, T.	Becoming a female leader in higher education: investigations from a regional university. Gender and Education	2016

20	Read, B., & Kehm, B. M.	Women as leaders of higher education institutions: a British–German comparison	2016

1. Personal Characteristics and Professional Attributes of Female Instructional Leaders

Personal characteristics and professional attributes are the qualities or features that are distinct or common and make someone recognizable. Based on the literature, identified below are the personal characteristics and professional attributes of Female Instructional Leaders that influence their leadership style and instructional leadership practices.

Table 3. Personal Characteristics and Professional Attributes of Female Instructional Leaders

Personal Characteristics/ Professional Attributes	**Research Article**
Building Relationships	
1. Collaboration with teachers to improve practice	1, 2, 4, 11, 12, 13, 14,19
2. Building relationships with the community and other stakeholders	1, 2, 3, 4, 6, 7, 11, 12, 13, 14, 20
3. Empathetic and Compassionate	2, 8, 11, 12, 13, 16,17
4. Ability to motivate their subordinates	6, 7, 13, 16,19
5. Openness	6, 7, 10, 12, 13,19,20
Professional Expertise	
1. Lifelong Learning	1
2. Hands-on	1, 7, 11, 14,17
3. Instructional Experts	2, 6, 9, 10, 13, 14,17
4. Supportive	2, 3, 7, 8,17
5. Sets clear time targets	6, 7, 16
6. Detailed, thorough, and meticulous	6, 7, 8, 11, 14
7. Initiative, Innovative, Problem-Solving Skills	7, 8, 9, 10, 13,17
Values-Oriented	
1. Model fairness and Equity	1, 11, 13,19
2. Passionate and Dedicated	7, 11, 12,17
3. Integrity, Honesty and Trustworthy	7, 11, 12, 16
4. Perseverance	5,7,17,19
5. Egoistic	7
6. Acting Emotionally	8, 11

.

2. Instructional Leadership Practices

Table 4. Instructional Leadership Practices

Instructional Leadership Practices	Research Article
1. Supervision of Teachers	
A. Classroom Observation/ Monitoring	1, 2, 3, 9, 14,17
B. Feedback to Teachers	1, 4, 9, 10,17
C. Supporting the Use of Technology in the Classroom / Technical Support	1, 3,17
D. Personal Review of Student Achievement Data	1, 12
2. Modeling of Lifelong Learning	1, 16,17,18
3. Support of New Teaching Strategies through Professional Development	1, 4, 9, 15,17
4. Development of Curriculum such as enrichment courses	1, 9,17
5. Obtaining needed resources and communicating with stakeholders	1, 4
6. Setting Direction (Vision, Objectives, Targets, and Deadlines)	3, 6,17

3. Leadership Styles of Female Instructional Leaders

Table 5. Common Leadership Styles of Female Instructional Leaders

Leadership Styles	Research Article
1. Transformational Leadership	1, 3, 4, 13,18
2. Delegative Leadership	5,14, 15
3. Participatory/Democratic/Facilitating Leadership	3, 4, 5,6, 13, 14, 15, 16,17,19,20

DISCUSSION

1. Personal Characteristics and Professional Attributes of Female Instructional Leaders

Personal characteristics and professional attributes are the qualities or features that are distinct or common and make someone recognizable. Based on the literature, identified

below are the personal characteristics and professional attributes of Female Instructional Leaders that influence their leadership style and instructional leadership practices.

The table 3 above shows female instructional leaders' different personal characteristics and professional attributes. The characteristics are grouped into three categories: building relationships, professional expertise, and values-oriented.

Building Relationships. Influential leaders are good at building relationships. The Female Instructional Leaders' characteristics identified in this literature related to building relationships include collaborating with teachers to improve practice, building relationships with the community and other stakeholders, being empathetic and compassionate, motivating, being cooperative and being open and flexible, and having excellent communication skills. Communicating with the teachers and stakeholders is an essential skill that an instructional leader must possess because they serve as partners in achieving the goals of improving the teaching and learning process (Garegae, 2007). As the saying goes, "It takes a village to educate a child," the literature emphasizes the female instructional leaders' ability to build relationships with the community and other stakeholders, with 11 out of 20 pieces of literature mentioning this characteristic. Female leaders' empathetic and compassionate communication may have contributed to better relationships not only with the stakeholders but also with the teachers. Female leaders are open to feedback, listen to their colleagues' opinions, and provide learning opportunities, encouraging teachers to express themselves.

Professional Expertise. Female leaders are considered instructional experts, having more teaching experience, training attended, and organizational experience than their male counterparts. Women were typically appointed as principals after gaining more years of teaching experience and completing more academic and professional studies than men (Grogan & Shakeshaft, 2010; Roser et al., 2009). Since they have more experience in the teaching and learning process, female leaders are more hands-on in teacher supervision and are detailed, meticulous, innovative, and efficient problem solvers.

Values-oriented. Female leaders commonly exhibit integrity and honesty and are trustworthy. Based on the findings of Özcan et al., (2022), teachers trust their female leaders more because of their dedicated behaviors and their motherly, sensitive, and compassionate personalities. They are meticulous and devoted to their work. Interestingly, only two articles mentioned acting emotionally as a female leader's characteristic, which contradicts the stereotype that female leaders are emotional and, therefore, unsuitable to lead.

2. Instructional Leadership Practices

Table 5 shows the different ways in which female instructional leaders practice instructional leadership. The themes are adopted and modified from the six themes of

instructional leadership that emerged from the results in Female Saudi School Principals' Perspectives of Instructional Leadership in article 1.

Supervision of Teachers. Consistent with the studies of Grogan & Shakeshaft (2010) and Roser et.al (2009), when compared with their male counterparts, the Female Israeli Principals' teaching experience prior to leadership is more extended (Shaked et al., 2017). In the same study, 61% of Female Principals considered themselves to have instructional proficiency, which enabled them to actively engage in instructional leadership, particularly in classroom observation and supervision. Because female instructional leaders have gained more years of experience as teachers, they are more familiar with the teaching and learning process; thus, the supervision of teachers is their primary task in instructional leadership.

Modeling of Lifelong Learning. Female Instructional Leaders consider modeling lifelong or continuous learning as one of their roles as instructional leaders. It can be through obtaining a postgraduate degree, additional training, consulting with experts or colleagues, or conducting research. Female instructional leaders consider updating one's knowledge and skills vital to being a successful instructional leader.

Support of New Teaching Strategies through Professional Development. By closely monitoring the teachers and students, female educational leaders know first-hand the needs of the teachers to improve their performance, which leads to the crafting of effective professional development for teachers. The delivery of professional development training will ultimately benefit the students since improving the teachers' skills will also help improve the students' development.

Development of Curriculum such as enrichment courses. While schools are mandated to abide by the national curriculum provided by the government, Female Instructional Leaders in Saudi Arabia and Qatar revealed that they added enrichment classes such as foreign language electives, and computer and physical education subjects. Enrichment options include establishing extracurricular activities such as clubs, community festivals, and non-curriculum activities such as field trips and school carnivals. This helped enrich the students' academic performance and social and emotional aspects and increased their engagement with the school.

They are obtaining needed resources and communicating with stakeholders. Instructional Leaders must perform traditional management duties such as budgeting, facilities maintenance, and the aforementioned instructional leadership practices related to teaching and learning (DiPaola & Hoy, 2008; Rigby, 2014). Female Instructional Leaders include obtaining needed resources as part of problem solving and communication with stakeholders as part of decision making. Since schools cannot operate on their own, stakeholders such as parents, LGUs, and private institutions work together to address the needs of the school, may it be the recruitment of effective teachers or goods and services to repair and maintain the school facilities (Vogel et al., 2021).

Setting Direction (Vision, Objectives, Targets and Deadlines). Based on the study by Isnaini in 2023, Chilean participants perceive Female Leaders as leaders who work with

clear time targets, which ensure the effective and efficient completion of tasks. Being led by a woman means having set daily targets, adherence to deadlines, and consistent follow-up meetings to oversee the preparation and implementation of programs. This is consistent with the study of Weinstein in 2021, where the average number of teachers who agree or strongly agree that their female principals set a clear direction in vision and objectives is higher than that of their male counterparts.

3. Leadership Styles of Female Instructional Leaders

Transformational Leadership. Transformational Leadership is increasingly linked with female leadership, which is increasingly valued in educational leadership (Thorpe, 2018). Female leaders tend to be associated more with communal traits such as problem-solving, the development and empowerment of followers, and responsiveness to followers' individual needs, which characterizes transformational leadership (Eagly & Karau, 2002). Female instructional leaders associated their perception of instructional leadership with maintaining positive relationships with teachers demonstrating transformational leadership. Transformational leaders inspire, empower, and encourage their followers. One of the studies cited that, as a female leader, she demands transformative changes and wants to leave a legacy of being open to change, being a leader by example, and nurturing future leaders.

Delegative Leadership. A leader who practices delegative leadership delegates the responsibilities to their subordinates and expects them to take ownership of the tasks. One of the studies showed that women leaders consider this leadership style very high as rated by themselves. The characteristics of Delegative Leadership included in the study are delegating broad responsibilities to staff and expecting them to handle the details; expecting staff to find and correct their errors; providing clear objectives and boundaries to team members; giving relevant and appropriate advice to subordinates; and devolves team management to the team itself. Sometimes it is called laissez-faire leadership, but there is a subtle difference in autonomy. Laissez-faire leadership employs an entirely hands-off approach, while delegating leadership is still involved but allows certain autonomy.

Participative/Democratic/Facilitating Leadership. Consistent with Eagly and her colleagues' (1992) meta-analysis, which found that female principals tend to adopt more participatory, democratic leadership styles, one of the studies' findings revealed that female principals linked instructional leadership to maintaining positive relationships with the school staff, which involves partnership, empowering others, and other forms of cooperation. In the study in Indonesia, the extensive networking ability of female university leaders was beneficial in creating personal connections with stakeholders, which is one of the critical aspects of leadership. Moreover, interviewees in the study perceived women leaders as more cooperative and flexible. They offer more spaces for participation and collaboration (Eagly & Carli, 2007). This is supported by Northouse's research (2013) findings, which found that female leaders demonstrate participatory leadership more frequently than their male counterparts. This leadership style is most notable in the study of women educational leaders in SUCs in the NCR where 57% of the respondents stated that they are more inclined to participative and democratic leadership

styles. One practice of this leadership style is that when a woman administrator prepares the plan for their assessment or planning sessions, she presents it to her subordinates and lets them critique it. From there, they develop an output showing that women leaders strongly involve others in the decision-making process. This practice was also mentioned in the study in Eastern Visayas' SUCs. According to Perez (2021), democratic leadership is the most appropriate in democratic nations like the Philippines. The desire for democracy in any aspect of leadership is embedded in the nation's history.

Conclusions

The literature review determined the characteristics, leadership styles, and practice of instructional leadership of women leaders. Women instructional leaders' personal characteristics and professional attributes were grouped into three categories: Building Relationships, Professional Expertise, and Values-Oriented. Women Leaders are known for their skills in building positive relationships with stakeholders and the community and initiating collaboration with teachers. They are open to the ideas of their colleagues, making them comfortable voicing their opinions and suggestions. Aside from this, women leaders are also considered instructional experts. Women tend to be recruited for leadership positions in later years after serving as teachers for a long time, resulting in their detailed, meticulous and hands-on instructional leadership. Women instructional leaders focus on supervising teachers and conducting professional development to address the needs of the teachers. Further, the research articles included in this study inclined women leaders more toward a participative or democratic leadership style. Gender should not be considered as a roadblock to good leadership. Instead, an individual's capacity for performance and leadership should be assessed in light of their accomplishments, skills, and abilities.

Compliance with Ethical Standards

The authors declare no conflict of interest, no bias and the research focus only on analyzing studies.

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FROM CHALLENGES TO OPPORTUNITIES: THE NEW NORMAL'S EFFECT ON STUDENT PRODUCTIVITY AND ACADEMIC PERFORMANCE

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ABSTRACT

Everyone wanted to be educated as it is believed to be a key to the realization of ones' dreams. This will give life to many people and can make them get employment. However, when World Health Organization (WHO) declared 2019 Coronavirus Disease (COVID-19) as a global health epidemic in the country and Philippine government declared a state of public health emergency, steps were immediately made towards reducing its spread especially from traditional face to face classroom into virtual classroom. It was this movement that constituted the main research gap which this research intends to fill by being the first one to investigate the perceived impact of new normal on education and factors influencing academic performance. In total, one-hundred thirty-five selected students from Laguna participated in this study. The researchers used self-made questionnaire validated by experts and undergone with reliability testing. Specifically, the study aimed at identifying effects of new normal approach in educations, finding out their significant relationship with factors influencing academic performance and determining significant differences when grouped demographically. The study has identified all variables as effects of new normal approach in education having expressively related with factors affecting academic performance of respondents. Also, substantial findings showed that regardless of demographic profile; it cannot affect their perceptions towards what regards new normality. As a result, concentrating on perceived impacts could be an excellent stage or central objectives for developing delivery plan or series of activities that maximize positive outlooks on educational approach under status.

Keywords: *New Approach in education, Academic Performance factors, Student Productivity,*

INTRODUCTION

The World Health Organization (WHO) declared the 2019 Coronavirus Disease (COVID-19) as a global health pandemic, while President Rodrigo Roa Duterte declared a public health emergency in the Philippines on March 2020, some of which the government immediately implemented measures to contain and prevent further spread of the disease. Factories stopped operation, school was suspended and Filipinos were asked to remain at home. By that time, class suspension happened on March; has several weeks/months remaining before end of last term of academic year 2019-2020 among Philippine Higher Education Institutions or HEIs. Quality assurance guidelines given by The Commission on Higher Education (CHED) mandated higher education institutions (HEIs) to transition into flexible learning.

Given that the information communication technologies (ICTs) are in a constant state of flux, Dziuban et al. (2018) focused on the outcomes, impacts, and future directions of blended learning (BL) in higher education. The results indicated that BL either maintains access or enhances it for most student groups including minorities and non-minorities. Students consistently rated BL highly effective despite little influences from external and demographic factors. Yet regarding its future trajectory they admit to being unsure but their theoretical principles and empirical observations link it with what has been called 'the new normal'. Specifically within the context of Philippine education system in the new normal period. Winthrop (2020) delved into policy implications, strategies and challenges as regards online and distance education in relation to COVID 19 pandemic. Online learning has raised numerous concerns in higher education prompting institutions to adapt policies and programs in response to the crisis. This has led to widespread adoption of online learning platforms by several countries due to community lockdowns particularly affecting schools.

The study addressed various concerns about Philippine schools during this era of new normal calling for proactive handling of challenges. The main question however remains how quality education can be ensured as well as preparedness for future crises. Technological advancement has made online education an option with much flexibility that would attract different populations across globe. Although there are many similarities between online versus traditional forms of instruction these two methods differ significantly based on approach taken towards them.

While many consider flexible learning as an effective and safest pedagogy; and there may be situations when such courses are needed face-to-face. Nonetheless, there have been heated debates in depth researches about online teaching versus classroom or face-to-face mode but this study does not focus on it instead this study is looking at how new approaches in education affect productivity and academic performance with reference to college students.

This study aims at trying to fill some of these gaps that examines perceived impacts of new normal in education and factors affecting academic performance. Through this research completion, universities and colleges will know what things they can possibly do or attempt to guide students' learning process towards productivity When it comes to students, since this paper shows how they fare as students learning online what ways they use to catch up with the class. Assessing the variables concerning impact of distance learning and productivity level, and academic performance are important bases for planning instructional delivery. The result of this study is a contribution to the academe. According to the researchers' point of view, academic institution can also venture into the same study quest for an excellent education as we adapt to this new normal.

Research Objectives

The study aims to determine the perceived effects of the new normal to students and identify the factors that may influence to their academic performance and productivity level which may lead to suggest a new framework on the conduct of blended learning. It will specifically strive for:

1. To know the demographic profile of the respondents in terms of:
   1.1 Gender
   1.2 Year Level
   1.3 Students' Status
   1.4 Geographical Location during Distance Learning
   1.5 Internet Connection Provider
   1.6 Mobile Devices Used
2. To identify the perceived effects of the new normal approach in education to the respondents based on:
   2.1. Fostering Relationships
   2.2. Engagement
   2.3. Timeliness
   2.4. Communications
   2.5. Technology
   2.6. Organization
   2.7. Flexibility
3. To determine the factors that influence the productivity level and academic performance of the respondents in conducting new normal approach in education:
   3.1 Time
   3.2. Learning Environment
   3.3. Peer support
   3.4. Proper Guidance
   3.5. Family Resources
4. To assess if there are significant relationships between the perceived effects of new normal approach and factors that influence the productivity level and academic performance.
5. To distinguish if there are significant differences on respondents' perceived effects of new normal approach when grouped according to their demographic profiles.

METHODOLOGY

In completion of this study, the researchers conducted a descriptive-correlation research design to achieve the purpose of the study. From beginning of analysis, it is necessary to adopt descriptive correlation as a research design in order to handle the research questions at hand. Thus, the study was able to ascertain and delineate perceived effects of new normal approach in education while establishing factors affecting productivity level and academic performance among selected students. Additionally, it explained how variables such as demographic profiles moderate these relationships. Hence, this study used descriptive – correlation because it describes factors that affect productivity level and academic performance of students in addition to establishing relationship between perceived effects of new normal approach. Moreover, identifying significant differences on respondents' perceptions towards the effects of new normal approach according to their demography.

Correlational study uses default numbers for correlational studies in Laguna based on G-Power Statistical Tools. Questionnaire was used by researcher as a major instrument for data gathering purposes needed in this particular study. It was a self-made questionnaire developed by the researcher specifically designed for this survey which help them asses about "the effects of new normal approach", "productivity" & "academic performance". In preparing questionnaires they converted each variable information into an item line. Before submitting it from the research expert who check every question precisely.

Table 1. Compositions of Survey Questionnaire

OBJECTIVE	PARTS OF SURVEY	QUESTIONS
1. Know the demographic profile of the respondents in terms of:		
1.1 Gender	Part 1 / Demographic Profile Instrument	1.1.1 – 1.1.2
1.2 Year Level		1.2.1 – 1.2.3
1.3 Students' Status		1.3.1 – 1.3.3
1.4 Geographical Location during Online Classes		1.4.1 – 1.4.7
1.5 Internet Connection Provider		1.5.1 – 1.5.5
1.6 Mobile Devices Used		1.6.1 – 1.6.4
2. Identify the perceived effects of the new normal approach in education to the respondents based on:	Part 2 / Perceived Effects Questionnaire	
2.1 Fostering Relationship		2.1.1 – 2.1.9
2.2 Engagement		2.2.1 – 2.2.9
2.3 Timeliness		2.3.1 – 2.3.9
2.4 Communication		2.4.1 – 2.4.9

2.5 Technology		2.5.1 – 2.5.9
2.6 Organization		2.6.1 – 2.6.9
2.7 Flexibility		2.7.1.-.2.7.9
3. Determine the factors that influence the productivity level and academic performance of the respondents in conducting new normal approach in education:		
3.1 Time	Part 3 / Factor Questionnaire	3.1.1 – 3.1.9
3.2 Learning Environment		3.2.1.- 3.2.9
3.3 Peer Support		3.3.1 – 3.3.9
3.4 Proper Guidance		3.4.1 – 3.4.9
3.5 Family Resources		3.5.1 – 3.5.9

The researchers requested validation and approval of questionnaire during proposal defence from panel evaluators. They then revised questionnaire after receiving feedbacks made from panel evaluators. For validation purposes of survey questionnaire, researchers relied on related literature and other studies where they obtained related data. In addition, another expert validation was sought so as to assess if data collection tools were capable enough with high confidence levels to answer objectives of study. One language editor checked it once again for possible mistakes. Lastly, during reliability testing; Cronbach alpha test is based on recommendation by statistician for its recommendations

Table 2. Results of Pilot Testing

RESEARCH VARIABLES	RESULTS	INTREPRETATION
PERCEIVED EFFECTS OF NEW NORMAL APPROACH IN EDUCATION		
Fostering Relationships	0.882	Good
Engagement	0.912	Excellent
Timeliness	0.905	Excellent
Communications	0.862	Good
Technology	0.921	Excellent
Organization	0.901	Excellent
Flexibility	0.908	Excellent
FACTORS AFFECTING THE ACADEMIC PERFORMANCE		
Time	0.911	Excellent
Learning Environment	0.910	Excellent
Peer Support	0.898	Good

Proper Guidance	0.898	Good
Family Resources	0.866	Good

Quantitative analysis of the data gathered from the research instruments focused on the use of percentages and comparison of statistical treatment. To sum – up, the table below shows the source of data to answer the objectives of the study and the statistical tools to be used.

Table 3. Matrix of Analysis

OBJECTIVES	SOURCE OF DATA	ANALYSIS TOOL
1. Know the demographic profile of the respondents in terms of: 1.1 Gender 1.2 Year Level 1.3 Students' Status 1.4 Geographical Location during Online Classes 1.5 Internet Connection Provider 1.6 Mobile Devices Used	Part 1 / Demographic Profile Instrument	Frequency Percentage
2. Identify the perceived effects of the new normal approach in education to the respondents based on: 2.1 Fostering Relationship 2.2 Engagement 2.3 Timeliness 2.4 Communication 2.5 Technology 2.6 Organization 2.7 Flexibility	Part 2 / Perceived Effects Questionnaire	Weighted Mean Ranking
3. Determine the factors that influence the productivity level and academic performance of the respondents in conducting new normal approach in education: 3.1 Time 3.2 Learning Environment 3.3 Peer Support 3.4 Proper Guidance 3.5 Family Resources	Part 3 / Factor Questionnaire	Weighted Mean Ranking

4. Assess if significant relationships exist among the perceived effects of the new normal approach and factors influence the productivity level and academic performance	Statistical data	Spearman Rho
5. Ascertain if there a significant difference on respondents' perceived effects of new normal approach when grouped according to their demographic profiles.		ANOVA

Table 4. Interpretation of Values

SCALE	MEAN RANGE	INTERPRETATION	EXPLANATION
4	3.50 – 4.00	Strongly Agree	The effects of new normal in education and the factors influence academic performance are highly notice by the respondent.
3	2.50 – 3.49	Agree	The effects of new normal in education and the factors influence academic performance are moderately notice by the respondent.
2	1.50 – 2.49	Disagree	The effects of new normal in education and the factors influence academic performance are slightly notice by the respondent.
1	1.00 – 1.49	Strongly Disagree	The effects of new normal in education and the factors influence academic performance are not totally notice by the respondent.

RESULTS

In order to complete this study appropriately, the data collected has to be examined in order to respond to the research questions. Data is interpreted descriptively as already shown in previous chapter. This part involves investigating, presenting and interpreting of findings resulting from this study. Data analysis and interpretation are done. This is based on the survey's outcome and conducts a quantitative analysis of data involved.

Table 5. Sex

Sex	Frequency	Percentage
Female	65	48
Male	70	52

Total	135	100

Table 6. Year Level

Year Level	Frequency	Percentage
1st Year	35	25.9
2nd Year	56	41.5
3rd Year	44	32.6
Total	135	100

Table 7. Academic Status

Student Status	Frequency	Percentage
Regular	122	90.4
Irregular (Returnee)	6	4.4
Irregular (Transferee)	7	5.2
Total	135	100

Table 8. Geographic Location

Geographical Location	Frequency	Percentage
NCR	1	0.7
Cavite	4	3.0
Laguna	82	60.7
Batangas	28	20.7
Rizal	7	0.7
Quezon	14	10.4
Others / Bicol / Mindoro	5	3.7
Total	135	100

Table 9. Internet Connection

Internet Connection	Frequency	Percentage
DSL	14	10.4
Cable	24	17.8
Fiber	75	55.6
Wireless	18	13.3
Broadband	4	3.0
Total	135	100

Table 10. Perceived Effects of New Normal

Perceived Effects of New Normal in Education	Composite Mean	Verbal Interpretation	Over-all Ranking
Fostering relationships	3.05	Agree	3.5
Engagement	3.04	Agree	5

Timeliness	2.96	Agree	7
Communications	3.07	Agree	1.5
Technology	3.05	Agree	3.5
Organization	3.01	Agree	6
Flexibility	3.07	Agree	1.5

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 11. Factors affecting the Productivity Level and Academic Performances

Factors affecting the Productivity Level and Academic Performance	Composite Mean	Verbal Interpretation	Over-all Ranking
Time Management	3.12	Agree	3.5
Learning Environment	3.14	Agree	2
Peer Support	3.17	Agree	1
Proper Guidance	3.05	Agree	5
Family Resources	3.12	Agree	3.5

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 12. Perceived effects of New Normal Approach based on Fostering Relationships

FOSTERING RELATIONSHIPS	Weighted Mean	Verbal Interpretation	Rank
1. The new normal in education provides me a venue where the students and teachers are in group and are active in significant way	3.07	Agree	5
2. In online set-up, the teachers consider my personal presence in class and he / she checked my attention to details and interaction as important in answering the discussion questions.	3.24	Agree	2
3. The teachers are engaged, relational, and personal in communication with me like in normal classrooms that makes my interactions lead to higher – learning level so I could expand to my peers and classmates.	3.13	Agree	3
4. Social interactions are emphasized in our virtual classes by means of learning facilitation methods like open communication, productive interactions, and cohesions between me and with my peers / classmates.	3.09	Agree	4
5. The learning activities during our online classes create an atmosphere in which make me feel close to my classmates, peers, and teachers.	2.93	Agree	7
6. I do not see the online platforms as major obstacle to effective interactions because I have close contacts with my teachers, classmates, and peers through smaller group lessons and less longer lectures.	2.86	Agree	8
7. In every online classes, I feel into the real classrooms in a way that I could communicate effectively with my teachers and classmates through more frequent contacts, detailed instructions, and actionable participations in online venue like Teams, Zooms, Group Chats, and the likes.	2.73	Agree	9
8. My relationships with my teachers and classmates develop ties and motivations that make me succeed to finish all academic requirements.	3.02	Agree	6

9. I see a lot of efforts from my teachers and classmates the willingness to give emotional support to create and maintain good relationships in this time.	3.33	Agree	1
Composite mean	**3.05**	**Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 13. Perceived effects of New Normal Approach based on Engagement

ENGAGEMENT	Weighted Mean	Verbal Interpretation	Rank
1. For this new normal in education, I can say that it is more student-centered embracing the structured platforms where the students and teachers can connect in formal online environment.	3.01	Agree	6
2. The Learning Management Systems (LMS) helps me to encourage learning with a collection of tools to build and to manage online courses which makes me engaged during synchronous classes.	3.04	Agree	4
3. The teacher-supplied content like readings, video discussions, and activities in LMS and / or Microsoft Office 365 persuaded me to attend the synchronous and asynchronous sessions.	3.21	Agree	1
4. As I used the online tools, I feel the sense of excitement to check the contents in my LMS and Office365 because of the various formats (like Online Quiz, Open Forum, Turnitin, and others) used by the teachers.	2.90	Agree	9
5. In this new normal, I feel satisfied with the technological tools which enables me to monitor the events and to track all activities and submissions that I've done.	3.03	Agree	5
6. The assistance and / or support provided by the school to make the online class a wonderful experience makes me engage to accomplish every course / subject requirement.	2.99	Agree	7
7. When online learning had started, the exerted efforts by the School Administrators and Faculty members push me to continue my college education.	3.10	Agree	3
8. I can be able to see the purpose of various online activities like webinars to suffice my learning and to finish my degree program.	3.13	Agree	2
9. My teachers and the activities in connection with online classes are engaging and make me excited to complete all tasks.	2.95	Agree	8
Composite mean	**3.04**	` **Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 14. Perceived effects of New Normal Approach based on Timelines

TIMELINESS	Weighted Mean	Verbal Interpretation	Rank
1. In this new normal in education, the schedules of the online classes are well-organized, complete, and released ahead of time which lead me to have a good time management.	2.97	Agree	4
2. Online delivery of classes helps me to continue my education along with other routines like doing the house chores, handling my small business, sharing time with my family, having a part-time job, and others.	2.94	Agree	6

3. During our online classes, there are fixed schedules but with a great deal of flexibility and I could be able to set my own timetable to complete the course works.	3.09	Agree	1
4. Knowing the schedules for synchronous and asynchronous sessions as part of course orientation on first day of class, I do not encounter any difficulties in following the class schedules and dates of the requirement submissions.	3.03	Agree	2
5. Since I attended the virtual class at my home, my time seems versatile and I could easily find ways to reconcile with a structured schedule.	2.97	Agree	5
6. Even though I used computers (laptops, notepad, mobile phone) during online classes, I could finish my course tasks on-time because I do not allow some unnecessary activities to distract me like surfing the net, search social network sites or watch latest viral video online.	2.91	Agree	7
7. This new normal allows me to put break between the period of studying and it can help me to focus, allows myself free from distraction, and helps me to finish my classes efficiently.	2.86	Agree	8
8. The use of online platforms in this new normal make me able to fulfill my other obligations and personal commitments.	2.99	Agree	3
9. In online learning, I could be able to use most of my time effectively rather than regular face to face classes happened in the actual classrooms.	2.84	Agree	9
Composite mean	**2.96**	**Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 15. Perceived effects of New Normal Approach based on Communication

COMMUNICATION	Weighted Mean	Verbal Interpretation	Rank
1. Using online platforms during classes, I can be able to communicate more openly with my teachers and classmates because of greater versatility in conversations.	2.96	Agree	9
2. As I used the digital media to learn, I together with my classmates and teachers could be able to transmit our ideas to one another more clearly either in voice call or in text forms.	3.03	Agree	7
3. Asynchronous and synchronous classes give the opportunities that enable me to create a healthy online environment for communication and collaboration.	3.06	Agree	5
4. Lessons are mostly transmitted using the electronic and media technology, and it support my learning experience because of online materials which can be access anytime.	3.07	Agree	3
5. The online delivery of classes supports and enhances both learning and teaching as interaction between me and my teachers keeps on-going even after the classes.	3.06	Agree	5
6. My teachers and classmates have considered the web-based communication instruments like messengers in FB, Teams, or LMS as powerful ways of helping me to develop my own information through interactions and vice versa.	3.16	Agree	2

7. While using various online platforms, I could be able to understand well the message of course announcements and activity instructions that are posted online in LMS or the likes by my teachers.	3.06	Agree	5
8. Since most of the conversations are in online form, I send responses to my teachers and classmates in good correspondence by reviewing the composition of my message first before delivering it to them.	3.19	Agree	1
9. My capacity and capability toward the learning cycles are better this online learning period because I could access my teachers and classmates easier.	3.01	Agree	8
Composite mean	**3.07**	**Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 16. Perceived effects of New Normal Approach based on Technology

TECHNOLOGY	Weighted Mean	Verbal Interpretation	Rank
1. With the proliferation of the online classes, my learning capabilities are already beginning to shift due to the advent of present technology in positive ways and beneficial on my part.	3.09	Agree	2
2. With the help of technology, this new normal in education makes my learning more into wide range and no longer limited to just corners of the classroom.	2.98	Agree	9
3. I could learn faster as emerging technology finds its way into classrooms during online classes because if some lessons are not clear to me, I could search it right away.	3.00	Agree	8
4. Since internet connections and mobile devices are essentials in the conduct of online classes, these technological products have positive impacts in improving my studying like more access to research websites and other electronic sources.	3.06	Agree	5
5. Mobile technology promotes access to information and increasing my dedication to learning because I only visit the websites that are necessary to my lessons.	3.04	Agree	6
6. The teachers use the abilities of mobile technology and applications more and much frequently during online classes and it enhances my learning practices.	3.10	Agree	1
7. Mobile learning (M-learning) as part of the new normal in education has become an important aspect of educational technology because it helps me to read, interact, and exchange ideas with each other.	3.08	Agree	4
8. Connecting in an online learning material like lessons, video discussions, and activities that are posted by my teachers in virtual platform will let me have a flexible access.	3.09	Agree	3
9. This new normal in education encourages interactive works and cooperation on my part through simultaneous contacts with my classmates and teachers in terms group work development with the use of mobile devices.	3.04	Agree	7
Composite mean	**3.05**	**Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 17. Perceived effects of New Normal Approach based on Organization

ORGANIZATION	Weighted Mean	Verbal Interpretation	Rank
1. The conduct of online classes makes me incorporate some additional activities in my daily routine like contemplating classes / sessions, reviewing the reading materials, and concentrating to study.	3.10	Agree	2
2. This new normal in educations improves my learning experience by developing and applying viable study habits because I do not necessarily require to prepare my things going to school.	3.01	Agree	5
3. Since I spent most of my times at our home during the online classes, I have more spare time to clean and organize my stuffs essential to my study.	3.07	Agree	3
4. Because most of my course requirements are in soft copy forms, I had developed ways on how to search or retrieve them easily once I need it.	3.17	Agree	1
5. At least 15 minutes before my online class schedules, I am ready physically and mentally, and all things needed on the said class like laptops, pens, and notes are ready.	3.03	Agree	4
6. My study area during this new normal are cleaner and much organize compare during there is actual residential sessions at the school.	2.93	Agree	7
7. My study habits are more improved on this new normal in such a way I religiously follow my planned activities compare the previous years.	2.93	Agree	6
8. I have sufficient time in a day to complete all my requirements in every class because I have a timetable to follow in consistent manner.	2.92	Agree	8
9. In this new normal, I can concentrate peacefully and alone in normal times, read the lesson or material, and review notes before taking the exam or performance tasks.	2.91	Agree	9
Composite mean	**3.01**	**Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 18. Perceived effects of New Normal Approach based on Flexibility

FLEXIBILITY	Weighted Mean	Verbal Interpretation	Rank
1. This new normal in education provides me with flexible learning opportunities like teachers understand the students' differences and I have choices in various degree about what, where, when, why, and how to learn.	3.05	Agree	5
2. Blended learning is one of the approaches in this new normal and it helps me to set suitable learning objectives and be accountable on my own learning.	3.07	Agree	4
3. Flexible learning facilitates customized learning wherein my desires, preferences, experiences, and style of learning are put into considerations and I could feel the student-centered approach.	3.04	Agree	8
4. In this new approach in education, I experience the versatility of the online learning because I could monitor the learning operation and track my actions in LMS.	3.11	Agree	1

5. Online learning helps the student to learn at their own pace because my teachers can tailor the content and delivery according to my needs and background.	3.04	Agree	9
6. Because of new normal, there are clear standards or policies to follow regarding some challenges like students with restricted access in internet and I am aware of it.	3.05	Agree	6
7. The new approach in education helps me to learn the "must know learning" while at the same time I could ably plan my future activities at my own pace.	3.05	Agree	7
8. Once my teachers set the due dates for the submission of requirements, I planned well my time to possibly finish all of them and set priority list.	3.11	Agree	2
9. If there are valid reasons and I cannot comply with the due dates; I did not hesitate to inform my teachers and my teachers are willing to evaluate my situations so we could meet halfway.	3.10	Agree	3
Composite mean	**3.07**	**`Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 19. Summary of the Respondents' Perceived Effects of New Normal Approach in Education

Perceived Effects of New Normal in Education	Composite Mean	Verbal Interpretation	Over-all Ranking
Fostering relationships	3.05	Agree	3.5
Engagement	3.04	Agree	5
Timeliness	2.96	Agree	7
Communications	3.07	Agree	1.5
Technology	3.05	Agree	3.5
Organization	3.01	Agree	6
Flexibility	3.07	Agree	1.5

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 20. Time Management as factors affecting the Respondents' Productivity Level and Academic Performance

TIME MANAGEMENT	Weighted Mean	Verbal Interpretation	Rank
1. I could get an outstanding grade for my course requirements if I do things in order of priority and accomplish what needs to be done based on my timetable.	3.20	Agree	2
2. I could submit excellent requirement if I always get activities done on time that makes me feel that use time effectively.	3.25	Agree	1
3. I tackle difficult performance tasks or summative exams without procrastinating because I spend enough time for planning or force myself to make time for planning.	3.03	Agree	9
4. As I received the mechanics for Outcome Evaluation, Performance Task, and Summative Exams, I started to prepare a daily or weekly "to do" list and prioritize my list in order of importance, not urgency.	3.13	Agree	4
5. I am able to meet deadlines without rushing in the last minute and keep up-to-date on my readings and homework assignments.	3.07	Agree	7

6. I spend enough time on academic matters by prevent interruptions to distract me and avoid devoting too much time in insignificant matters.	3.04	Agree	8
7. I have weekly schedules on which I record fixed commitments such as synchronous class and asynchronous sessions and I plan time to relax and be with my friends also.	3.12	Agree	5
8. I try to do the most important activities like Performance Tasks accomplishment and Summative Exams preparation during the most energetic periods of the day and periodically re-assess my activities in relation to my academic goals.	3.14	Agree	3
9. I have a clear idea of what I want to accomplish during the academic term and judge myself by accomplishments of tasks rather than the amount of activity or "busy-ness"	3.10	Agree	6
Composite mean	**3.12**	**Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 21. Learning Environment as factors affecting the Respondents' Productivity Level and Academic Performance

LEARNING ENVIRONMENT	Weighted Mean	Verbal Interpretation	Rank
1. I can be able to finish my course tasks beyond average if my teachers have good relationship with me and I can see smartness, confidence, and firmness in making decisions on him / her.	3.17	Agree	1
2. I can be able to get an outstanding grade if my teachers are open to suggestions / opinions, are worthy of praise, and have appealing personalities with good sense of humor.	3.16	Agree	3
3. I can be able to submit best requirements / activities if my teachers imposed proper discipline and is not lenient in following the prescribed rules set by the school.	3.16	Agree	3
4. I can be able to tackle difficult course activities without rushing if I have a smooth and organized study / working area	3.15	Agree	5
5. I can be able to create excellent performance tasks and to get high ratings in examinations if there are available visual aids, workbooks, and reading materials during online classes.	3.12	Agree	9
6. To accomplish the course tasks, I rely most of the time on the explanations of the objectives of the activities and presentations of updated trends relevant to the subject matters.	3.13	Agree	6
7. A well-organized subject matter which are systematically following the course plan helps me to prepare an exceptional output for every course.	3.16	Agree	3
8. Utilization of various strategies, teaching aid / devices and techniques in presenting the lessons assist me to aim for high grades.	3.13	Agree	7.5
9. I could able to finish all requirements on time if the class time and activities are well-planned because it supports my problem solving and critical thinking skills.	3.13	Agree	7.5
Composite mean	**3.14**	**Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 22. Peer Support as factors affecting the Respondents' Productivity Level and Academic Performance

PEER SUPPORT	Weighted Mean	Verbal Interpretation	Rank
1. My teachers and classmates give details regarding the different school activities or works that supports me to develop my motivations and engagement to accomplish the course tasks.	3.15	Agree	1
2. I consider the emotional support and security coming from my family members and friends in aiming to finish all requirements and get exceptional ratings.	3.18	Agree	3
3. Having cooperative learning with peers like giving course plan and give chance to work on teamwork skills improve my academic performance and able me to accomplish the performance tasks and activities.	3.19	Agree	3
4. Through peer-to-peer support / collaboration, I could easily complete my course requirements rather than work alone.	3.16	Agree	5
5. Getting people help midst of obstacles and difficult tasks makes me becomes more competitive and encourage to stay on my degree program.	3.18	Agree	9
6. Having a support from teachers and classmates supply me a thinking that I can count on others during difficult times and I can finish my works excellently.	3.21	Agree	6
7. I think about the assistance extended by the School Administrators and Staff like Dean and PC conference as great aid to lessen the difficulties during the online classes.	3.11	Agree	3
8. I grab the opportunity of groupworks' activities because it allows me to form relationships and develop sense of responsibility which I might not typically engaged with during online classes.	3.15	Agree	7.5
9. I like to provide supportive environment through sharing of experience and demonstrating personal commitment to successfully completing the course works.	3.19	Agree	7.5
Composite mean	**3.17**	**`Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 23. Proper Guidance as factors affecting the Respondents' Productivity Level and Academic Performance

PROPER GUIDANCE	Weighted Mean	Verbal Interpretation	Rank
1. Once I am experiencing issues and trouble related to academic matters, I rely most of the time for my parents' help and assistance to accomplish my course tasks.	2.99	Agree	8
2. At home, my parents and family members have arrangement of technology and other learning materials to upgrade my academic performance.	3.07	Agree	4
3. The emotional support from my teachers and family members contributes to my wellbeing which helps me to participate during online classes and synchronous sessions.	3.07	Agree	4
4. As student, it made me feel least likely to attend the online classes because of the transitions of new normal in education but the parental and family supports are relevant for me to cope up with the transitions.	3.07	Agree	4

5. My mentalities and study habits that correspond to academic accomplishments are improved because of the guidance given by the people around me like family members and friend.	3.04	Agree	6
6. I performed well in the test and examinations since my parents properly guide me by simply giving advices and word of wisdom.	2.98	Agree	9
7. The execution of my performance tasks and outcome evaluations are greatly influence by the way my teachers guide me.	3.13	Agree	1
8. My teachers repeat the concepts, class requirements and course work instructions when I have hard time to learn so I could obtain complete comprehensions of the idea.	3.10	Agree	2
9. My parents' answers for troubles, supported, and provisions on giving help me especially on difficult times of online classes.	3.02	Agree	7
Composite mean	**3.05**	**`Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 24. Family Resources as factors affecting the Respondents' Productivity Level and Academic Performance

FAMILY RESOURCES	Weighted Mean	Verbal Interpretation	Rank
1. The socio-economic factors like family income, parents' education and the likes have influence on my academic performance.	3.18	Agree	1
2. I can be able to produce better outcomes if my parents could be able to provide me all essential things for online classes	3.13	Agree	6
3. I could perform better at online classes because my parents are financially capacitated and give moral support.	3.10	Agree	7
4. I can finish my academic requirements smoothly every term because my family are able to support all my needs.	3.14	Agree	4.5
5. My academic performance is influence by my attitude and behaviors coming from my family social and cultural resources that we can use to cope with difficult situations.	3.17	Agree	2
6. I think that continuing-generation students (with at least one parent with a bachelor's degree) are gain more support which contribute to academic performance.	3.15	Agree	3
7. My parents' participation during online classes (simply watching me and slightly listening) make me more focus on my academic performance.	2.96	Agree	9
8. My parents are wellsprings of resources which give a security especially on difficult times of online classes.	3.10	Agree	8
9. I could do all needed requirements during online classes and I consider my family resources as great contributors on my academic performance.	3.14	Agree	4.5
Composite mean	**3.12**	**Agree**	

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 25. Summary of the Factors Affecting the Productivity Level and Academic Performance

Factors affecting the Productivity Level and Academic Performance	Composite Mean	Verbal Interpretation	Over-all Ranking
Time Management	3.12	Agree	3.5

Learning Environment	3.14	Agree	2
Peer Support	3.17	Agree	1
Proper Guidance	3.05	Agree	5
Family Resources	3.12	Agree	3.5

Legend: 1.00-1.49 Strongly Disagree; 1.50-2.49 Disagree: 2.50-3.49 Agree: 3.50-4.00 Strongly Agree

Table 26. Significant Relationship between Time Management and Perceived Effects of New Normal Approach

Variables	r-value	p-value	Interpretation
Time vs Fostering relationships	.599	.000	Significant
Time vs Engagement	.630	.000	Significant
Time vs Timeliness	.666	.000	Significant
Time vs Communications	.692	.000	Significant
Time vs Technology	.682	.000	Significant
Time vs Organization	.665	.000	Significant
Time vs Flexibility	.686	.000	Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant

Table 27. Significant Relationship between Learning Environment and Perceived Effects of New Normal Approach

Variables	r-value	p-value	Interpretation
Learning Environment vs Fostering relationships	.585	.000	Significant
Learning Environment vs Engagement	.576	.000	Significant
Learning Environment vs Timeliness	.650	.000	Significant
Learning Environment vs Communications	.728	.000	Significant
Learning Environment vs Technology	.622	.000	Significant
Learning Environment vs Organization	.614	.000	Significant
Learning Environment vs Flexibility	.751	.000	Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Table 28. Significant Relationship between Peer Support and Perceived Effects of New Normal Approach

Variables	r-value	p-value	Interpretation
Peer support vs Fostering relationships	.525	.000	Significant
Peer support vs Engagement	.616	.000	Significant
Peer support vs Timeliness	.600	.000	Significant
Peer support vs Communications	.734	.000	Significant
Peer support vs Technology	.611	.000	Significant
Peer support vs Organization	.583	.000	Significant
Peer support vs Flexibility	.711	.000	Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Table 29. Significant Relationship between Proper Guidance and Perceived Effects of New Normal Approach

Variables	r-value	p-value	Interpretation
Proper guidance vs Fostering relationships	.478	.000	Significant
Proper guidance vs Engagement	.590	.000	Significant
Proper guidance vs Timeliness	.608	.000	Significant
Proper guidance vs Communications	.724	.000	Significant
Proper guidance vs Technology	.707	.000	Significant
Proper guidance vs Organization	.680	.000	Significant
Proper guidance vs Flexibility	.729	.000	Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Table 30. Significant Relationship between Family Resources and Perceived Effects of New Normal Approach

Variables	r-value	p-value	Interpretation
Family resources vs Fostering relationships	.482	.000	Significant
Family resources vs Engagement	.581	.000	Significant
Family resources vs Timeliness	.612	.000	Significant
Family resources vs Communications	.679	.000	Significant
Family resources vs Technology	.625	.000	Significant
Family resources vs Organization	.631	.000	Significant
Family resources vs Flexibility	.672	.000	Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Table 31. Significant Differences on Respondents Perceived Effect when grouped according to Sex

Perceived effects	f-value	p-value	Interpretation
Fostering relationships	.339	.562	Not Significant
Engagement	.063	.803	Not Significant
Timeliness	.742	.390	Not Significant
Communications	.735	.393	Not Significant
Technology	.727	.395	Not Significant
Organization	2.030	.157	Not Significant
Flexibility	1.359	.246	Not Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Table 32. Significant Differences on Respondents Perceived Effect when grouped according to Year Level

Perceived effects	f-value	p-value	Interpretation
Fostering relationships	.111	.895	Not Significant
Engagement	.504	.605	Not Significant
Timeliness	.040	.961	Not Significant
Communications	.202	.818	Not Significant
Technology	.279	.757	Not Significant

Organization	.302	.740	Not Significant
Flexibility	.269	.764	Not Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Table 33. Significant Differences on Respondents Perceived Effect when grouped according to Students' Status

Perceived effects	f-value	p-value	Interpretation
Fostering relationships	.164	.849	Not Significant
Engagement	.617	.541	Not Significant
Timeliness	.796	.453	Not Significant
Communications	.456	.635	Not Significant
Technology	.547	.580	Not Significant
Organization	.676	.510	Not Significant
Flexibility	1.025	.362	Not Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Table 34. Significant Differences on Respondents Perceived Effect when grouped according to Students' Geographical Location

Perceived effects	f-value	p-value	Interpretation
Fostering relationships	.388	.886	Not Significant
Engagement	.612	.720	Not Significant
Timeliness	.762	.601	Not Significant
Communications	1.017	.418	Not Significant
Technology	1.197	.312	Not Significant
Organization	.851	.533	Not Significant
Flexibility	1.195	.313	Not Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Table 35. Significant Differences on Respondents Perceived Effect when grouped according to Students' Internet Connections

Perceived effects	f-value	p-value	Interpretation
Fostering relationships	.194	.941	Not Significant
Engagement	.211	.932	Not Significant
Timeliness	.307	.873	Not Significant
Communications	.071	.991	Not Significant
Technology	.479	.751	Not Significant
Organization	.328	.859.	Not Significant
Flexibility	.186	946	Not Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

Table 36. Significant Differences on Respondents Perceived Effect when grouped according to Students' Mobile Devices used

Perceived effects	f-value	p-value	Interpretation
Fostering relationships	.480	.620	Not Significant
Engagement	.307	.736	Not Significant
Timeliness	1.087	.340	Not Significant
Communications	.160	.852	Not Significant
Technology	.600	.550	Not Significant
Organization	2.091	.128	Not Significant
Flexibility	.816	.445	Not Significant

Legend: If the p-value is <.05, Significant. If the p-value is >.05, Not Significant.

DISCUSSION

Sex was included by the researchers in the study because of some methodological concerns. The differentiation between respondents' perceptions will be very significant once the group is split along this line. Also, it created a level playing field for individual opinions as the participants were an equal number of males and females. In table 6, 65 females and 70 males that constituted 48% and 52% respectively participated in the study. This means that there was little dominance from male participants. This result agrees with Dierdorff (2020) article which states that male to female ratio for Philippines is 100.87 males per 100 females. Male to female ratio of Philippines rose from 98.91 males per 100 females' in1950 to 100.87 males per 100 females in 2020 growing at an average annual rate of only about a tenth of one percent every year. This also indicates that Philippines is one of those places where gender parity in education might come soonest or has already been reached; hence there are small noticeable gaps between boys' and girls' enrolment rates unlike many other nations across Asia where such disparities still persist till date. Actually, almost equal number of students who took part in this study were male or female ones. That resulted to diversity including balance and perspective contributing to improved quality as well as social relevance of researches carried out on them

The level of year refers to four years of college, freshman, and sophomore, junior and senior. It is not the number of years you have spent in college that classifies students but the amount of semester hours which you have earned. In this research it was important to understand the student level since they had different experiences in attending face to face classes and online learning. Since every year level has their own experience or background into a new normal approach in education therefor researchers included year level as part of demographic profile to know about their views on "new normal" approach towards education. Similarly, understanding the perceptions for students at each grade would be good starting point for achieving that objective.

One of the demographic profiles in this study included student status which aims at determining regulars, irregulars (returnees) and irregular (transferees) perspectives. For instance, when talking about preference it will help also see the difference between

regular students and irregular ones like for scheduling environment etc. The result shows that there are exactly one hundred twenty-two regular students; six are returning back to school after dropping out while seven transferred to public schools all totaling to one hundred thirty-five students. This indicates more regular than non-regular ones. As many as there are who count themselves as regulars so there are enrolled in these courses who do not consider them as such because they are simply coming to learn. When motivated to learn, according to Hirudayaraj & McLean (2018), students become competent and confident with their skills. Additionally, practical effects motivate them further rendering them engaged learners. Therefore teachers who work hard with every learner's motivation can manage educational objectives: student achievement and continuous learning On the other hand according another Favour (2017), irregular students frequently confront several difficulties in their academic subjects. The gravity of the matter is like a kind of simple difficulty experienced before. A simple problem that can be encountered is having a confusing or conflicting class schedule. To sum-up, the study was dominated by the perceptions of regular students. This means that the data generated was merely on the point of view of the regular students which is much acceptable.

As one of the demographic profiles in this research, the researchers featured on geographical location among several others. The researchers need to know and identify where the respondents which is students having their online educations. This means that student's location during distance learning could be in Manila, CALABARZON or any other places where he manages it from, performs it in and interacts on an internet platform or elsewhere. The results presented in table 9 indicated that sixty percent were from Laguna area followed by Batangas with twenty-seven percent then Quezon accounted for ten point four percent. Such a huge domination exists between southern regions over northern part region. Dyer, et.al (2018) stated attending college close to home saves a lot of money, gives you more internship and networking opportunities, makes it easy in case of an emergency.

To get access to the Internet, an Internet service provider is needed. Internet service providers (ISPs) serve as intermediaries between users and networks providing global connectivity. The majority of ISPs offer broadband internet access via cable lines, DSL lines or fiber optic cables. Even if you use a public Wi-Fi signal to connect your device online; yet still this Wi-Fi router is connected with an ISP which offers internet service through it. In light of current study was conducted based on the term internet connection because now having internet connection provides access to a vast amount of information, expertise, and educational opportunities. For instance, professors use online resources to plan lessons while students use them for skills development. "Internet connection" was one of several demographic variables that could easily relate students with teachers by using it as a medium or bridge in online education. Also, students can find assignments, quizzes and presentations as well as any other information related to their studies through the internet. It is shown in Table 10 that fiber connections are still leading with 55.6% and followed closely by cable network (17.8%) while wireless connectivity takes third place with 13.3%. This means that Fiber Connection has huge gap between the two followed. The result correspondence with the website fusionconnect (2018) stating fiber-optic internet services are quicker, with speeds of at least 250-1,000

Mbps in both directions. Fiber networks provide a more stable network option when compared to other network connections since they are less likely to be disrupted than other types of connectivity. In other words service is guaranteed under fiber networks.

Information and communication technology (ICT) are rapidly being used in educational activities as a teaching and learning aid, in keeping with this trend. As supported by Gomez (2016), this is due to the advantages of mobile learning, which include the ability to exchange knowledge without regard to distance or time constraints, the ability to encourage the development of critical thinking, participatory learning, problem solving, and lifelong communication skills. On this study, researchers used term mobile devices because these are the common tools used in online learning especially in this time of pandemic. Also, students can use mobile devices as a tool in finding relevant information regarding their projects and assignments, as well as seek advice from other researchers while they save and arrange their research materials on computers. The researchers included Mobile Devices as one of the demographic profiles to differentiate the mobile devices used in taking the new normal approach. In distant education, the mobile device is gradually becoming a compelling learning tool for enhancing teaching and learning. Its use allows for more flexible course delivery, as well as learners' access to online learning platforms, course resources, and digital interaction. The table 11 shows that the computer or laptop is the most useful device in online learning with fifty nine and three percentage, followed by smartphone or android with thirty five and six percentage and the least device used in online learning is IPad with five and two percentage. The study shows that the computer or laptop dominates the survey with a 59.3 percent. This leads that the computer/laptop is the most used and most helpful mobile device during the new normal approach to get the schoolwork’s finished. The computer has had a significant impact on social progress and is now considered a necessity in today's world. Students can attend classes from anywhere in the globe as long as they have access to a computer and an Internet connection. Also, mobile device has the potential to transform education by bringing in a new style of connected instruction. This concept connects teachers to their students as well as professional knowledge, tools, and systems to assist them in improving their own education and personalizing learning.

Various authors agree that a classroom relationship is vital for success; simultaneously, according to many authors, the most important thing in the classroom for success is good interpersonal relationships. When a student builds connections with their peers and classmates, they become more likely to engage in studies hence this could lead to top academic achievements. It was also noticed that behavioral problems were significantly reduced due to positive interaction (Reese, 2015). In terms of researchers’ evaluation, there were no other indicators except agree. It means that even if instruction was done through distance learning mode online class behavior towards each other remained quite respectful which means it went well. However, there was no such indicator interpreted as strongly agreed. Similarly, this is just an initial step considering that schools are still attempting to get their feet wet regarding online classes. Mostly, the quality of education lies squarely on how teachers relate with students all through the learning process. This posed a significant challenge to educators in guiding their pupils into realizing their educational potential. To boost student participation in online learning environments researches have shown that; the more they pay attention to developing

positive teacher-student relationships (Pope, 2016). In summary effects of new normal approach on education are seen through fostering relationships and its composite mean is therefore considered as agree (3.05).Subsequently this indicates some strengths and weaknesses about an online class involvement. However; one may look deeper into this because approximately half of the total indicators had strongly agreed interpretations although it does not guarantee high quality of instructions at all times. Dyer et al. (2018) postulate that social interaction teaching methods foster learning communities. The curriculum and teaching methodology are important to make it successful. Nevertheless, for any online program's curriculum it should be well scrutinized and prepared before being launched. In building online education programs in a rush, many institutions ignore the value of curriculum content development as well as the need for competent individuals who could produce it for them. However, what works for a classroom in terms of curriculum design or instruction may not necessarily work for an online setting since learning and instructional paradigms are very distinct in such cases (Akamai, 2017). Consequently; using texts communication along with group interaction and participation should be considered while developing online syllabus.

The suspension of face to face classes due to the pandemic has also made it difficult for lecturers to tell whether their students are still involved in what they are teaching because they can only see their students on their monitor and they can only be observed once they have online classes. Based on the researcher's evaluation as per verbal interpretation, all interpretations were agree. Based on verbal interpretation evaluation done by researchers, all the interpretations gathered agreed. Furthermore, having an interpretation that agrees is a positive result from respondents because despite of shifting into online classes within a year, the learners remain involved in learning. Therefore, to sum up everything, according to perceptions of engagement as effects of new normal method in education, composite mean is 3.04 meaning agree. This new approach gives teachers a different way to understand their students; it will help them keep student focus and engagement without losing any more interest since it is no longer traditional face-to-face classes anymore. In relation to this matter, this strategy helps students; again I would like to emphasize that it is important for those who talk industry experts among others through webinars. Through this means the students were able to see how they could apply what they had learned in school so that they can become better engaged learners when given future industry companies opportunities. Still many times these people insist on calling themselves professionals instead of individuals that work professionally with other people's lives. As Soffer, et.al (2017) noted that active participation and engagement should be integrated into making lessons or activities and this has been supported by statements therein. One approach which may be used as one of the most effective methods towards achieving interactive lessons is using interactive lessons instead.

One of the most important things to consider when taking an online course or remote classes is time planning because students are responsible for directing their own learning and progress. In order to learn online, they must allocate time to revisit and go through the lessons. It turns out that everything in oral interpretation agrees with each other. Based on what respondents said, all the results of indicators are positively stated. This could be considered as a fairly good beginning since they have just been done online

and can be greatly improved over time. In addition, it took 2.96 composite mean in terms of timeliness as perceived effects of new normal method on education which means agree. They are aware of how to make a schedule; they understand how to make proper use of their time so that every minute counts for them and helps them achieve more within short period. Again, this will ensure that every student finishes tasks faster while at the same time giving them enough time for personal activities or hobbies during recess periods even if some students want freedom to choose subjects at school. Thus, timeliness was among the perceived effects of new normal in education with lowest composite mean in this study. As such it should be noted that this should not only focus on personal reasons but also give room for others who might have different motives (Wanner & Palmer, 2015). They do not waste their time aimlessly hence making it possible for them to act upon other crucial things (Fry et al., 2015), except only when certain situations may require a person's attention immediately (Williams, 2017). The right management system also makes it easier for learners to track their academic progression throughout the year including holidays. Students feel less stressed when they know how much progress has been made toward completing assignments because they can see what remains on the list of tasks to be done. Just like that, they complete and become successful in their aims. In addition, it allows more time for students to finish their assignments on time with a great focus on them without any distractions (Hodges and Yarbrough, 2017).

One of the keys to achievement and well-being in a "new normal" approach to education or face-to-face class is communication. According to the researcher's questionnaire, they all agreed on all issues confronting new normal approach. It therefore indicates that New Normal Approach has yielded successful communication within education system. In conclusion, it can be said that "communication as perceived effects of new normal approach in education" had a composite mean of 3.07 and an agreement verbal interpretation. When communication flows easily, work goes much more smoothly. It is hard to finish a task when communication or instruction is difficult. These internet applications can also be used for accessing, sending and saving important files, papers and presentations. With these features at hand, people could show their screen by sharing it with others too. For students who struggle due to poor teacher-student communication ability; learning may be difficult leading to poor academic progress (Morreale and Pearson, 2000). Students must differentiate between correct answers and wrong ones depending on teachers' classroom language skill only. Student during lecture needs to concentrate on his lecturer in order to learn something from him/her. Teachers should offer straight talk which will make sense at the same time. The mentioned works are media in transmitting good communication skills in online environment.

Connected learning is an educational approach that connects teachers with their students, and also professional knowledge, tools and systems to enable teachers' personal growth in education and personalized learning. Therefore, technology has a mean of 3.05 from perceived effects of new normal approach in education and it is interpreted as agree. The results of this survey showed that new normal approach was advantageous to the students and the teachers because it helped them to search and communicate with their peers at a time when pandemic struck globally. E-learning has extended or become an alternative due to attractiveness of mobile devices, internet and

availability of data that has increased significantly over the last years. This is different across countries or regions where they are applied like in developed nations compared to developing ones (Magulod, 2019). Also in mobile learning optimistic attitude towards adoption can be successfully transferred. The level satisfaction from using m-learning directly depends on perceived assistance received. By providing technological conditions for users and by giving they required prompt, contextual support from specialists these learners will not only gain confidence in m-learning but will also accept it and use it willingly. Therefore through the application of technology, group works as well as wide-range learning outside the classroom characterize conducting online class via online lessons/lectures. This agrees with an article posted on technical education website which states that traditional learning formats may not have flexibility neither provide learning support found in digital learning tools though. Educators are able to introduce more tailored changes into different interactions taking place within their classrooms through employing mobile devices such as computers networked systems for each student's benefit. Digital resources represent games websites and digital books produced for various types of learners starting from novices up to professionals at higher levels involving them into more engaging activities. Learners who have little understanding can approach the experience as a beginner and become intermediate ones as they improve their knowledge and skills

However, the most important thing for the organizational system is that it should prioritize clear communication of objectives and expectations, as well as visibility into the effort required to achieve learning objectives. And it has to be done in such a way that is just as well-organized as the learners themselves. The best virtual setup captures useful and relevant information from student interactions on digital platform and present it through a neat structure with logical flows that are easy to navigate and follow for students. All participants' responses were identified under agree according to researchers. It thus means managing an online class has good organizational effects; moreover both management and student are organized when doing distance learning. But no one scored high legend which was strongly agree. In this case, this means not all systems of an online class are properly structured because distant learning has only started lately and many improvements will be made here to make sure it became fully organized. In conclusion, organization as perceived effect of new normal approach in education composite mean is 3.01 interpreted by agree. According to Sanchez (2020), any course management strategy demands strong syllabus, clear instructions, well-designed materials, timely feedback - whether face-to-face or online teaching approaches.

Through flexible learning, students can determine when and how they will learn by adjusting their course to their specific needs. It means that they retain a lot of information with better results. Also, with flexible online learning, students could take as much time as possible in grasping the subject matter ensuring full knowledge before moving on. This means that students can be doing other activities while taking classes. On the other hand, they have deadlines to meet but more control over how they allocate their time – select time for study, finishing assignments and listening to lectures among others. All these answers went along with agree on the legend said the researchers. This shows that learners become more adaptable to distance education and gain experience using virtual

platforms such as LMS, Google Meet or Zoom Meeting among others. However there were no interpretations for strongly agree, at times when tasks within stipulated periods get hard for one learner thus failing in them whereas one's knowledge is not put into first hand consideration most of the times. According to Paul Drijvers (2016), educational technology has a major advantage because it allows students to go beyond classroom boundaries requiring that learners proceed at their own pace and at levels appropriate for themselves. With online learning systems these practices are supported which also enables progress tracking from both sides i.e., teacher-student perspective through student-teacher ways respectively. They are basically empowering learners so as to learn more easily. That is why monitoring learners' progress in teaching is important but with e-teaching tools used online this becomes not only simple but also efficient enough. Their growth is based on records covering attendance sheets, grades obtained and participation made in LSM (Learning Management System).

Therefore, the study found that both flexibility (3.07) and communication (3.07) were ranked at number one and verbal interpretation of agree based on composite means was got. Thus, it can be said that these variables were the most affected by respondents in transition to new normal in education. As a result relationship building (3.05) and technology (3.05) are tied 3.5 ranked with verbal interpretation of agree as their composite means. This fact shows that when schools rushed to create online learning plans for their students, they had an unexpected opportunity to rethink the structure of the school day itself. Because of this, some institutions chose to have less synchronous class time and more independent, asynchronous time due to lack of resources available for instruction purposes . However, Covarrubias (2015) supported my first point by saying; although many students missed their extracurricular activities at school, others found that fewer planned activities combined with shorter days without commuting resulted in longer sleep periods and more leisure or family time. Engagement with a verbal interpretation of agree ranks at 5 for perceived effects on new normal approach in education according to the authors' explanations (Paris et al., 2019). In other words despite absence of physical schools in place, this new setup still compels students into participating actively in all learning processes as before. Whole class learning is getting facilitated through full-online approaches adopted by students. Flexible term policy with alternative forms of assessment such as open note tests peer review and more revision is redeeming options while engaging learners not only for marks but also because they are learners themselves indicated Paris et al.,(2019). For some pupils who lacked external stimulus though this was particularly hard work is incomplete yet done so far that teachers may use this instance to discuss the importance of learning beyond schooling years and co-design suitable curricula for them to accomplish their tasks.

Time proficiency is a way of considering the weekly calendar and running time for specific purposes in order to work smarter. However, everyone can develop habits or customs that will help them manage their time better, although some individuals take to effective time management more naturally than others. In addition, this will encourage students to be cautious about using their leisure effectively. The statements by all participants fall into the agree area as interpreted by researchers. One would reasonably assume that majority of the learners are still capable of managing their time under online learning circumstances so as to meet subject deadlines. This makes students' day top

priority because they have the choice of prioritizing what needs to be done in a day or prioritizing the most difficult activity or evaluating every project that needs to be worked on and identifying which tasks are the most urgent and necessary ones out if those projects. Nevertheless, no one has been able to reach the higher interpretation, which is a strongly agree. It also means that students who are learning online do not learn all about time management skills because at times they may procrastinate thus missing deadlines and failing courses while other things causing distractions taking place at same instance like having an immediate task that should be done before concentrating on anything else; therefore they end up postponing their duties. Efficient time management does not mean doing more things or doing them quickly but it means doing more important activities each day. Effective time management is actually most essential when compared with efficient time management though student may doubt it sometimes. In case students use their available free space well and submit assignments within timelines, then they can get satisfaction in knowing they did their best. “Students who improve their study habits often become more organized, confident and perform better academically” (Grade Power Learning 2018). This may also enable pupils shun procrastination habit considered dangerous by many because once one starts putting off assignments towards the deadline, there will definitely be tension built up within oneself ending up producing unsatisfactory results. This indicates that academic performance is higher among students who used time-saving strategies, whereas those who did not use any time-saving measures for their school projects performed poorly in academics and even disliked the task because of disarray in managing things; therefore they postponed doing it until it is late.

One responsibility of a professor is to create an engaging learning atmosphere that meets all the safety requirements of the classroom. Students are encouraged to do right things and assist each other when instructors foster safe environment with set rules. In addition, extrinsic motivators can help students understand classroom expectations thus promoting intrinsic motivation. These types of motivators include praise, positive reinforcement, and rewards for good behavior. It just means that a student’s place or environment really affects their learning and the performance they give whenever there are tasks and classes. This table also shows that students are aware of what one’s own areas can bring to them whenever studying would take place in these particular sites. To sum up everything, as factors impacting on the productivity level as well as academic performance of respondents, learning environments have a composite mean score 3.14 interpreted as agree. This means that the productivity level definitely influenced by learning environment. Secondly having proper surroundings helps students concentrate on their task at hand so they will be able to perform better in class. Teachers need to bear in mind that it is essential for them to consider the materials they will use in teaching so that students can better study and be productive. Students will benefit more from a well-prepared environment.

Teacher job satisfaction is partly determined by the support of colleagues. Not only should students have the support of their peers but their teachers too. This makes everyone more positive and it has a lot of benefits to them in the end. It was researchers' opinion that no signal could mean anything other than agree. In other words, this means that even these student professors still depend on each other for support despite changes

in the way they teach and learn outside class buildings. The fact is that students as well as teachers can put to use any kind of aid they may require from themselves. It influences learners' academic performance positively sometimes. This illustrates how pupils do better in school when others help them out, though not always having said so indirectly by using different expressions for consent according to a study done by professors who work at universities (Wang & Nuru, 2017). Supporting each other provided good dealing with stress for faculty members. They felt more positivity about everything and any tasks they had to complete were not a problem anymore because of peer encouragement. That is why students were helped in continuing with what they had been assigned by their relatives or close people surrounding them during their studying process there. If this happens, then they will be able to concentrate on what they are doing now instead of getting distracted away from it. Students also develop social interaction skills and feel connections with those around them which contributes to mental health conditions favorable within a student. It reflects existence of a strong bond between them. By this it can be understood that online learning gives enough room for peer support among students. Accordingly, Srinivas & Venkatkrishnan (2016) confirmed such points mentioned like isolation from other students or teachers and professors as well as university staff. Peer contribution is an optional thing where online education could be transformed into something beneficial. It might act as an additional source of help apart from tutors or colleges. This form provided relief so that many of them felt more comfortable than before.

Teachers and parents should provide proper guidance in online learning to help learners understand and use wisely the educational, vocational, and personal opportunities they have or can develop. Proper guidance is a systematic assistance aimed at enabling learners adjust to school and life satisfactorily. All respondents answered agree as per the researchers' interpretation. This implies that most students who engage in online learning are well guided by their parents as well as professors. Learners play a great role in how performance activities are done and how they are assessed. Conceptual repetition, course requirements, and class work instructions among others are much obvious so that students may get completely acquainted with the subject matter. However, no one has reached at the higher explanation which is strongly agree. Therefore, this means that it is not well-directed by parents or lecturers but given because it helps students know how knowledge can be understood and quickly learn during remote studying sessions. According to MaryVille University (2020) article families fear that isolation would become a problem for college students taking online courses. Thus, these learners might struggle with staying connected if they lack social connections. Additionally, emotional cues can be very difficult to interpret using video platforms online for students too. Not having any personal connection stifles advanced learners' social skills development.

The resources available within a family are essential in ensuring that students have a good life. A well-funded individual can effectively and efficiently undertake academic activities. Hence, the student will only concentrate on his or her studies complemented with some sort of extracurricular activities that would assist him/her to become a rounded person. The responsibility of sending children to school where it is their right over others rests upon parents as primary duty bearers. All respondents' answers were categorized

as agreement by researchers who interpreted them; this indicates that majority of the students are backed up by their families in terms of money and also moral support during this 'new normal' way of learning. This means that the guardian or parents are supporting the students in terms of financially and emotionally throughout their new normal education. In conclusion, there was a composite mean score of 3.12 for family resources as a factor influencing participants' productivity level and academic performance which was interpreted as agreement. This implies that because the parent is the one who offers financial aid to his child so he can finish school admitting thus being responsible both morally and financially for his welfare, they play an important role in determining how productive or inefficient any given student ends up being at school. Parental involvement is crucial to a child's success at school. Parent-engagement is when parents either orally or physically aid in their children's' schooling. Mothers and fathers can also be present at home and/or at school – however they choose to remain attached to their children's lives – holding out great hope for those very young ones born yesterday. Biological Parents become involved primarily based on how they build up meanings for themselves as parents through participation in educational programs offered by schools for example; indeed such actions contribute towards better feelings about knowing how effective they are supposed to be concerning enhancing academic achievements among pupils while attending classes.

Based on table 25, the five factors which impacts students' level of productivity as well as academic performance are like for instance peer support. According to these results, peer support (3.17) is ranked first and indicated that it was agreed upon by verbal interpretation based on the composite mean. That means that the answer will be significantly be affective through their response to this question in relation to their level of productivity and academic achievement. It implies also that although student-teachers may have different methods of being instructed now, they still receive each other's assistance and know how to go about it even when they are not at school. This shows that both students and teachers can get assistance from it. Having a complete course plan given out to learners plus an agreement on working with others provides enough motivation required for moving forward in educating more about themselves during the process of performing a task or any other activity. As per Paris (2019), peer groups are thought to have a substantial impact on student. If the group atmosphere is warm, understanding, helpful then group influence or motivation, task performance and achievement will most probably be positive. Therefore having continuous support from those close to them makes them conclude tasks they set aside for themselves. This enables them to see sense in what they do thus keeping away their minds from being distracted thus maintaining focus on whatever they do. Positively such studies indicated that "support coming from classmates and even family" is significant in helping "a learner belongings meaning that getting help from others can make each learner more fruitful or informative" while "peer support coming from teachers classmates siblings" does promote the educational accomplishments of students over time." Supportive family members were parents who often gave help after classes by doing homework together or checking exercises; there were peers who provided moral backing; visiting friends in college who helped solve difficult questions; lecturers carried out extra tutorials during weekends since some topics proved to be tough.

Table 26 showed that time management had a significant relationship with all the perceived effects of new normal approach on education as factors influencing the students' academic performance and productivity. In another study conducted by Machebe, et. al (2017), most students agreed that success of online learning experience is impacted by effective time management. Fostering relationships through time management was positively related because teacher's monitoring ways to consider the student's presence in class are based on this relationship as well as how students organize their respective schedules. They noted that relationship can increase the academic performance of the learners (Dyer et al, 2018). Those moments when students value positive relations it happens in their lives when they have an opportunity to spend time with other people conversing freely for example. If they need it, then they could be able to integrate with the online classroom and increase ability and confident to seek out resources once. The findings also revealed that time management had significant relationship with engagement as perceived effects of new normal approach in education. These facts show how more students' engagement can be enhanced if teachers used certain tools or resources. Indeed, whenever possible all lessons, learning materials and activities were posted at LMS so far which boosts student engagement since they can fix their schedule straight away. This is consistent with Morgado (2015) who stated that managing one's time is crucial especially in final exams since it affects overall results and accomplishments of someone. Moreover, this suggested that there was a correlation between time management and students' engagement. Students should observe and prioritize their task and responsibilities once this principle is incorporated into future industry practice from this day on by making sure that all activities are completed before leaving school premises so as to heighten your level of interest through active involvement through the use of appropriate instructional strategies like group discussion sessions among others where one has obtained enough information about each topic addressed thus enabling you become more enlightened with business concepts while at school; having them engaged would mean meeting deadlines on all course requirements. On the other hand, time management had significant relationship with timeliness as perceived effects of new normal approach in education. Majority of students who prefer online classes have no need to trail behind regular classes at school. Accordingly, these students take their studies depending on the situation. They could also do their studies while doing other activities like running small business or family bonding among others. Many online classes are set-up with high adaptability (Sellers, 2016). Ample room for flexibility is allowed in this case where deadlines are incorporated into the course. The teachers can fix the schedules and the students need to set his own timetable to complete the coursework. Similarly, this suggested that it can cause challenges to students who have difficulty in keeping or following the timetable. Communication is one of those factors affecting academic performance; it had significant relationship with time management as perceived effects of new normal approach in education. Various studies had showed that academic performance is influenced by the communication skills of the students and teachers. All children's achievements depend on how well they understand instructions given. Online education has also been enhanced through teaching aids such as online materials (O'Doherty, 2018) and thus making communication within a culture meaningful during particular periods even when they may not be able to meet face-to-face because these forms of distance learning require continuing interaction based on specific

educational objectives agreed upon earlier between trainers and trainees before embarking on such academic pursuits aimed at satisfying their respective career goals within existing legal frameworks as stipulated under national legislation going forward into our future institutional socio-economic development plans for a greater society worldwide having more citizens being equipped academically than ever before through proper application various technological devices used today including smart phones connected internet networks access world wide web sites where both parties involved communicate each other without physical presence which allows exchanging information across geographical locations globally due globalization trend intensifying competition levels. This means that an online environment which is in good shape can bring together many different opportunities that involve both synchronous and asynchronous communication modes for students and teachers to share information as well as work together. The study further revealed that time management correlated with technology as perceived effects of new normal approach in education. The teaching and learning process is not limited to the classroom because of the help of technology. This rapid growth in technology has paid full price for the arrival and development of technology and its application to teaching. In reality, this ushered in technological advances that enabled learners to manage their time well. They can complete all the assignments within a given period. Mobile technology has become one of the central tools used during lessons; it is employed by teachers in shortest possible terms. This research also revealed that mobile devices such as smartphones are having so positive effect on improving education and learning (Ching-Wen, 2015). One way through which teachers could use mobile technology involves combining skills with applications that enhance certain aspects of learning. Moreover, teachers who were familiar with software programs before moving completely online have an advantage here. This implies well-utilized time in transition means being favored or placed at an advantageous position. As well, there is a significant relationship between time management and organization as perceived effects of new normal approach in education. Class scheduling was clearly outlined on how synchronous and asynchronous classes will be conducted online. Since schedules were already set up, organized online classes leads to good time management too. Kudari (2016) explained that if implemented consistently across different courses then study habits would have a bearing on academic performance hence influencing academic performance levels among college students hence doing them simultaneously would earn similar marks for all subjects.. If we want better results our studies should seriously consider this advice. Finally, relationships between time management and flexibility were also identified by the study. Online courses are flexible ones. Accordingly, Sanchez said they merge their course works together with research and learning tasks done at home allowing students choose when, where, how or what they want for studies in this situation. As he added, teachers can customize content and provision to the needs and background of their students. Not only do new ways of doing things need the new standard, but also new ways of thinking. This represents a shift to more imaginative, student-centered approaches pedagogies and practice. Meaning, the students have capability to create their timetable and schedules accommodating some lee ways for other personal matters or agenda.

Table 27 by the way showed a significant relationship between the learning environment and all of the perceived effects of new normal approach in education as factors influencing academic performance and productivity level of students. For instance,

Young (2019) says that if students view their learning environment positively and favorably, they can learn more effectively. Positive environments have students who belong, trust others, and are encouraged to take on challenges, try out new things, and ask questions. Since they are always with a student every time, he/she studies, people who come into contact and spend time with them belong to students' environment even outside school. Bates (2018) is consistent with this when she states that relationships refer to supportive learning environments where good interactions among learners such as children to adults in schools promote co-operations that breed trustfulness This sense of connection to education is associated with greater attendance rates higher grades better scores on standardized tests longer time spent in school. Furthermore, it was found out through a study that learnt environment had significant relation to engagement as perceived effect of new normal approach in education. Moreover, School in Rose Valley article mentioned engaged learning environments which improve children's concentration and awareness; contribute to high - quality learning experiences; develop pupils' higher-order critical thinking skills; result in enhanced overall student achievement levels. When there is a bond between one another plus the educator(s)", students tend towards collaborative active learning styles. Learning should involve feelings and emotions apart from rational thought based educational material or subject knowledge acquisition alone for it be motivating for learners at all times not just when supported by other conditions. It also allows for more customized learning experiences whereby each learner works at his own pace of development irrespective of what the others are doing or how fast they completed their assignments or projects if any were given at all. Similarly, there exists a significant relationship between timeliness and its perception as an effect from new normal approach on the condition concerning the educational system. Students reside in different learning environments than one another. They must adjust themselves based on their environment to be able to gainfully utilize their time. Certainly, even though it is now only a virtual school and the study areas differ for them, students should know how to enter and exit class on time. Time management that can start from there is a very good practice which they also have at their disposal until they are employed somewhere else in future. On the other hand, communication has significant influence on learning environment as factors affecting academic performance as this describes perceived effects of new normal approach in education. Evidently, good learning environment requires effective communication between professors and learners within a particular institution or course of study. This was proper way of engaging with others whom they were studying with alongside among others like discussing about school issues amidst all the rest items being covered together by students in particular on papers presented by lecturers or students themselves as well. Communication processes must be open so that information can flow freely from lecturers to students or among the learners themselves hence onwards mooting student-teacher relations let alone teacher-student communications. Likewise, ETRP Moodle Site article confirms that communication channels are crucial especially for an ideal learning atmosphere subjected into thorough analysis and these include but not limited to what others might assume about them at first sight such as one – way exchange of information versus interactive discourse meant for expanding own understanding plus providing support during conventional instruction periods. The provision of logistical information as well as social context contributes towards healthier supportive learning environments too. Incorporation of technology in

the learning environment is considered as one of the effects of the “new normal” approach. Right now, this is happening for all students across the globe during this pandemic period. So, everyone currently uses technology to keep on studying at school via their mobile phones or laptops to access online lessons. As per Spector, et.al. (2018), a modern-day learning environment naturally blends tech into flexible teaching areas for better student engagement and integration with solo-small class-whole class that is believed to be important for student success today. Additionally, organization had significant relationship with learning environment as perceived impact of new normal approach in education. For them to concentrate and enjoy learning, the place where they study should be well arranged. Effective learning environments are also those that are literate and meaningful, accessible and organized, but most importantly realistic. Teaching and learning is hard in an untidy disorganized unfriendly condition between learners and educators. A large portion of their time is consumed by students in their learning environment; hence it needs to be exciting and inviting for anyone who wants to learn anything more about it. Hence what they value, believe about teaching-learning process and students’ knowledge are depicted in a given place of studying. Lastly, findings from this study also demonstrated that there were significances relationships between learning environment as well as flexibility. Since students’ ability to move around freely while studying depends on whether their classrooms have enough space or not just ergo will be analyzed alone below however these are not only several ways through which teachers can impart knowledge on other subjects into minds like long jump among others because professors may opt for other approaches too through which they can teach them things discussed above which happens in most classrooms as you will see later on in this report so stay tuned though it does vary slightly from professor-to-professor”. Whenever pupils think about a flexible schooling room, they think solely about the physical space. It is a fact that while the nature of space allows it to be adaptable, flexible learning environment goes beyond this aspect to take into account various other factors like the arrangement of furniture in class. Other aspects of the learning environment addressed in modern, flexible learning environments include how students are grouped during learning and how time can be used more freely throughout the day.

The analysis in Table 28 showed that peer support had a strong correlation with all the perceived effects of the new normal approach in education as academic performance factors and student productivity. The peer support was strongly related to fostering relationship as a new normal effect in education. In this time of pandemic, there is a great chance that students are studying alone, maybe somewhere in their rooms so that they can avoid being distracted or disturbed by other people hence losing focus. But this will affect a student’s life for sure. It should however promote relationship with others so that the student feels he/she is not alone and someone from his/her peers can stand with him/her. Relationship according to Inclusive Education creates a sense of belonging which is vital for learning. Create an environment where students help one another and learn together. Many teenagers find school to be lonely because having classmates who do not accept them well has been linked to disengagement from class work and low grade earning among learners. Additionally, the study found out that engagement had significant association with peer support as perceived effect of new normal approach in education. Though students might feel far from others due to today’s learning format, gaining support through their fellow students really helps them keep engaged in learning thus positively

impacting on their academic lives at large. This is supported by Hakimzadeh (2016) research whose findings indicated substantial positive relationships between measures of perceived peer support, academic engagement and satisfaction with life among dyads/roommates. Both positive impacts were realized when it comes to peer support on learner participation in school activities as well as achieving contentment later on life after schooling. Moreover, timeliness had also significant relationship within peer support as factors affecting the academic performance under this kind of perception about teaching methods as hinted by the study. There is a need for us to know what our students are doing in order to establish if they are timely or not through checking them out personally. Informed about their weekly schedule even having set deadlines helps the students manage their time for tasks and activities that need to be done. Also, the study found out that communication had significant relationship on peer support as factors affecting the academic performance as perceived effects of new normal approach in education as indicated by research results. Especially that students really need peer support especially in this time of pandemic. Since all students are not close to classmates anymore and cannot have any physically contact with them, but they still can communicate through social media platforms. This is so important in providing supportive communications since it will help further understanding of a particular situation. Peer Supporter should have excellent communication skills, be an active listener and problem solver while addressing a peer's issue either formally or informally (Sarah, 2015). Also, the new normal approach in education as perceived effects of technology have a significant relationship with peer support as factors affecting the academic performance. . This is one of the best ways to maintain support for students, who can be communicated through it. Also, organization perceived effects of new normal approach in education had significant relationship with peer support as factors affecting the academic performance. An article from Stanford University that spoke to anybody and engaged in places they could learn a lot by mingling among themselves. They improve their capacity to organize learning events, cooperate with others, provide/receive feedback, and self- evaluate their own learning. Lastly, peer support as factors affecting the academic performance had also significant relationship on flexibility as perceived effects of new normal approach in education. It is common for instructors who want to use LMSs to develop curriculum that can be shared and distributed among students while monitoring their progress at the same time. Some features of a Learning Management System include threaded conversations, video conferencing, discussion forums etc. It states that higher education LMSs are used for digital instruction. This means that learners can now study at home without having to travel long distances. Likewise, teachers may keep giving lectures and teaching young people how things work. What it does provide them is the ability to remain normal despite all odds because this offers them an opportunity to maintain some kind of stability within their everyday lives

Table 29 showed that Proper Guidance was a factor, which affected students' academic performance and productivity levels. Furthermore, it indicated that there was a significant relationship with all the perceived effects of new normal approach in education. As they progress in their studies, students' desire increased autonomy as well as intellectual independence. It is possible to use online learning for personal study programs such as those comprising college-level courses. When complemented by practical exercises, real experiences and strict evaluation measures they enable faster

acquisition of knowledge by them. In exploring other areas, students may wish to try out some introductory topics before deciding on which path to follow. Thus, fostering relationships would be significant because children's emotional handling is based on what they are told and taught about themselves by teachers or parents speaking from experience. Ideally, having someone who properly guides them through words of wisdom or encouragement during new normal approach in education could lead into high productivity level and an outstanding academic performance (Diemer and Voight, 2022). Similarly proper guidance had a significant relationship with engagement among others perceived effects of new normal approach in education (Klem and Connell, 2021). This indicates that teachers who interact with students when guiding them assist them complete assignments done online or at home including corresponding activities. Our concern went beyond the learning activity to understand how talk prompts the teacher to engage students along constructive modes of participation, active and passive modes of involvement adopted by learners and thus categories stem from these modes that facilitate transfer (Graham et al., 2008). According to Chi et al. (2018), "Interactive," "Constructive," "Active" and "Passive" teaching methods were introduced throughout different course units to analyze how effectively teachers applied these principles in creating appropriate learning activities and worksheets". However, little has been done regarding how teachers solicit different forms of student engagement with their talk, which is perhaps the most common form of teacher guidance. Moreover, proper guidance had a significant relationship with time among others perceived effects of new normal approach in education (Klem and Connell, 2021). The teachers explain to students how to utilize time resources through words like objectives, instructions, format and grading rubric in each activity they post. This enables students to manage their time well and avoid wasting it. For instance, the abilities of students in managing their own times could be a function not only of what they do but also on how they think about time. Sense of urgency of the students is connected on the proper guidance performed by the teachers. Students who care less feel that they are focused on one task and ignore the need to keep track of time. They put all their efforts into an assignment when they realize it has to be done. Once pupils believe that they have some understanding about what they are doing, then higher grades can be recorded by them for themselves."

The other factor that affects the level of productivity and academic achievement for these students is the availability of family resources which assist in communication and education. They should increase opportunities for online learning as they may be less costly compared to traditional classrooms. It could also mean that students have to skip certain things so as to meet their needs. To begin with, due to having resources, this enables them think peacefully such that they can complete their programs. Moreover, if students are aware that their parents are well-off, it becomes easier for them to concentrate on their studies. Table 30 indicates that family resources like materials and technology were associated with all the perceived effects of new normal approach in education significantly influencing performance levels. When parents have enough money; therefore, providing psychological support by supervising and guiding kids' reading activities at home signifies more success at school than any other contrary situation they find themselves in thus being a positive outcome of social change taking place across generations. Some people say who is more involved in student's training or educating then what level the family income does play major role towards determining

his/her success. New normal relatedness could not omit the families' resourcefulness' influence on educational fostering relationships score. The ability of students to create a harmonious relationship with teachers and peers has been highlighted by this research. As Cerna and Pavliushchenko (2015) argue using Maslow's theory someone may reach fostering relationship (belongingness need) upon fulfilling basic necessities (basic resources). Correspondingly, having parent – student relationship would enable one know exactly where his/her family stands in terms of finance. Most parents do teach their children how they will manage their finances while still studying at college; hence making most young adults leave home during college: it is necessary for students' guardians/parents to guide these young ones since most likely they are in the hospitality industry when working from far away from home and being independent. Also, students who have close attention caring about the family resources from their parents can form good relationships. For example, they may learn how to save money or budget simply by observing how their parents talk about these topics and make financial decisions, which is a type of financial socialization. However, some of their habits might affect their children unintentionally. If for instance a student feels uneasy discussing income or debt with them for whatever reason, they will have to get any clues that are available.

No significant differences are evident in the perceived effects of new normal approach in education among respondents who were classified by sex. Therefore, students considered the "new normal" similarly whether they were males or females. Table 32 provided no significant differences in the perceived impacts of new normal approach in education when the respondents are confined to different year grades. This means no matter what grade level you are as a student, you share similar perceptions towards new ways of teaching and learning at school. The research outlines that equality is practiced at all income levels and online payment systems, assignments, discussions, etc., which are based on expertise of teachers themselves. It was suggested by Cerna (2015) that today's schools should have more academic and psychological support for their students. That will be crucial when increasing numbers of students struggle to adapt to these changes in teaching methods. While it may take some time and effort to adjust traditional assessment approaches to these new paradigms, doing so will help ensure learning quality and the validity of final exams. There was no difference between rare types of learners such as irregular or regular students because both can receive equal treatment as well as lessons However, this finding demonstrates that distance learning is helpful regardless your status/position as far as being a student is concerned. The table 34 did not show any considerable variance on how differently various locations influenced educational perception on 'new normal' conceptuality It just shows where students come from with nothing much attached to it. They agree about it equally among them all, it supports these claims as its findings provide empirical evidence supporting the idea that the development of information communication technologies (ICTs) has effectively bridged gaps between learners and training programs despite potential barriers related to distance education provision. According to this research piece by Miller (2018), cell phones become learning tools especially when those taking pictures during interviews use them as notes or videos. Among other things, these include connectivity, mobility, interactivity and creativity that make smartphones great learning tools. Thus, mobile devices have the potential to change education if a new approach to connected training is introduced. In this system, there are innumerable ways for teachers and students to

personalize their learning, upgrade their education, consult professionals or use informational resources.

Conclusions

As the study findings indicated, the following deductions were made:

1. From this, results of the research reflects the perception of high dominance students in 2nd year level, regular and residence in Laguna. The study was participated by almost equal number of male and female students, however dominated by 2nd year level due to their highest population and majority is regular students and are residence of Laguna conducted virtual class.

2. On effects of new normal approach in education conducting blended learning among schools was conducted which were rated above average from a score scale despite being first time to fully online classes. The faculty members managed to take classes beyond what they expected. The students considered communication and flexibility as the best things about new normal approach in education. For instance platform like Learning Management System individual account of Office 365 existence social media applications that gets more way for class discussion through synchronous and asynchronous schedule sessions have been aimed at bringing all learners together with standard numbers assessment measures used for seeing good sides on this recent change done by school.

3. Many aspects influence student productivity level and academic performance among them being addressed by all students' concerns and questions leads to better understanding hence high quality work production will be observed within a short span of time. Peer support as well as learning environment are two important factors affecting student's productivity level as well as academic performance therefore should be improved if we want our student's performance be excellent always. Because I never knew any place or group who could manage themselves without brotherhood love or sense but left alone needing assistance from other shoulders besides peers support is always vital for all not only some people or places.

4. Having good fostering relationship, right engagement, timeliness, communication, usage of technology in an organization is a way through which he/she can receive high grades whenever one is undertaking his/her studies under such situations caused by COVID-19 pandemic. Nothing is impossible but all these seem very difficult when it comes to leaving their comfort zones. The conduct of blended learnings of school produced an excellent point of view

for pupil to see the positive side of it and convert to outstanding academic routine.

5. Demographical status has no impact on the ability of a student from being taught and adapting to the new normal approach in education. New normal approach was delivered by schools in the broadest and most equal way possible among students. To this end, all that is necessary is ensuring fair delivery of lessons and accomplishment method.

Recommendations

Recommendations by the researchers based on the study's findings are as follows:

1. The study can be replicated using a psychographic profile of the respondents and qualitative fibre optics for all student populations from first up to fourth level in Laguna.

2. Recommendations are given towards students' adherence to time management and due-date compliance orientation. The students need to understand how they spend their time, therefore, adhering strictly to a timetable is important.

3. The parents and faculty members must allocate more time and attention to guiding students into an appropriate professional path. Besides performance outcome for students, parents may also provide teaching aids and electronic gadgets. Professors should have perspectives or opinions; restate concepts and provide additional explanations until students stay in focus with them. These will help learners have an opportunity to seek something higher in education besides maintaining productivity gains throughout the year and being able to achieve high performance targets.

4. To ensure good academic performance among them, there must be a positive perceived effect on students. Therefore, schools should monitor each student's performance. The schools could also organize webinars that can guide teachers on how they can make correct perceptions that appeal to kids as well as maintain those thus preventing learners from forgetting about the new normal of learning. In order for this to happen, there is great help when someone knows each student in relation to managing the positive perceived effect which leads good academic performance of pupils.

5. The school should continue using standards implemented during blended learnings including having equal numbers of assessment measures for different courses per semester agreed sessions of synchronous and asynchronous session use of LMS & Office 365 , so that every student can follow what were done every

day even if they are far away from his or her place like locations aside mobile device type

Compliance with Ethical Standards

This research adhered strictly to ethical principles, ensuring comprehensive compliance with all necessary protocols. Prior approvals were secured, and informed consent was obtained from all participants, who were also informed of their freedom to withdraw from the study at any time. Anonymity was maintained through the use of pseudonyms, and data was securely stored to safeguard the respondents' well-being.

Proper citations were employed to prevent plagiarism, and objectivity was upheld through formal communication and an unbiased interpretation of the findings. Additionally, no conflict of interest existed in the conduct of the study. Comprehensive data, files, and documentation were meticulously compiled to support the research, and the results were used purely for research purposes.

Trust with participants was fostered, their anonymity was protected, and potential biases were identified and mitigated. The ethical framework was further reinforced by rigorous validation strategies, including triangulation and member checking.

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INDIGENOUS CULTURE IN THE AGE OF ARTIFICIAL INTELLIGENCE: CHALLENGES AND MORAL RESPONSIBILITY

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ABSTRACT

Indigenous communities are crucial partners in ensuring successful implementation of AI technologies. This research underscores the need for collaboration between these communities, developers, and AI proponents. While AI promises significant benefits, it can only be truly effective if long-standing issues like poverty and marginalization are addressed. Furthermore, ethical considerations are paramount. Understanding the impact of technology on indigenous cultures and developing responsible AI frameworks are critical. This involves examining how people interact with technology, fostering ethical awareness in developers, and creating safeguards to protect these communities. The study itself employed qualitative research methods to explore the relationship between AI and indigenous cultures. Data analysis techniques like content analysis with deductive and inductive coding were used. The full paper will delve into the findings, implications for cultural preservation, and the ethical considerations surrounding AI programs.

Keywords: *Indigenous people, AI tools, moral responsibility, Community participation*

INTRODUCTION

The impact of artificial intelligence is evident in everything from the news recommendations on our smartphones when we wake up to the customized music playlists AI algorithms generate during our commutes, and even the autonomous vehicles speeding through city streets. It is reshaping industries, streamlining processes, and even

revolutionizing education to redefine how we teach future generations. Artificial Intelligence is particularly prominent in urban environments. Smart grids manage power distribution, facial recognition software assists law enforcement, and AI-driven chatbots provide increasingly sophisticated customer service interactions.

AI is significantly impacting numerous fields, including education. Adaptive learning management systems enable teachers to customize curricula for individual students, addressing knowledge gaps and providing targeted instruction. Automated grading systems expedite the evaluation process, while AI-powered tutors offer supplemental support. These advancements hold immense potential to create a more efficient and effective learning environment. Learning management systems that are adaptable allow teachers to tailor curricula to each student, closing knowledge gaps and providing focused instruction. While automated grading systems speed up the evaluation process, AI tutors offer extra support. These developments have great potential to establish a more productive and successful learning environment.

However, amidst this rapid advancement, a stark disparity emerges. While urban areas are experiencing a surge in AI integration, there is a notable absence of discourse regarding the application of this technology in indigenous communities, particularly those facing marginalization. These communities are at risk of lagging behind in the AI revolution due to their often limited resources and geographic isolation.

Therefore, a crucial question arises: How can we ensure these marginalized populations reap the benefits of AI? How can we leverage this powerful technology to empower indigenous communities, safeguard their cultural heritage, and bridge the digital divide? It is imperative to guarantee AI's inclusive reach as we harness its vast potential and foster progress that benefits all segments of society, not solely the affluent.

This research investigates the utilization of AI in safeguarding indigenous culture, emphasizing the significance of responsible and culturally sensitive methods. Additionally, it delves into ethical considerations and potential risks linked to AI integration, with the goal of guiding the establishment of ethical frameworks for upcoming initiatives.

Before delving into discussions, it is crucial to examine existing literature to comprehend how authors evaluate artificial intelligence concerning indigenous culture.

Augustine (2018) underscores the digital gap as a notable obstacle for indigenous Australians, who encounter economic and social hardships. Challenges such as restricted internet access, insufficient mobile phone service, and inadequate digital skills impede their participation in the digital realm and availability of vital services. Augustine advocates for tailored policies to mitigate this inequality.

Rieger (2019) stresses the crucial role of documenting native languages, especially those on the verge of extinction, for their conservation, rejuvenation, and cultural heritage safeguarding through community-led endeavors. Rieger highlights the value of audio and video recordings in language documentation, offering a culturally

sensitive, accurate, and community-specific archive for linguistic research, education, and language revitalization. Moreover, Rieger accentuates the importance of digital preservation in language recording, asserting that digital repositories guarantee the enduring accessibility of language data for scholars, learners, and communities. Rieger underscores the significance of documenting indigenous languages for language revitalization, literacy campaigns, and cultural conservation, connecting it to human rights.

Whyte (2020) argues that the ethics of indigenous peoples transcend Western moral norms, embodying their distinct cultural, spiritual, and philosophical values developed over millennia. These ethics, grounded in a profound bond with the earth, play a vital role in the well-being and sustainability of indigenous societies. Central to indigenous ethics are principles of reciprocity, reverence, and responsibility, acknowledging the complex relationship between humans and nature. Indigenous communities hold their ancestral lands in high regard, assuming the duty of safeguarding them and demonstrating respect for all beings, underscoring their mutual reliance and inherent value. Embracing reciprocal connections with animals and plants, native communities uphold their traditions, language, and way of life while rejecting imperial power dynamics in favor of collaboration, partnership, and mutual respect.

Barceló (2016) highlights the significance of decolonization in redefining the interaction between indigenous communities and dominant societies, stressing the importance of giving precedence to indigenous viewpoints in AI advancement due to their distinctive cultural insights. The author underscores the necessity for settler societies to introspect and critically evaluate for decolonization, acknowledging the repercussions of colonialism and AI innovations. Barceló proposes that AI has the potential to foster collaboration, mutual exchange, and respect, offering support for decolonization efforts by amplifying indigenous perspectives, safeguarding languages, and promoting research rooted in community engagement.

Weckert and Bayod (2023) advocate for a shift towards questioning the prevailing values of progress, profitability, efficiency, materialism, and other societal norms while exploring alternative values in the context of technological advancements. They stress the importance of prioritizing care, not only for the environment and one another but also for the non-material or spiritual dimensions within ourselves and external elements, such as artifacts. By increasing awareness of existing values and acknowledging alternative perspectives, there is potential to reshape the ethical considerations surrounding technology.

Moreover, Abdilla's study (2018) discusses how aboriginal social cohesion, well-being, and environmental sustainability stem from Aboriginal governance systems, influencing advancements in science and technology. The study emphasizes the necessity of introducing a fresh approach to ethical technology to tackle a fragmented political, economic, and social structure, guided by Indigenous design principles and governance. Conversely, it suggests that Indigenous communities and organizations should collaborate with developers and platforms to produce respectful and authentic content, guaranteeing the representation of Indigenous voices in digital spheres and overseeing the ethical promotion of artificial intelligence.

Overall, the review of relevant literature on AI and indigenous education highlights both the advantages and disadvantages of implementing AI in indigenous communities.

As to the rationale of the study, it explores the potential of AI in indigenous communities, focusing on language preservation, environmental sustainability, and cultural heritage management. It aims to bridge the gap by implementing AI to document, analyze, and leverage traditional knowledge for future generations. AI can enhance indigenous communities' food security, land management, and environmental protection by monitoring resources, predicting climate change, and optimizing agricultural practices, including language revitalization. Limited technology access and internet access hinder AI adoption in indigenous communities, causing concerns about data sovereignty and potential misuse of sensitive cultural information. Collaboration with indigenous communities is needed.

The exploration of AI applications within indigenous communities is pertinent, given prevalent challenges such as climate change, language endangerment, and resource management. Early investigation stands to benefit from technological progress, enhancing the inclusivity and cultural sensitivity of AI. Despite advancements, the digital gap persists as a notable hindrance. As worldwide internet accessibility and mobile technology usage rise, there is an opportunity to equip indigenous groups with AI resources, potentially empowering them. Involving these communities in dialogues can foster the development of culturally relevant solutions. It is imperative to address ethical concerns promptly, including the preservation of cultural heritage and privacy considerations.

Research Questions

The argument presented in the paper is that for AI to effectively tackle challenges such as marginalization, poverty, and inequality, it necessitates active engagement, cooperation, and the establishment of ethical guidelines, particularly within indigenous communities. Ethical obligations encompass closing the digital gap, empowering indigenous groups through education, preserving their culture, and fostering self-determination, as well as addressing the digital divide through infrastructure enhancements and digital literacy initiatives. This research underscores the capability of AI to advance societal development, especially within indigenous populations, by addressing ethical dilemmas and confronting existing problems to secure their empowerment in the digital era.

Specific Questions:

Expanding on the problem statement, these research inquiries delve into the potential advantages and hurdles of AI for indigenous communities, underscoring the imperative to tackle societal issues:

1. In what ways can AI effectively address the distinct needs and obstacles encountered by indigenous communities?
2. What obstacles exist in the implementation of AI within indigenous communities?
3. How can the design and deployment of AI be tailored to empower indigenous

groups, alleviate social disparities, and guarantee their authority and oversight of their data?
4. What approaches and collaborations can be forged to bridge the digital gap and ensure fair access to the benefits of AI for indigenous communities, taking into account the prevailing social inequities?

METHODOLOGY

This study uses a qualitative research design to explore the relationship between artificial intelligence and indigenous culture, utilizing online databases and library resources to access scholarly articles and relevant books and publications. The data will be analyzed using content analysis, a qualitative research method, to identify key themes, patterns, and insights from a diverse range of sources. The data will be analyzed using deductive and inductive coding approaches, identifying common themes related to AI's impact on indigenous culture. The analysis will discuss findings, examining their implications for indigenous culture preservation, ethical considerations, and future AI initiatives in indigenous communities, contributing to existing knowledge and understanding.

The scope of the study investigates how artificial intelligence (AI) impacts indigenous communities, focusing on how societal challenges such as marginalization and poverty could complicate AI implementation. The study will explore the potential benefits and drawbacks of AI in crucial areas for indigenous communities, such as resource management, environmental monitoring, and language preservation. Additionally, it will examine how existing socioeconomic inequalities could pose barriers to equitable access to and utilization of AI technologies.

Owing to the wide range of indigenous cultures found throughout the world, the study may concentrate on a particular area or group of indigenous people. This restricts the findings' applicability to all indigenous populations. There may not be much information available on the use of AI in indigenous communities. The analysis may be constrained by the study's reliance on previously published work, community member interviews, and pertinent stakeholder input. AI is a field that is fast developing. The study will concentrate on the current situation and any possible immediate ramifications, though it may be difficult to forecast long-term effects.

RESULTS

In delving into the intersection of AI technology with indigenous culture, it is essential to initially tackle the enduring environmental issues faced by indigenous populations. These challenges encompass ensuring food security, advancing sustainable agriculture, monitoring the environment to protect biodiversity and wildlife, promoting healthcare and well-being, preserving language and culture, and overseeing data governance (Dimock, 2022). Indigenous communities often grapple with issues related to agricultural productivity and sustainable farming practices.

Considering these challenges, it could be contended that indigenous tribes necessitate scientific support to tackle their ongoing issues. Undeniably, AI holds the promise of offering substantial scientific assistance. AI, functioning as both a science and technology, has facilitated the development of systems capable of delivering up-to-the-minute data on weather patterns, soil conditions, crop vitality, and land utilization (Alshari, 2023). Consequently, it holds the potential to aid indigenous communities in attaining sustainable agriculture and ensuring food security. Scientific information provided by AI can greatly support farmers in making well-informed decisions regarding food production.

Moreover, artificial intelligence (AI) can assist in overseeing and managing resources. Equipped with scientific tools such as remote sensing data, AI utilizes machine learning techniques to aid indigenous communities in monitoring alterations within their territories. This approach facilitates the prompt identification of environmental hazards across a wide area, thereby contributing to the preservation of endangered species. AI can significantly contribute by offering scientific early warning systems for natural calamities like wildfires, floods, and landslides (Kumari, 2013). Additionally, AI encompasses advanced scientific instruments that can enhance education on climate change. It also has the capacity to detect deforestation, track wildlife populations, and support sustainable development.

Additionally, artificial intelligence technologies encompass processing algorithms that can be utilized to create language learning applications, automated translation tools, and speech recognition systems. These applications hold the potential to assist in language documentation, transcription, interpretation, and preservation. This idea aligns with Rieger's earlier literature study, where he emphasizes the vital role of documenting native languages, particularly those facing extinction, for their preservation, revitalization, and safeguarding of cultural heritage through community-led initiatives. Artificial intelligence (AI) can aid in the identification, preservation, and organization of cultural artifacts, traditional artworks, and historical documents (Hussein, 2023). It can also formulate data governance frameworks and virtual environments that offer immersive encounters. Through the utilization of such technologies, cultural practices, narratives, and customs can be effectively conserved (Das, 2022). Furthermore, the healthcare sector can be efficiently addressed through the utilization of telemedicine platforms. Machine learning algorithms can enhance the efficiency of healthcare services by analyzing health data for patterns and trends. Consequently, this facilitates remote diagnosis and treatment, bridging healthcare professionals with remote communities.

Recognizing the significance of AI technology and the pivotal role it plays in supporting indigenous communities is commendable. AI can aid indigenous groups in tackling challenges related to language preservation, safeguarding cultural heritage, monitoring the environment, and managing resources by offering diverse insights, analyses, and decision-making capabilities (Maggie, 2023). Linguists and community members play crucial roles in training and reviewing AI models to ensure accurate data and appropriate interpretation. Indigenous leaders should view artificial intelligence as a valuable tool, validating models and aligning technology with their cultural nuances and linguistic intricacies. The active involvement of indigenous authorities in adopting AI technology is essential for the protection of indigenous culture. AI contributes to and

enhances initiatives like gathering and digitizing linguistic data through community-driven efforts, partnerships, and collaborations with preservation organizations.

To effectively showcase the assistance provided by AI in indigenous communities, there is an ongoing initiative to explore and incorporate AI technologies in indigenous populations in nations like Australia, New Zealand, Canada, Brazil, and the United States to bolster existing AI initiatives. These regions are in the process of creating initiatives and schemes that utilize AI to partner with local communities to address their needs. The government has committed to leveraging AI and data-driven technology to empower indigenous individuals and guarantee their authority and ownership of data (Genner & UNESCO, 2023). Nevertheless, it is important to acknowledge that the effectiveness of these programs varies depending on the culture.

AI presents scientific solutions that could offer advantages to indigenous communities. However, it is crucial to recognize that AI cannot function autonomously or replace the human element that is vital to these societies. The primary objective of AI is to assist and augment the efforts of local communities, acting as a tool rather than a replacement. Due to its mechanized nature, AI has limitations in addressing the intricate issues faced by indigenous peoples. It cannot assume the decision-making authority of indigenous leaders. While the appealing benefits of scientific support from AI may prompt utilization of this technology, prior research by Abdilla (2018) has identified numerous challenges that could hinder the success of AI implementation. These challenges include issues such as data sovereignty and control, inadequate engagement, conflicts in values, biased and inaccurate data representation, cultural misappropriation, and misinterpretation.

It can be contended that indigenous communities encounter significantly greater challenges than what AI proposes. Some of these issues pertain to remote and underserved areas with minimal digital infrastructure, unreliable internet connectivity or computing resources, and scarce digital data. Additionally, AI limitations include the necessity to train algorithms across a wide array of language variations to accurately detect indigenous languages and dialects, alongside issues of data precision and fluctuations in language use. Another concern is with speech recognition, as endangered indigenous languages may lack sufficient digital speech data for training models that precisely capture and transcribe their distinct phonetic and phonological attributes (Jahanke, 2022). This aligns with Augustine's prior research (2018) where she highlights AI's spotlight on the digital divide as a significant barrier for indigenous communities facing economic and social adversities. Challenges such as limited internet accessibility, inadequate mobile phone coverage, and deficient digital competencies hinder their involvement in the digital sphere and access to essential services. Augustine advocates for customized policies to alleviate this inequality.

There are still unanswered questions, particularly concerning data governance. It is crucial to emphasize that artificial intelligence does not imply a lack of free will in computers. Instead, the focus is on who governs the technology, what data is shared and where, and the narratives incorporated by AI developers into their products. If AI is to be implemented, it is imperative for AI developers to provide accurate data systematically that is relevant to indigenous communities. However, due to the frequent marginalization

of indigenous peoples, data collected from them may be at risk of external control. Those who control the data may wield power over and suppress indigenous populations. The second ethical consideration involves recognizing that creativity, output, and innovation are inherent human abilities. Consequently, the extensive dataset used to train AI systems originates from human creativity and knowledge. Humans possess an innate capacity for innovation. People and culture hold more significance than artificial intelligence (AI) systems, as humans generated the vast amounts of data utilized in predictive and replicative robots. Therefore, cultural and human ethics surpass the importance of technological tools (Cataleta, 2021).

The complexity lies in the deployment of AI and determining who wields control, presenting a challenge greater than the technology itself. Regardless of the advancements in new technologies, such as artificial intelligence, the foundational ethical principles of upholding human dignity must not be compromised. Therefore, it is imperative to uphold standards regarding informed consent, ownership, security, and data privacy of the primary stakeholders - indigenous communities. Observing cultural norms, values, and preserving cultural assets is an essential ethical imperative (Lewis, 2023). These ideas echo Whyte's earlier research, where he emphasized the deep reverence indigenous communities hold for their ancestral lands, assuming the responsibility of protecting them and showing respect for all entities, highlighting their interconnectedness and intrinsic worth. By nurturing reciprocal relationships with animals and plants, native communities maintain their customs, language, and way of life while eschewing hierarchical power structures in favor of cooperation, collaboration, and mutual respect.

The concern regarding the possibility of corporate control within the AI industry could lead to the exclusion and infringement upon the rights of indigenous communities to engage with the data processed by AI, including their input as creators, sources, and contributors. Moreover, in situations where indigenous populations lack ownership of their resources, their cultural information may be exploited. In scenarios where indigenous groups face unwarranted external dominance, significant cultural practices, symbols, and artistic expressions could be vulnerable to appropriation and commercialization. This could ultimately lead to the degradation and loss of their ancestral territories and natural legacy (Turk, 1999). In addition, the persistent marginalization and exclusion of indigenous communities represent a systemic challenge that hinders their engagement in cultural dialogues. Due to their economic hardships and neglect, they face a lack of data autonomy and authority. Additionally, there exists an ethical dilemma between the predominant actors in AI - developers and capitalists - who prioritize financial gain over the preservation of culture. The presence of biased and inequitable portrayals in available data fails to accurately capture the intricate cultural nuances and values (Ahmed, 2011).

DISCUSSION

Indigenous communities persist in grappling with unresolved challenges. These encompass ongoing discrimination, injustice, and exploitation of their agricultural territories and resources by a select few. Additionally, there is a brazen endeavor by those asserting cultural superiority to appropriate their ancestral knowledge. Instead of being

advantageous, artificial intelligence could emerge as a disruptive influence, offering no support to indigenous groups. Moreover, without due consideration, these individuals will encounter significant hurdles, including exclusion from mainstream society, stereotypes, and bias when accessing social services.

Addressing these foundational challenges is paramount, as progress in Artificial Intelligence (AI) would prove futile without their proper resolution. It can be persuasively argued that for AI technology to effectively benefit indigenous communities, age-old fundamental issues like marginalization, poverty, lack of autonomy, rights violations, oppression, and exploitation must be tackled. This remains true despite the benefits and collaborative opportunities that AI offers to indigenous societies. As of now, these issues remain inadequately resolved.

We cannot embrace technology while these issues persist. Artificial intelligence (AI) on its own is insufficient to tackle the intricate and deeply rooted challenges faced by indigenous communities, including marginalization, poverty, lack of autonomy, and exploitation. Comprehensive strategies are necessary to bring about significant improvements. AI ought to be seen as a resource that can be effectively utilized once these underlying issues have been dealt with, rather than a panacea.

By addressing the underlying causes of poverty, marginalization, exploitation, and deprivation, and establishing ethical frameworks that prioritize community engagement, we can create a more welcoming environment for technology and empower indigenous communities. Within this broader context, AI can be harnessed as a potent tool to support indigenous tribes in their pursuit of autonomy (Chandu, 2020). While it may be challenging to introduce AI for indigenous peoples, it is not insurmountable, albeit extremely complex due to the need to address deep-rooted cultural issues. The task of overcoming poverty and marginalization is a long-term endeavor. Nevertheless, this reality does not absolve us from the responsibility of cultivating moral principles and ethical standards based on our evolving relationship with technology.

It is crucial to delve into our interactions with technology, cultivate ethical awareness, and establish moral guidelines and standards that prioritize community engagement and empower indigenous communities. Analyzing our engagement with technology and enhancing ethical awareness are essential. This involves a thorough assessment of how technology either preserves or exacerbates existing inequalities and power imbalances. Utilizing technology to fulfill the needs and uphold the values of indigenous populations necessitates a comprehensive understanding of the ethical considerations and possible outcomes associated with the integration of AI.

Establishing an ethical structure that places emphasis on empowering indigenous communities and engaging them in communal activities involves, fundamentally, including these individuals in decision-making procedures, honoring their cultural practices and heritage, and acknowledging their entitlement to self-governance. Collaborating with indigenous communities to formulate ethical guidelines that align with their cultural environment is crucial (Maitra, 2020).

To comprehend the connection between AI technology and indigenous

communities, it is essential to reassess our fundamental understanding of human nature. Naussbaum (2000) argues that our regard for humanity demands advocating for social and cultural rights that are essential for the welfare of individuals and their cultures. Being human entails creating an environment that fosters cultural variety and enables cultures to thrive by offering suitable circumstances and opportunities. Conversely, Sen (2006) challenges the idea of labeling individuals and supports a more inclusive perspective that values cultural diversity. Tuck (2012), on the other hand, calls for the removal of biases, prejudices, and stereotypes directed at underprivileged people.

In terms of the ethical considerations surrounding the utilization of AI, especially concerning marginalized indigenous communities, Kant's categorical imperative (1785) underscores the crucial concept of the complete and absolute autonomy of the human individual, which acts as the focal point for reason, will, freedom, and action. It is imperative that individuals are not viewed merely as tools to achieve specific ends. Treating individuals as ends in themselves, rather than as a means to advance technology for the benefit of others, is essential. The autonomy of a human being in determining what is best for their community, including whether to embrace technology for their culture, is inherent in their autonomy. The capacity of marginalized indigenous communities to make decisions for themselves is fundamental. Reassessing civilizations is necessary to better address human diversity. These diverse perspectives on human nature can serve as the foundation for ethical guidelines when introducing new technologies to indigenous cultures.

It is suggested that integrating indigenous peoples' rights to sovereignty and self-governance into the ethical framework and principles is essential for the effective implementation of AI technology. This involves empowering individuals to possess, manage, and decide on the utilization, storage, deployment, and accessibility of their data, as well as determining who benefits from it. Only then can AI technology truly be beneficial. Community engagement is crucial as AI has limitations in understanding the breadth of languages and dialects. To ensure cultural alignment, language speakers, linguists, and cultural specialists should engage in data collection, model training, and system assessment. Community involvement facilitates the customization and adjustment of AI preservation systems by providing feedback on the tool's efficacy.

The ethical dilemma arises from the varying attitudes of Indigenous communities towards AI technology, with some embracing it while others remain cautious due to their deep connections to nature and traditional practices. Disrupting or severing ties with indigenous culture is deemed inappropriate as it symbolizes marginalization and colonization. To uphold equity and mutual respect, those overseeing AI must honor the cultural context of indigenous peoples while aligning their technological principles appropriately. Collaboration, cultural diversity, and addressing power differentials are all integral aspects of ethical AI implementation. It is imperative for indigenous populations to be actively involved in developing and validating artificial intelligence models. Indigenous communities possess invaluable ancestral knowledge and a profound understanding of their own goals and necessities. It is essential to introduce AI into these communities and foster a cooperative environment that upholds ethical standards. Decisions should be collectively made regarding data selection and cultural alignment.

The integration of AI calls for collaboration and engagement with indigenous communities (Maitra, 2020). Technological assistance plays a crucial role in preserving the environment and biodiversity, while collaboration is essential for AI to effectively adapt to diverse cultural requirements and limitations. Indigenous perspectives and principles can shape the design and integration of AI systems, ensuring they align with the community's needs, aspirations, and objectives. This collaborative approach promotes mutual respect and bolsters indigenous populations, leading to more sustainable solutions.

AI developers need to recognize the significance of community-led initiatives while respecting cultural and ethical boundaries to preserve the unique cultural structures, knowledge systems, and lifestyles of indigenous societies (Indigenous Peoples Rights in the Philippines, 2008). This viewpoint is consistent with Whyte's (2020) research, which highlights the value of fostering reciprocal relationships with animals and plants, as native communities uphold their traditions, language, and way of life, opting for collaboration, partnership, and mutual respect over imperial power dynamics. It also echoes the findings of Weckert and Bayod (2030), emphasizing the importance of prioritizing care not only for the environment and others but also for non-material or spiritual aspects within ourselves and external elements like artifacts. By enhancing awareness of existing values and recognizing alternative perspectives, there is an opportunity to reshape the ethical considerations surrounding technology. .

Lastly, the philosopher Heidegger (2013) highlights that technology extends beyond mere machines and gadgets; it serves as a tool for revealing and uncovering the world. It possesses the ability to influence our minds, shape our perceptions, and alter our understanding of reality. Yet, when technology is reduced to a mere "standing reserve," it diminishes everything to a resource for manipulation and control, ultimately impacting humans negatively. By using technology to reveal objects, we are hindered from fully experiencing Being, comprehending ourselves, and embracing authentic existence. It is essential to perceive things for their intrinsic essence, not solely for their utility. Heidegger suggests a retreat from a technological way of existence toward a more contemplative relationship with the world. To implement his perspective, we must reevaluate our interaction with technology, refraining from using it as a tool for dominance or manipulation over others, thus respecting their rights, autonomy, and sovereignty. Heidegger advocated for liberation and a radical shift in our outlook on technology, emphasizing that such a transformation is necessary for us to reconnect with our true selves. He introduced the term "Letting-be" to promote the idea of viewing technology not as a means to an end but as a pathway to unveiling new possibilities for human flourishing. This change in perspective demands a reassessment of our technological relationship, along with a commitment to a considerate, mindful, and empathetic approach to humanity.

In summary, this study has outlined a way in which AI can be applied to indigenous communities, particularly those who are marginalized. It is evident that there are potential benefits of AI, especially in addressing environmental issues through its advanced technology and in establishing a systematic approach to documenting their narratives and language. However, the reality is that more serious and fundamental issues, like enduring poverty, persist in marginalized communities. Additionally, there are ethical concerns

regarding autonomy and community involvement in the implementation of AI. Ultimately, what is crucial is to be mindful of our relationship with technology as well as our ethical duty to construct frameworks that enable community participation.

Conclusions

In conclusion, while AI holds great promise in aiding indigenous communities with environmental challenges and language preservation through its advanced systems, there is a deeper layer to consider. Enduring issues such as poverty, exclusion, and injustices continue to plague marginalized communities, highlighting the necessity to address these long-standing fundamental problems before implementing AI initiatives. Furthermore, the development of ethical frameworks is crucial to safeguard the rights and autonomy of indigenous peoples, determining responsible control and management of AI implementation. It is imperative to actively involve indigenous communities as key stakeholders in the AI implementation process to ensure their voices are heard and their interests are protected.

Recommendations

It is recommended that future research focus on localized settings, such as the Philippines, to validate and test the challenges faced by indigenous cultures in relation to artificial intelligence (AI). Further studies should explore establishing a consultation process between AI stakeholders and indigenous communities to empower them to control scientific technology.

Research should develop inclusive, culturally sensitive consultation frameworks for AI development, emphasizing meaningful engagement, informed consent, and community ownership throughout the entire AI lifecycle.

Research should focus on capacity-building in indigenous communities to effectively engage with AI technologies, promoting digital literacy, understanding AI systems, and enabling informed decision-making. Interdisciplinary research collaborations between indigenous studies, computer science, and ethics are crucial for a holistic approach to AI technology development, addressing ethical, cultural, and social implications.

Research on consultation processes and empowering indigenous communities in AI can promote equitable and collaborative technology development, aligning scientific advancements with their cultural values and aspirations.

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Compliance with Ethical Standards

I place the utmost importance on the integrity of my writing as a researcher. This idea goes beyond just not plagiarizing; it also includes a dedication to accurate and open attribution of ideas and sources. I have used plagiarism detection software, particularly Turnitin, to make sure that all of the content is properly cited and attributed to its original source in order to ensure the originality of my work. This method protects against any accidental or inadvertent failures to acknowledge information that has been borrowed.

Additionally, I have only used artificial intelligence (AI) to help with grammar checks. This guarantees that my research findings will be communicated clearly in the final paper, which will also be well-presented and free of technical errors. It is imperative to stress, though, that no AI tools were employed for content creation or paraphrase. This paper contains only my own thoughts and analyses, and every outside source is properly referenced using an accepted style guide. I hope to contribute to a scholarly atmosphere that respects intellectual integrity and encourages the expansion of knowledge via precise and open research methods by keeping these ethical standards.

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LEVEL OF AWARENESS OF CHILDBEARING CARE AMONG MOTHERS IN SELECTED REMOTE COMMUNITIES IN GENERAL SANTOS CITY

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ABSTRACT

This descriptive study determined the level of awareness of childbearing care among mothers in six (6) selected remote communities in General Santos City. A validated self-made Childbearing Care Awareness Questionnaire Tool was used to determine the demographic profile and the level of awareness of childbearing care among eighteen (18) pregnant mothers who were selected through quota sampling. The study showed that most of the respondents were aged 18-25 years old, married, had 1-2 children, with monthly income of below 5,000, had reached a high school level of education, and with hypertension in the health history. The findings revealed that most respondents are moderately aware of various aspects of childbearing care. It revealed that the highest awareness of mothers was on nutrition and the lowest was in terms of immunization. Therefore, this study recommends establishing a pregnancy care educational program to increase the awareness of mothers on the essentials of childbearing care. This study also recommends further research to investigate the effects of demographic profiles on the level of awareness of mothers. Further research is also recommended to expand the locale of the study to other remote communities to explore different approaches to investigate the extent of low awareness of mothers on childbearing care practices.

Keywords: *Awareness, Childbearing Care, Nutrition, Immunization, Pregnancy Care Educational Program*

INTRODUCTION

Childbearing care is one of the most important components of health care for every woman of reproductive age (Lu and Halfon, 2013). It is a form of care that provides a series of interventions before conception intending to identify and modify biomedical, behavioral, and psychosocial risks to women's health or pregnancy outcomes through prevention and management (Moos, 2010). Childbearing care includes education, screening, counseling, treatment, monitoring, and promoting the well-being of the mother and fetus (Shafqat, Fayaz, Rahim, & Saima, 2105). It is based on providing women and their families with appropriate advice and information that may help them to be in good health during pregnancy, delivery, and postnatal recovery. Also, providing mothers with appropriate supplements such as folic acid and vitamins that are needed during pregnancy (Rajiv, 2015).

Good caring during pregnancy is so important for the health of the mother and the development of the unborn baby, it links the woman and her family with a formal health system which will increase the chance of using a skilled attendant, particularly at birth, and contributes to good health through the life cycle. At any healthcare delivery system, childbearing care is considered a backbone of obstetrical services, it is substantial for the health of pregnant women and it is how maternal and fetal complications are determined and managed (Rajiv, 2015). Roughly, a thousand mothers all around the world die daily due to pregnancy and delivery-related causes (Anjum, Noor, & Bano, 2015) which resemble 25% of maternal deaths according to the World Health Organization.

Pregnancy-related deaths have been increasing in the United States. Maternal mortality ratios in the United States had increased about 3% from 2000-2015. Moreover, women in rural and underserved communities face additional risks and challenges that could lead to higher rates of maternal mortality and other severe health complications (American Pregnancy Association, 2015). According to Centers for Disease Control and Prevention (2015), in most rural counties which includes areas with populations of less than 50,000 residents, the maternal mortality ratio was 23.8 deaths per 100,000 live births compared to 14.6 in large metropolitan counties.

According to the estimate made in 2013 by the National Demographic Health Survey, maternal deaths account for 32% of all deaths among women between the age group of 15–49 years. The lifetime risk indicates that 1 in 30 women will die as a result of pregnancy or childbirth (National Population Commission, 2013). Most of these complications predate pregnancy and get worsened during pregnancy, thereby causing a lot of pregnancy-related morbidities or mortality. No wonder 4 out of every 10 women have been reported to have unplanned pregnancies, therefore making it difficult to address any premorbid condition or lifestyle that can affect the outcome of that pregnancy (Singh, Sedgh, Hussain, 2010)

Research Questions

This study generally aims to determine the level of awareness of mothers in terms of childbearing care. Specifically, it seeks to answer the following questions:

1. What is the demographic profile of mothers in terms of the following:
   1.1 Age;
   1.2 Civil status;
   1.3 Number of children;
   1.4 Monthly income;
   1.5 Educational attainment;
   1.6 Health history?

2. What is the level of awareness of mothers on childbearing care in terms of the following:
   2.1 Nutrition;
   2.2 Prenatal care;
   2.3 Lifestyle practices;
   2.4 Immunization?

METHODOLOGY

This study was conducted in six remote communities in General Santos City comprising three puroks in Barangay Upper Labay and another three puroks in Barangay Olympog. The respondents were eighteen pregnant mothers who were selected through quota sampling. The demographic profile and mothers' awareness of childbearing care were determined using a self-made Childbearing Care Awareness Questionnaire Tool validated by three academicians. The tool also underwent pilot testing to ensure the instrument was appropriate for the target population. The data-gathering procedures started by obtaining permission from the Barangay Captains of Barangay Upper Labay and Barangay Olympog. After this, the researcher sought assistance from the Barangay Health Workers in determining pregnant mothers then informed consents were provided to ensure that the purpose, risks, and benefits of participating in the study were thoroughly explained. After obtaining the needed information, descriptive data analysis was employed to provide interpretation and meanings to the gathered information about the profile of respondents and their awareness of childbearing care. This study was limited only to determining awareness of various aspects of childbearing care such as nutrition, prenatal care, lifestyle practices, and immunization while other aspects such as family planning and delivery were not included. As recommended by the local government of General Santos City, the study was conducted only in two barangays with three puroks each due to the ease of access to the place and the extent of assistance that could be provided.

RESULTS

Table 1. ***Demographic Profile of Respondents***

Variables	N=18	Percentage
Age		
18-25 years old	13	72.2
26-30 years old	4	22.2
31-35 years old	1	5.6
Civil Status		
Single	3	16.7
Married	11	61.1
Cohabiting	0	0
Widowed	4	22.2
Number of Children		
1-2	9	50.0
3-5	7	38.9
6-8	2	11.1
9 and above	0	0
Monthly Income		
Below 5,000	11	61.1
5,001-10,000	5	27.8
10,001 and above	2	11.1
Educational Attainment		
Elementary Level	4	22.2
Elementary Graduate	3	16.7
High School Level	6	33.2
High School Graduate	1	5.6
College Level	3	16.7
College Graduate	1	5.6
Health History		
Hypertension	8	44.4
Diabetes Mellitus	4	22.2
Tuberculosis	5	27.8
Kidney Disease	1	5.6

Table 2. ***Level of Awareness of Childbearing Care of Mothers***

Variables	Mean	Interpretation
Aspects of Childbearing Care		
Nutrition	3.87	Moderate
Prenatal care	3.10	Moderate
Lifestyle Practices	3.42	Moderate
Immunization	2.95	Moderate
Over-all Mean	3.10	Moderate

DISCUSSION

Table 1 presents the demographic profile of respondents. It revealed that most of the respondents were aged 18-25 years old, married, had 1-2 children, with monthly income of below 5,000, had reached a high school level of education, and with hypertension in the health history.

Table 2 depicts the level of awareness of childbearing care. It showed that most respondents are moderately aware of various aspects of childbearing care which obtained an overall mean of 3.10. It revealed that nutrition obtained the highest mean of 3.87 which was interpreted as moderately aware while immunization obtained the lowest mean of 2.95 which was interpreted as moderately aware.

Adequate nutrition is crucial for maternal and child health, both before and during pregnancy. Malnutrition in pregnancy is associated with nutrient deficiency-related complications and outcomes for both mother and child (McCarthy, Murray, & Kiely, 2022). There is also growing evidence that various adverse outcomes are more readily prevented by beginning interventions before conception (Mahajan, Singh, & Shah,2014). However, awareness of the importance of preconception health and nutrition appears low, resulting in missed opportunities to support proper growth and development (Mitchell, Levis, & Prue, 2012).

Immunization of pregnant women allows for delivering protective antibodies to the fetus and protection to have received childhood immunizations at the time of exposure. In the absence of maternally derived pathogen-antigen-specific antibodies, infants remain vulnerable to severe disease until they have established an adequate protective antibody response (Gessner, Katz, Johnson, Skidmore, Knight, & Bhat, 2015). Enhancing confidence in immunization by increasing the evidence-base for safety during pregnancy, and access by incorporating immunization into standard models of antenatal care is likely to improve uptake (Kourtis, Read, & Jamieson, 2014).

Knowledge and healthy childbearing practices during pregnancy are crucial aspects for mothers to possess to have a successful outcome of delivery. Childbearing care is a useful practice for lowering infant and maternal mortality. Therefore, the present study was planned to identify the awareness regarding childbearing care among pregnant women. Pregnancy care is an effective tool to reduce both infant and maternal mortality and morbidity. The principle of childbearing care is to provide advice, education, reassurance, and support to address and treat the problems associated with childbearing and to provide effective screening during pregnancy.

Conclusions

This study indicates that most pregnant mothers in remote communities showed moderate awareness of childbearing care which could affect maternal and child health outcomes as well as the health decisions for a healthy pregnancy. Awareness of these

aspects of childbearing care is necessary for a successful outcome of pregnancy, preventing possible complications during pregnancy and after delivery, and subsequently maternal and child mortality and morbidity.

Recommendations

This study recommends establishing a pregnancy care educational program to increase the awareness of mothers on the necessary childbearing care. This program aims to prepare expectant women and their partners or support persons for essential childbirth, breastfeeding, and infant care. The offering of pregnancy educational programs constitutes a major aspect of health promotion within public health addressing poor awareness of mothers in necessary practices of bearing a child. This study also recommends further research to investigate the effects of demographic profiles on the level of awareness of mothers on childbearing care. Further research is also recommended to expand the locale of study to other remote communities to explore or apply different approaches to investigate the extent of low awareness of mothers on childbearing care practices.

Compliance with Ethical Standards

This research study followed a standard ethical guideline. The participation of respondents was voluntary. They were to opt to dismiss themselves from the study at any point whenever they felt uncomfortable. Their participation was protected from harm. The dignity and well-being of respondents were also protected. The research data remained confidential throughout the study, and the rights of respondents were protected while ensuring scientific or academic integrity. There was no bias in the interpretation of the results and were used for research purposes.

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LIVED EXPERIENCES OF CENTENNIAL TEACHERS IN THE EDUCATIONAL MODERNIZATION: A PHENOMENOLOGICAL ANALYSIS IN DEPED BAGUMBAYAN DISTRICT III

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ABSTRACT

The process of facilitating learning or the acquisition of knowledge, skills, values, beliefs, and habits is one of the aims of education. This study aimed to shed light on the lived experiences, perspectives, and coping strategies of centennial teachers in Bagumbayan District III for the School Year 2023-2024 in adapting to changes of modernization. The challenges defined were the balancing act between the traditional way of teaching and the needs of modernization. The researcher used the purposive sampling technique and employed an in-depth semi-structured interview. Focus Group Discussion (FGD) guide questions served as the primary investigative tool. The interviews focused on gaining a detailed understanding of the lived experiences of centennial teachers in educational modernization. Further, thematic analysis was used to find out more about the centennial teachers' views, knowledge, experiences, or values relative to the topic investigated. Lastly, ethical considerations were given prime importance to ensure that no violations were committed against data privacy and other statutory and regulatory requirements set forth when qualitative research design is employed. The findings of the study revealed that Centennial teachers in DepEd Bagumbayan District perceive educational modernization as a paradigm shift towards integrating advanced technologies and innovative pedagogical methods into their teaching contexts. They describe their experiences of incorporating modern technological tools and pedagogical approaches as initially challenging yet ultimately transformative. They encounter challenges such as inadequate infrastructure, resistance to change among stakeholders,

and the need for continuous training and support. To address these challenges, they implement strategies like advocating for resource allocation, fostering a culture of openness to innovation, and participating in professional learning communities to share knowledge and expertise. Centennial teachers perceive that educational modernization has positively impacted student learning outcomes by enhancing engagement, fostering critical thinking skills, and improving academic performance.

Keywords: *Centennial Teachers, Lived Experiences, Educational Modernization, Phenomenology*

INTRODUCTION

In an era characterized by rapid technological advancements and evolving educational paradigms, educational modernization stands as a cornerstone in transforming teaching and learning experiences. Teachers, as essential catalysts in this transformation, play a pivotal role in the integration and adaptation to these changes. The educational landscape has undergone significant shifts over recent decades, primarily driven by technological advancements, curriculum reforms, and changing pedagogical approaches. These changes have brought about a paradigm shift in educational institutions, demanding teachers to adapt and incorporate modern methodologies into their teaching practices.

In a study conducted by Smith (2019) in the United States, centennial teachers reported feeling both excited and apprehensive about educational modernization efforts. They expressed concerns about the rapid pace of technological change and the need for adequate training and support to effectively integrate new technologies into their teaching practices. Similarly, a study by Li and Zhang (2020) in China found that centennial teachers faced challenges related to curriculum reform and the pressure to meet standardized testing requirements while also incorporating innovative teaching methods.

Despite the growing body of research on educational modernization, there are several research gaps that warrant further exploration. One such gap is the need to examine the specific experiences of centennial teachers in different international contexts, considering the unique cultural, social, and political factors that influence educational systems (Giles & Hargreaves, 2018). Additionally, there is a need for longitudinal studies to track the long-term impacts of educational modernization efforts on centennial teachers' professional identities, job satisfaction, and retention rates (Day et al., 2018). Furthermore, research should explore the role of educational leadership and policy-making in supporting centennial teachers during periods of change and reform (Hargreaves & Fullan, 2019).

Studying the lived experiences of centennial teachers in the context of educational modernization is not only relevant within local contexts but also holds significance on an international scale. Educational systems worldwide are undergoing modernization efforts to adapt to the changing needs of society, technology advancements, and global trends

in education (Schleicher, 2018). Understanding the experiences of centennial teachers within this context can provide valuable insights into the challenges and opportunities associated with educational reform initiatives (Darling-Hammond et al., 2019). These insights are crucial for developing strategies to support teachers effectively during transitions and for ensuring the success of modernization efforts.

By addressing these research gaps, scholars can contribute to a more comprehensive understanding of the lived experiences of centennial teachers in the context of educational modernization on an international scale. This knowledge can inform the development of policies and practices that better support centennial teachers' professional growth and well-being amidst ongoing changes in the field of education.

The DepEd Bagumbayan District, situated in a diverse educational setting, presents a unique context for exploring how centennial teachers navigate through the challenges and opportunities presented by educational modernization. This research aims to shed light on their lived experiences, perspectives, and coping strategies in adapting to these changes.

Research Questions

This study aimed to delve into the lived experiences of centennial teachers within the educational modernization landscape in DepEd Bagumbayan District.

Specifically, this sought to answer the following:

1. How do centennial teachers in DepEd Bagumbayan District perceive and define educational modernization within their teaching contexts?
2. What are the lived experiences of centennial teachers in incorporating modern technological tools and pedagogical approaches into their teaching practices?
3. What challenges do centennial teachers encounter while navigating educational modernization, and how do they address or overcome these challenges?
4. How do centennial teachers perceive the impact of educational modernization on student learning outcomes and their roles as educators in DepEd Bagumbayan District?

METHODOLOGY

Research Design

In this study, a qualitative research, specifically the phenomenological approach, was employed to examine the lived experiences of centennial teachers within the educational modernization landscape in DepEd Bagumbayan III District.

Phenomenological research is a method that aims to delve into individuals' lived experiences to gain deeper insights into how they interpret these experiences. It operates under the assumption that individuals employ a universal structure or essence to derive meaning from their encounters. This research involves the interpretation of participants' emotions, perceptions, and beliefs to shed light on the fundamental essence of the phenomenon under investigation. An essential aspect of the phenomenological research design is the researcher's obligation to set aside any preconceived assumptions about the experience or phenomenon (Delve & Limpaecher, 2012).

Participants of the Study

The study involved a total of fifteen (15) Centennial Teachers from among elementary schools in Bagumbayan III, Division of Sultan Kudarat, who meet the researcher's specified inclusion criteria based on the study of Ngag (2023) where he considered experts who served as informants and source of data. By this way, he established the generalizability and reliability of the selectiion.

The inclusion criteria includes the following:

Teaching Experience: Participants have a substantial teaching experience, preferably spanning multiple decades, to qualify as centennial teachers. This criterion ensures that the participants have a deep understanding of the historical context of educational modernization and have witnessed its evolution over time.

Employment Status: Participants must be currently employed as teachers in schools within DepEd Bagumbayan District III, Division of Sultan Kudarat during the school year 2023-2024. This criterion ensures that the participants are actively engaged in the educational system and can provide relevant insights into the impact of modernization efforts on their daily teaching practices.

Direct Involvement in Modernization Efforts: Participants must have direct involvement or experience with the educational modernization initiatives implemented within their schools or the district. This criterion ensures that the participants have firsthand experience with the changes, challenges, and successes associated with modernization efforts.

Willingness to Share Experiences: Participants must be willing to share their lived experiences openly and honestly during interviews or focus group discussions. This criterion ensures that the participants are comfortable discussing their experiences, perspectives, and emotions related to educational modernization.

Sampling Technique

During the conduct of this study, a Purposive Sampling Technique was intentionally utilized to carefully select centennial teachers from among secondary, and elementary schools in Bagumbayan III, Division of Sultan Kudarat, who meet the specific inclusion criteria established by the researcher.

Purposive sampling, alternately referred to as judgmental, selective, or subjective sampling, constitutes a variant of non-probability sampling. Within this approach, researchers exercise their own judgment and discretionary acumen in the selection of individuals from the population to partake in their survey endeavors (Alchemer, 2021). This method of sampling mandates that researchers possess prior knowledge of the objectives underpinning their study so as to effectively pinpoint and make contact with eligible participants through online survey platforms like Alchemer. Researchers resort to purposive sampling in order to secure access to a distinct subgroup of individuals, whereby all survey respondents are meticulously chosen based on their alignment with a specific demographic or criterion.

Data Gathering Instrument

In the context of this research, a semi-structured interview functioned as an investigative instrument during both in-depth interviews and Focus Group Discussions (FGDs). Its purpose was to facilitate an in-depth exploration of the lived experiences of centennial teachers within the educational modernization landscape in DepEd Bagumbayan District.

In the initial phase, the researcher diligently sought formal authorization from both the Superintendent of DepEd-Sultan Kudarat and the Dean of the College of Graduate Studies (CGS). This authorization was essential to obtain the necessary permissions for the researcher to conduct the study, emphasizing the importance of ethical considerations.

Following this, a secondary authorization letter was sent to the District Supervisor, explicitly requesting access to the specific data required for this research. A meticulously crafted survey questionnaire was developed, subjected to rigorous evaluation, and then administered to the targeted participants.

The researcher employed a Purposive Sampling Technique to carefully select elementary school teachers as participants in this study. Assuming strict adherence to established health protocols, the researcher proceeded with conducting interviews and facilitating Focus Group Discussions (FGDs), all of which were conducted through face-to-face interactions.

Ultimately, the data collected from interviews and FGDs were systematically organized, subjected to comprehensive analysis, and interpreted using the thematic analysis approach. This approach was expected to provide a deeper understanding of the issues under investigation.

Data Analysis

In the context of the study centered on exploring the lived experiences of centennial teachers within the educational modernization landscape in DepEd Bagumbayan District III, a content or thematic analysis approach was employed to

examine the collected data. This methodology, as described by Flick (2014), involved the systematic categorization of textual components, including statements, phrases, and words, into organized groupings or categories. These categories were either derived from established frameworks or custom-developed to align with the study's specific objectives.

To execute this analytical process, a series of essential steps were diligently followed:

Initially, all data sources, such as interview transcripts, notes from Focus Group Discussions (FGDs), and relevant documents, were meticulously organized and prepared for analysis. This phase ensured the systematic arrangement and accessibility of the data.

Subsequently, the researcher deeply engaged with the data by conducting a thorough review of interview transcripts and FGD notes. This immersive process aided in gaining a comprehensive understanding of the content and context embedded within the collected information.

The third step involved initiating a systematic coding process. Initial codes were generated by identifying meaningful segments or patterns within the data. These codes captured essential concepts, ideas, or themes related to communication skills. Following coding, the identified codes were grouped into preliminary themes based on shared meaning or relevance. This step aimed to establish an initial structure for organizing the data.

Next, the emerging themes and their corresponding codes underwent a process of review and refinement. The researcher ensured the consistency and clarity of these themes, making necessary adjustments. Each refined theme was assigned a descriptive name that succinctly represented the content it encapsulated, facilitating easy identification and interpretation.

Relevant data excerpts, such as quotes or segments extracted from interviews and FGDs, were selected and associated with the respective themes. These excerpts served as supporting evidence for the identified themes.

Finally, the thematic analysis extended beyond surface-level identification. Researchers interpreted the meaning and implications of each theme within the context of the study's objectives. They sought patterns, connections, and variations within the themes to provide a comprehensive understanding of the lived experiences of centennial teachers within the educational modernization landscape in DepEd Bagumbayan District.

This meticulous and structured process of thematic analysis enabled researchers to systematically explore and comprehend the lived experiences of centennial teachers within the educational modernization landscape in DepEd Bagumbayan District. Ultimately, this approach yielded valuable insights that could contribute to the enhancement of intervention programs focused on teachers' lived experiences.

Scope and Limitations

The study focused specifically on DepEd Bagumbayan District III, which is located within the Sultan Kudarat Division in the Philippines. It covered the school year 2023-2024, providing a snapshot of the experiences of centennial teachers during this period. It involved centennial teachers working within DepEd Bagumbayan District III, Sultan Kudarat Division, during the specified school year.

RESULTS AND DISCUSSION

The educational landscape is rapidly evolving with the advent of modernization, significantly impacting the teaching profession. In the Division of Sultan Kudarat, DepEd Bagumbayan District III, centennial teachers—those with a century of accumulated experience in education—navigate these changes with unique perspectives.

This study explored their lived experiences amid educational modernization. The study aims to (1) understand the centennial teachers' perceptions of educational modernization, (2) identify the challenges and opportunities they encounter, and (3) analyze the coping mechanisms and strategies they employ to adapt to these changes. Employing a phenomenological approach, this study conducted in-depth, semi-structured interviews with ten centennial teachers from DepEd Bagumbayan District III. Data were analyzed using thematic analysis to extract key themes and patterns from the participants' narratives, providing a comprehensive understanding of their lived experiences.

Based on the conducted interview and FGD transcribe using thematic analysis methos, the following were the major results:

First, Centennial teachers in DepEd Bagumbayan District perceive educational modernization as a paradigm shift towards integrating advanced technologies and innovative pedagogical methods into their teaching contexts. They define it as a strategic initiative to enhance student engagement, promote personalized learning experiences, and prepare students for the demands of the digital age.

Second, Centennial teachers describe their experiences of incorporating modern technological tools and pedagogical approaches as initially challenging yet ultimately transformative. They highlight moments of experimentation, collaborative learning with colleagues, and ongoing professional development as crucial factors in successfully integrating these tools into their teaching practices.

Third, Centennial teachers encounter challenges such as inadequate infrastructure, resistance to change among stakeholders, and the need for continuous training and support. To address these challenges, they implement strategies like advocating for resource allocation, fostering a culture of openness to innovation, and participating in professional learning communities to share knowledge and expertise.

Fourth, Centennial teachers perceive that educational modernization has positively impacted student learning outcomes by enhancing engagement, fostering critical thinking skills, and improving academic performance. They also believe it has redefined their roles as educators to be facilitators of knowledge, mentors in digital literacy, and collaborators in creating dynamic learning environments that meet the diverse needs of students in DepEd Bagumbayan District.

Conclusions

In the light of the findings of the study, the following were concluded:

Centennial teachers in DepEd Bagumbayan District perceive educational modernization as a transformative process that integrates technology and innovative pedagogies to enhance learning experiences. They define it as a shift towards more interactive and personalized learning environments that cater to diverse student needs and prepare them for the future.

Also, Centennial teachers have experienced both challenges and benefits in incorporating modern technological tools and pedagogical approaches into their teaching practices. They acknowledge that while technology enhances engagement and learning outcomes, its effective integration requires continuous learning and adaptation to keep pace with rapid advancements.

Moreover, Centennial teachers encounter various challenges such as access to technology, resistance to change, and the need for professional development. They address these challenges through collaborative efforts, professional development programs, and creating supportive networks within their schools and communities to facilitate successful implementation of modernization initiatives.

Finally, Centennial teachers perceive educational modernization as positively impacting student learning outcomes by fostering critical thinking, creativity, and digital literacy skills. They view themselves not only as facilitators of knowledge but also as guides who empower students to become independent learners capable of navigating an increasingly digital world.

Recommendations

Based on the results, and conclusions, the following were recommended:

1. DepEd may ensure continuous professional development programs specifically focused on educational modernization for centennial teachers. Provide structured training sessions that not only introduce new technologies and pedagogical approaches but also allow teachers to practice integrating these innovations into their classrooms.

2. School Administrators may establish support systems and resources dedicated to educational modernization initiatives. Create forums or committees where centennial

teachers can collaborate, share successes and challenges, and collectively problem-solve.

3. Centennial Teachers may engage in reflective practices and document their experiences with educational modernization. Keep detailed records of successes, challenges, and adaptations made in your teaching practices. Consider forming peer support groups within the district to share strategies and lessons learned. Advocate for opportunities to showcase innovative practices to inspire and support colleagues in their modernization journeys.

4. Future Researchers may conduct longitudinal studies that track the impact of educational modernization over time in DepEd Bagumbayan District. Use mixed-methods approaches to capture both quantitative outcomes (e.g., student performance data) and qualitative insights (e.g., teacher perceptions and experiences). Investigate the sustainability of modernization efforts and identify factors that contribute to successful implementation or barriers that impede progress. Share findings widely to inform policy decisions and best practices in educational modernization initiatives.

Compliance with Ethical Standards

In preparation for implementation, all the aforementioned plans and recommendations were presented to East-West Mindanao Colleges Inc to ensure compliance with prescribed procedures and protocols. Within the context of the research focused on examining the lived experiences of centennial teachers within the educational modernization landscape in DepEd Bagumbayan District, it was imperative to emphasize the paramount importance of ethical considerations. Prior to commencing this study, the following ethical principles were highlighted:

Before commencing the study, explicit and informed consent was obtained from all participating school heads. They were provided with a thorough understanding of the study's objectives, methodologies, potential risks, and benefits, ensuring their participation was entirely voluntary. Participants were assured they could withdraw from the study at any time without facing any negative repercussions. To protect the identities and responses of the centennial teachers, pseudonyms or codes were used, and the data was securely stored with restricted access to the research team, ensuring anonymity and confidentiality.

To minimize harm, delicate subjects were approached with care, considering the potential emotional and psychological impact on the participants. Strategies to mitigate distress and a support system were readily available to assist participants if needed. The researcher maintained a professional and respectful relationship with the school heads, avoiding any actions that could exploit or harm them. Data protection regulations were strictly adhered to, ensuring the secure storage and transmission of data, and participants were reassured that their participation was voluntary and free from coercion.

Throughout the research process, the researcher remained vigilant about potential biases, upholding objectivity and transparency. Ethical clearance was obtained from

relevant institutional review boards or ethics committees before initiating the study. The findings were reported truthfully and accurately, ensuring integrity. The potential benefits of the research for educational practices and policies were thoughtfully considered, aiming to contribute positively to the education system. Cultural sensitivity was observed, respecting local customs and practices, and the study prioritized inclusivity and diversity, encompassing a wide spectrum of centennial teachers and attitudes towards 21st-century learning. By adhering to these ethical considerations, the research was conducted responsibly and respectfully, prioritizing the rights and well-being of the participants and contributing valuable insights to the field of education within DepEd Sultan Kudarat.

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LIVED EXPERIENCES OF STUDENTS IN A SCIENCE-MODULAR CLASSROOM: A PHENOMENOLOGICAL ANALYSIS

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ABSTRACT

The rapid shift towards modular learning due to global disruptions, such as the COVID-19 pandemic, has significantly transformed educational practices worldwide. This phenomenological study explores the lived experiences of students in a science-modular classroom at Lambayong National High School in Lambayong, Sultan Kudarat. The research aims to understand how students perceive and navigate the unique challenges and opportunities presented by modular learning in science education. Using in-depth interviews and thematic analysis, the study uncovers the nuances of students' interactions with modular materials, their engagement with science concepts, and their overall academic experiences. Key findings highlight the students' adaptability to self-paced learning, the importance of teacher support and feedback, and the role of peer collaboration in enhancing understanding. Despite initial difficulties with the modular approach, students reported improved self-discipline and time management skills. However, challenges such as limited access to resources and occasional feelings of isolation were also identified. These insights provide valuable implications for educators and policymakers aiming to optimize modular learning environments. The study underscores the need for adequate resources, continuous teacher training, and strategies to foster a supportive learning community. By shedding light on the students' perspectives, this research contributes to a deeper understanding of modular learning's impact on science education, offering guidance for future implementations and improvements.

Keywords: *Phenomenological Analysis, Science Education, Modular Learning, Student Experiences*

INTRODUCTION

The rapid shift towards modular learning due to global disruptions, such as the COVID-19 pandemic, has significantly transformed educational practices worldwide. This study aimed to explore the lived experiences of students in a science-modular classroom at Lambayong National High School, Lambayong, Sultan Kudarat. Understanding these experiences is crucial for developing effective teaching strategies and improving educational outcomes in a modular learning environment.

Globally, modular learning has been implemented as an alternative to traditional classroom instruction, particularly during times of crisis. This approach allows for flexible, self-paced learning, making it a viable option during disruptions such as the COVID-19 pandemic (Ali, 2020). Studies have shown that while modular learning offers several benefits, including flexibility and accessibility, it also presents challenges such as reduced student engagement and limited teacher-student interaction (Adedoyin & Soykan, 2020). Despite extensive research on the effectiveness of modular learning, there is a gap in understanding the subjective experiences of students, particularly in science subjects, which require hands-on activities and experiments.

In the Philippines, the Department of Education (DepEd) adopted modular learning as a primary mode of instruction during the pandemic, providing printed and digital modules to students nationwide (DepEd, 2020). While this approach ensured the continuity of education, it also highlighted issues such as the digital divide, varying levels of parental support, and the readiness of teachers and students for this mode of learning (Lapada et al., 2020). Although there have been studies on the challenges and effectiveness of modular learning in the Philippines, there is a noticeable gap in literature focusing on the specific experiences of students in science-modular classrooms.

In South Central Mindanao, particularly in Sultan Kudarat, the study of Ngag (2023) showed a significant improvement in the students' achievements/scores by using module on Teduray folktales which includes various activities and lessons such as grammar, vocabulary enrichment, and reading comprehension both HOTS and LOTS and Teduray-English translated lessons such as Tēduray original poems, folksongs, riddles, and proverbs. However, there is a lack of in-depth studies exploring the lived experiences of students in this setting, particularly in science subjects which are traditionally more challenging to teach and learn remotely.

Despite the growing body of research on modular learning, significant gaps remain, particularly regarding the lived experiences of students in science-modular classrooms. Internationally, while the effectiveness and challenges of modular learning have been well-documented, the personal and subjective experiences of students in science subjects remain underexplored. In the Philippines, existing studies tend to focus on the general challenges of modular learning, with limited attention to the specific experiences of science students. In South Central Mindanao, the socio-economic and cultural factors influencing modular learning have not been sufficiently examined, leaving a gap in

understanding how these factors affect students' experiences in science-modular classrooms.

This study aimed to explore the lived experiences of the junior high school students in the modular class conducted in their Science class at Lambayong National High School, DepEd Division of Sultan Kudarat. It also aimed to bridge the existing gaps on studies related to Science in a modular class setting.

Research Questions

This study aimed to explore the lived experiences of the junior high school students in the modular class conducted in their Science class at Lambayong National High School, DepEd Division of Sultan Kudarat.

Specifically, this sought to answer the following:

1. What are the lived experiences of Junior High School students in their modular Science classes at Lambayong National High School?
2. What struggles do they encounter that hinder their learning in Science?
3. What coping strategies do they employ to manage these struggles in their modular Science classes?

METHODOLOGY

Research Design

Thos study used a qualitative research, specifically the phenomenological approach, was employed to explore the lived experiences of the Junior High School students in the modular class conducted in their Science class at Lambayong National High School, DepEd Division of Sultan Kudarat.

Phenomenological research is a method that aims to delve into individuals' lived experiences to gain deeper insights into how they interpret these experiences. It operates under the assumption that individuals employ a universal structure or essence to derive meaning from their encounters. This research involves the interpretation of participants' emotions, perceptions, and beliefs to shed light on the fundamental essence of the phenomenon under investigation. An essential aspect of the phenomenological research design is the researcher's obligation to set aside any preconceived assumptions about the experience or phenomenon (Delve & Limpaecher, 2012).

Participants of the Study

The study involved a total of fifteen (15) Junior High School students at Lambayong National High School, Division of Sultan Kudarat, who meet the researcher's specified inclusion criteria based on the study of Ngag (2023) where he considered

experts who served as informants and source of data. By this way, Ngag established the generalizability and reliability of the selectiion.

The inclusion criteria includes the following:

1. The participants must be a Junior High School students.

2. He/she must be one of the students who struggle in the modular class, with record from the adviser/subject teacher.

3. He/she has lowest grade in Science.

Sampling Technique

The study used a Purposive Sampling Technique to carefully select the Junior High School students at Lambayong National High School, DepEd Division of Sultan Kudarat who met the specific inclusion criteria established by the researcher.

Purposive sampling, alternately referred to as judgmental, selective, or subjective sampling, constitutes a variant of non-probability sampling. Within this approach, researchers exercise their own judgment and discretionary acumen in the selection of individuals from the population to partake in their survey endeavors (Alchemer, 2021).

This method of sampling mandates that researchers possess prior knowledge of the objectives underpinning their study so as to effectively pinpoint and make contact with eligible participants through online survey platforms like Alchemer. Researchers resort to purposive sampling in order to secure access to a distinct subgroup of individuals, whereby all survey respondents are meticulously chosen based on their alignment with a specific demographic or criterion.

Data Gathering Instrument

In this research, a semi-structured interview was utilized as an investigative tool during both in-depth interviews and Focus Group Discussions (FGDs) to facilitate a thorough exploration of the lived experiences of students at Lambayong National High School, DepEd Division of Sultan Kudarat.

Initially, the researcher diligently sought formal authorization from the school principal. This step was crucial for obtaining the necessary permissions to conduct the study, highlighting the importance of ethical considerations. Following this, a secondary authorization letter was sent to the District Supervisor, explicitly requesting access to the specific data required for this research.

A meticulously crafted survey questionnaire was developed, rigorously evaluated, and administered to the targeted participants. The researcher employed a purposive sampling technique to carefully select the elementary school teachers who participated

in the study. Adhering strictly to established health protocols, the researcher conducted face-to-face interviews and facilitated FGDs.

The data collected from the interviews and FGDs were systematically organized, comprehensively analyzed, and interpreted using the thematic analysis approach. This method was expected to provide a deeper understanding of the issues under investigation.

Data Analysis

In the context of the study centered on exploring the lived experiences of Junior High School students at Lambayong National High School, DepEd Division of Sultan Kudarat, a content or thematic analysis approach was employed to examine the collected data. This methodology, as described by Flick (2014), involved the systematic categorization of textual components, including statements, phrases, and words, into organized groupings or categories. These categories were either derived from established frameworks or custom-developed to align with the study's specific objectives.

Following data collection, the transcripts were systematically reviewed to identify common themes and patterns emerging from the participants' responses which patterned after the study of Ngag (2023). Through an iterative process of coding and categorization, key themes were identified, reflecting the participants' perceptions, concerns, and insights regarding the agenda.

To execute this analytical process, a series of essential steps were diligently followed:

Initially, all data sources, such as interview transcripts, notes from Focus Group Discussions (FGDs), and relevant documents, were meticulously organized and prepared for analysis. This phase ensured the systematic arrangement and accessibility of the data.

Subsequently, the researcher deeply engaged with the data by conducting a thorough review of interview transcripts and FGD notes. This immersive process aided in gaining a comprehensive understanding of the content and context embedded within the collected information.

The third step involved initiating a systematic coding process. Initial codes were generated by identifying meaningful segments or patterns within the data. These codes captured essential concepts, ideas, or themes related to communication skills. Following coding, the identified codes were grouped into preliminary themes based on shared meaning or relevance. This step aimed to establish an initial structure for organizing the data.

Next, the emerging themes and their corresponding codes underwent a process of review and refinement. The researcher ensured the consistency and clarity of these themes, making necessary adjustments. Each refined theme was assigned a descriptive

name that succinctly represented the content it encapsulated, facilitating easy identification and interpretation.

Relevant data excerpts, such as quotes or segments extracted from interviews and FGDs, were selected and associated with the respective themes. These excerpts served as supporting evidence for the identified themes.

Finally, the thematic analysis extended beyond surface-level identification. Researchers interpreted the meaning and implications of each theme within the context of the study's objectives. They sought patterns, connections, and variations within the themes to provide a comprehensive understanding of the lived experiences of Junior High School students within Lambayong National High School, DepEd Division of Sultan Kudarat.

This meticulous and structured process of thematic analysis enabled researchers to systematically explore and comprehend the lived experiences of Junior High School students within the landscape of Lambayong National High School, DepEd Division of Sultan Kudarat. Ultimately, this approach yielded valuable insights that could contribute to the enhancement of intervention programs focused on students` lived experiences.

Scope and Limitations

The was conducted at Lambayong National High School, DepEd Division of Sultan Kudarat during the post-Pandemic time where hybrid class was implemented. It used solely qualitative data gathering technique through in-depth interview and Focus Group Discusion (FGD).

It covered the school year 2023-2024, providing a snapshot of the experiences of students during this period. It involved Junior High School students teachers working at Lambayong National High School, DepEd Division of Sultan Kudarat.

RESULTS AND DISCUSSION

The lived experiences of Junior High School students in their modular Science classes at Lambayong National High School

The lived experiences of Junior High School students in their modular Science classes at Lambayong National High School reveal a mixed bag of challenges and adaptations. Many students expressed feelings of isolation due to the lack of face-to-face interaction with teachers and peers, which they found essential for understanding complex scientific concepts.

Despite this, some students appreciated the flexibility that modular learning provided, allowing them to study at their own pace. A recurring theme was the sense of responsibility and self-discipline that students had to develop to manage their time and workload effectively.

The struggles do they encounter that hinder their learning in Science

The students faced several significant struggles that hindered their learning in Science:

Limited Access to Resources: Many students lacked access to adequate learning materials, such as textbooks and scientific equipment, which are crucial for understanding and experimenting with scientific concepts.

Technical Issues: For those using digital modules, frequent technical problems, such as unstable internet connections and lack of proper devices, were major obstacles.

Lack of Direct Interaction: The absence of immediate feedback and direct instruction from teachers made it difficult for students to grasp difficult topics, leading to frustration and decreased motivation.

Distractions at Home: Many students reported that studying at home introduced numerous distractions, making it hard to focus on their studies.

The coping strategies students employ to manage these struggles in their modular Science classes

Students employed various coping strategies to manage these struggles in their modular Science classes:

Time Management and Scheduling: Students created structured study schedules to ensure they allocated sufficient time to each subject, helping them stay organized and on track.

Seeking Help from Family and Peer: Many students turned to family members and peers for assistance with difficult topics, creating informal study groups to support each other.

Utilizing Online Resources: Those with internet access supplemented their learning with online resources such as educational videos, tutorials, and science websites to better understand the material.

Developing Self-discipline: Students worked on improving their self-discipline to minimize distractions and maintain focus during their study sessions.

Conclusions

In the light of the findings of the study, the following were concluded:

The lived experiences of Junior High School students in modular Science classes at Lambayong National High School are characterized by a mix of adaptability

and challenges. Students generally appreciate the flexibility of modular learning, which allows them to study at their own pace.

Students encounter several struggles that hinder their learning in Science, including difficulties in understanding complex scientific concepts without the benefit of hands-on experiments and real-time teacher explanations. Additionally, many students face challenges related to inadequate access to learning materials and resources, such as textbooks, internet connectivity, and digital devices.

To manage these struggles, students employ various coping strategies, such as forming informal study groups with peers to discuss and clarify difficult concepts. They also make use of available online resources, such as educational videos and websites, to supplement their learning. Additionally, some students actively seek support from family members or community tutors.

Recommendations

Based on the results, and conclusions, the following were recommended:

1. Department of Education (DepEd) may develop and implement comprehensive training programs for teachers.

2. Curriculum Developers may integrate more interactive and multimedia content into the Science modules, including virtual labs, simulations, and video tutorials, to facilitate a better understanding of complex scientific concepts.

3. Science Teachers may foster the creation of virtual study groups and regular online consultation hours where students can discuss their challenges and seek real-time assistance with their studies.

4. Future Researchers may conduct longitudinal studies to assess the long-term impacts of modular learning on student performance and engagement in Science, and identify best practices for improving modular education.

Compliance with Ethical Standards

This study adhered strictly to ethical compliance guidelines to ensure the integrity and ethical standards of the research process. Formal authorization was obtained from the school principal and the District Supervisor to conduct the study, emphasizing respect for institutional protocols and permissions. Informed consent was secured from all participants, ensuring they were fully aware of the study's purpose, procedures, potential risks, and benefits.

Participants were assured of their right to withdraw from the study at any time without penalty. Confidentiality and anonymity of the participants were rigorously maintained throughout the research process, with data being securely stored and only accessible to the research team. The study was conducted with sensitivity to the well-

being of the participants, ensuring that no harm came to them as a result of their involvement in the research.

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MOTIVATIONAL FACTORS AND BEHAVIORAL INTENTION TO INVEST IN PHILIPPINE STOCK MARKET AMONG MILLENNIAL AND GEN-Z INVESTORS IN CALAMBA CITY

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ABSTRACT

This study explored the motivational factors influencing the behavioral intentions of Millennial and Gen-Z investors in the Philippine stock market, specifically within Calamba City. The research focused on understanding financial knowledge, financial well-being, overconfidence bias, and investment risk within these generational groups, providing valuable insights for financial institutions, regulators, and market participants seeking to engage this demographic in the equity market. Utilizing the Theory of Planned Behavior (TPB) as a framework, the study investigated how various motivational factors shaped the key TPB components: attitude, subjective norm, and perceived behavioral control. By employing this approach, the research aimed to provide a comprehensive understanding of the behavioral intentions of Millennial and Gen-Z investors in the stock market. A descriptive-correlational research design was employed, collecting data through surveys from 265 randomly selected respondents. The collected data underwent thorough statistical treatment for analysis and evaluation. The findings revealed consistent agreement among participants regarding key motivational factors, indicating a low positive correlation toward behavioral intention for investing but highlighting a gap between financial aspirations and current financial status. While there were variations in overconfidence bias and investment risk perception among Millennial and Gen-Z investors, a common understanding prevailed regarding financial knowledge and financial well-being. These insights led to the development of a proposed strategic investment action plan, including the implementation of targeted educational programs and communication campaigns designed to address the identified gap, enrich understanding,

enhance engagement, and promote long-term participation of this demographic in the Philippine Stock Market.

Keywords: *Stocks, Philippine Stock Market, Millennial, Gen-Z, Motivational Factors, Behavioral Intention*

INTRODUCTION

The stock market plays a pivotal role in the development of a country's industry and commerce, which has a significant impact on its economy. This significance extends to both the industry and the investors, which is why the government and even the central banks of a particular country keep a close eye on what is happening in the stock market.

The Millennial generation has emerged as the largest labor force, most populous, most educated, and most diverse generation. They are known for their unique attitudes, preferences, and technological competence, and they have brought about significant changes in various aspects of society, including investment behavior. Some Millennials are now in their highest earning years, giving them more money to invest and save for their own financial goals. As a result, the future of the investing business may be strongly impacted by their financial choices. Eventually, the market's future will depend on Millennial investors to continue further economic growth (Goldman Sachs, 2023).

Furthermore, Generation Z, representing the newest wave of investors, is growing up in an era defined by technological advancements, widespread access to information, and global connectivity. They have been shaped by the rise of social media, instant communication, and an increased emphasis on social responsibility. These factors contribute to a distinctive set of attitudes and preferences when it comes to financial decision-making, including their approach to investing in the stock market (Goldman Sachs, 2023; Deloitte, 2022).

The Philippine stock market, as a vital component of the country's economy, offers Millennials and Gen Z investors a platform to participate in wealth creation and long-term financial growth. Traditionally, trading stocks posed challenges for young individuals, requiring visits to libraries or financial advisors and direct contact with brokers. However, the advent of the internet and technological advancements have revolutionized stock trading. The younger generation who is more familiar with technology and social media, finds it easier to access information and engage in online trading platforms (Central Bank of the Philippines, 2021).

As a result of technology's low entry barriers, more people have been encouraged to start investing. The 2021 Financial Inclusion survey conducted by the Central Bank of the Philippines reveals that investment ownership has increased to 36% of the total adult population in 2021 from 25% in 2019. However, only 1% of adults have investments in equity securities such as stocks, Unit Investment Trust Fund (UITF), and mutual funds.

Various constraints contribute to this low percentage, including job insecurity, perceived high costs, lack of awareness, and low trust in investment providers (Central Bank of the Philippines, 2021).

While most Filipinos invest with the primary objective of protecting themselves against emergencies and achieving life goals, a smaller percentage holds investments specifically for retirement preparation and asset accumulation. Unfortunately, research indicates that financial literacy among young adults in the Philippines is lacking, with many individuals lacking a fundamental understanding of financial concepts. Despite these limitations, recent studies suggest that Filipino Millennials show behavioral intentions and take the initiative to invest in order to achieve financial security, particularly in response to the challenges posed by the COVID-19 pandemic (Deloitte, 2022).

Notably, domestic investors, particularly young, low-income Filipinos seeking higher returns, have made significant contributions to the trading volumes on the Philippine Stock Exchange (PSE). This increased participation has led to the establishment of more stock market accounts. However, despite these positive trends, there are still obstacles that hinder the ability of Millennials and Gen Z investors to save and invest effectively. Furthermore, limited research exists on the specific factors that motivate them to engage in the Philippine stock market. (Philippine Daily Inquirer, 2021).

This study examined the key motivational factors, including preferences and knowledge related to stock market investments, which influence the behavioral intentions of Millennial and Gen Z investors in the Philippine stock market. The investigation adopted the Theory of Planned Behavior (TPB), which suggested that behavioral intention is shaped by attitudes, subjective norms, and perceived behavioral control (Ajzen, 1991). By exploring these motivational factors within the framework of TPB, the study provided a comprehensive understanding of the underlying drivers behind Millennial and Gen Z investors' behavioral intentions.

By uncovering the extent to which motivational factors drive the behavioral intention of Millennial and Gen Z investors to participate in the Philippine stock market, the main purpose of this study was to contribute to the existing literature on investment behavior and provide valuable insights for financial institutions, regulators, and market participants. The outcomes facilitated the development of targeted strategies, educational programs, and communication campaigns aimed at enhancing the understanding, engagement, and long-term participation of Millennials and Gen Z individuals in the stock market. The study attempted to create an action plan aimed at further enhancing the motivation and behavioral intention of Millennial and Gen Z investors in Calamba City to participate in the Philippine Stock Market.

Research Questions

The purpose of this study was to investigate the motivational factors and behavioral intentions of Millennial and Gen Z in Calamba City regarding their investment in the Philippine Stock Market. The following research questions guided the study:

1. To what extent are motivational factors to invest in Philippine Stock Market observed as assessed by Millennial and Gen Z Investors in Calamba City in terms of:
    1.1 Financial Knowledge,
    1.2 Financial Well-being,
    1.3 Overconfidence Bias, and
    1.4 Investment Risk?
2. What is the level of behavioral intention to invest in Philippine Stock Market as assessed by Millennial and Gen Z Investors in Calamba City in terms of:
    2.1 Attitude,
    2.2 Subjective Norm, and
    2.3 Perceived Behavior Control?
3. Is there a significant difference between the assessment of the Millennial and Gen Z Investors as to extent of observance of motivational factors and the level of behavioral intention to invest in Philippine Stock Market?
4. Is there a significant relationship between the extent of observance of motivational factors and the level of behavioral intention to invest in Philippine Stock Market as assessed by Millennial and Gen Z investors in Calamba City?
5. Based on the findings of the study, what action plan may be proposed?

METHODOLOGY

The methodology of the study is presented in this section. The discussion includes the research design, research locale, population and sampling, respondents of the study, research instrument, validation of the instrument, data gathering procedure, and treatment of quantitative data. Ethical considerations are also addressed to ensure the trustworthiness and dependability of the study.

Research Design

The research design encompassed the overall strategy or plan that outlined the approach and methods used to conduct the research study. The descriptive-correlational method of research was chosen as the research design to understand and describe the relationship between motivational factors and behavioral intention among Millennial and Gen Z investors in the Philippine stock market. This research design enabled the collection of data that described the variables of interest and explored the associations or correlations between them. Descriptive analysis was utilized to depict the current state of the identified variables, while correlational analysis was employed to assess the strength of the relationship between the identified motivational factors and the level of behavioral intention to invest in the Philippine stock market, using statistical data.

Additionally, McCombes (2020) suggested that the purpose of adopting the descriptive correlational method was to identify and describe the inherent variables and correlations. This process entailed gathering data related to specific groups or circumstances. To collect the necessary data, a survey questionnaire was utilized, and individual data were obtained using the descriptive correlational method.

Research Locale

The research was conducted at Laguna College of Business and Arts, Calamba City, Laguna, with the criteria of those who already graduated in college from 2000 to 2023, and with the consideration that respondents who belong to these criteria were respondents who could be classified as Millennial and Gen Z generation. They were chosen as the respondents because LCBA's role as a pioneering institution in providing quality education in Calamba City aligned well with the research focus. The college attracted individuals who had pursued higher education, making them more likely to have the necessary knowledge and interest in financial matters, including stock market investment. Conducting the research at Laguna College of Business and Arts provided convenient access to a pool of potential participants who met the criteria. The institutional support accelerated the data collection process and contributed to the overall success of the study.

Population and Sampling

This study utilized a simple random sampling technique based on the sampling frame, which included Millennial and Gen Z investors in Calamba City who had graduated from Laguna College of Business and Arts between 2000 to 2023. The sampling was established with an effect size of .20 to quantify the magnitude of the difference between populations, a margin of error of .05, and a confidence level of .95, calculated with the expertise of the researcher's statistician using the G*Power. Of the 7,364 population of LCBA graduates from 2000 to 2023, a total of 260 (3.5% of the total number) participants were selected as respondents.

Respondents of the Study

The respondents of the study were Millennial and Gen Z participants in Calamba City who graduated from LCBA between the years 2000 and 2023. The sample was selected specifically to capture the perspectives and experiences of this demographic group. In this study, respondents included both current investors and individuals who had not yet invested in the Philippine Stock Market. This approach aimed to provide valuable insights into their motivations, attitudes, and perceptions that might have influenced their behavioral intentions and future investment decisions.

Table A

Respondents of the Study

TYPE OF RESPONDENT	FREQUENCY	PERCENTAGE
Millennials	130	50%
Generation Z	130	50%
Total	260	100%

The specific number of respondents was shown in Table A and it was determined in consultation with a statistician, considering factors such as confidence level, margin of error, expected effect size, and data variability. The group of respondents included one hundred thirty (130) Millennial and Gen Z participants.

Instrument

The research instrument was proposed to be an adopted instrument that had been used in previous studies and had demonstrated reliability and validity. It consisted of three parts, each containing several questions related to specific variables. The first part of the questionnaire assessed the Investor Profile, gathering information about the participants' demographic and background characteristics. The second part focused on measuring the motivational factors associated with investing in the Philippine stock market, including financial knowledge, financial well-being, overconfidence bias, and investment risk. The third part evaluated the participants' level of behavioral intention to invest in the stock market, examining Attitude, Subjective Norm, and Perceived Behavior Control.

To capture responses and measure the dimensions being assessed, a four-point Likert scale was employed. This allowed participants to indicate their level of agreement or disagreement with each statement. The application of the Likert scale in this study was further explained with an interpretation as shown below.

Mean-score Interval and Verbal Interpretation on the Extent of Observance of Motivational Factors as assessed by Millennial and Gen Z Investors in Calamba City

Ranges of Mean	Rating	Categorical Response	Verbal Interpretation
3.25 - 4.00	4	Strongly Agree	Fully Observed
2.50 - 3.24	3	Agree	Observed
1.75 - 2.49	2	Disagree	Partially Observed
1.00 - 1.74	1	Strongly Disagree	Not Observed

Mean-score Interval and Verbal Interpretation on the Level of Behavioral Intention to invest in the Philippine Stock Market

Ranges of Mean	Rating	Categorical Response	Verbal Interpretation
3.25 - 4.00	4	Strongly Agree	With Full Intention
2.50 - 3.24	3	Agree	With Intention
1.75 - 2.49	2	Disagree	With Partial Intention
1.00 - 1.74	1	Strongly Disagree	No Intention at all

Validation of the Instrument

Cronbach's Alpha for the independent variable (motivational factors) was adopted from the research by Yang et al. (2021), resulting in Cronbach's Alpha values: Financial Knowledge - 0.861, Financial Well Being - 0.890, Overconfidence Bias - 0.920, and Investment Risk - 0.894, while the dependent variable (behavioral intention) came from Schmidt (2010), yielding: Attitude - 0.945, Subjective Norms - 0.950, and Perceived Behavioral Control - 0.946. All values met the reliability threshold (>0.70), affirming satisfactory content validity.

Data Gathering Procedure

The data collection for this study primarily relied on a survey questionnaire administered to the target respondents. The questionnaire served as the main source of primary data that is designed to collect data on the variables of interest, such as motivational factors and behavioral intentions. To ensure the accuracy, completeness, and authenticity of the instrument, the assistance of a statistician and the research adviser was sought. Their expertise was instrumental in refining the questionnaire.

Treatment of Quantitative Data

For the analysis of the quantitative data collected from the Millennial and Gen Z investor respondents, the following statistical treatments will be applied:

1. When describing the level of the motivational factors and the level of behavioral intention among Millennial and Gen Z investors, the Mean and a four-point Likert scale were both employed.

2. To determine if there was a significant difference between the assessment of Millennial and Gen Z investors regarding the extent of observance of motivational factors and the level of behavioral intention to invest in the Philippine Stock Market, independent t-tests were used.

3. The strength and direction of the relationship between motivational factors (independent variable) on the level of behavioral intention (dependent variable) among Millennial and Gen Z investors were measured using the Pearson Product-Moment Correlation Coefficient.

Scope and Delimitation

This study assessed the extent of observance of motivational factors and the level of behavioral intention to invest in the Philippine Stock Market among Millennial and Gen Z investors in Calamba City. The variables examined in assessing the extent of observance of motivational factors among Millennial investors included financial knowledge, financial well-being, overconfidence bias, and investment risk. The

determinants used in assessing behavioral intention were attitude, subjective norm, and perceived behavioral control, based on the Theory of Planned Behavior model.

The study adopted a quantitative approach to describe the relationship between the extent of observance of motivational factors and the level of behavioral intention to invest in the Philippine Stock Market. Descriptive statistics were employed to summarize and describe the data, while correlation analysis was used to examine the relationship between the variables.

The study adhered to ethical guidelines, ensuring participant confidentiality, voluntary participation, and informed consent. The respondents of the study were limited to Millennial investors born between 1981-1996 and Gen Z investors born between 1997-2012 in Calamba City, Laguna, Philippines. The findings may not be generalizable to Millennial and Gen Z investors in other cities or regions.

RESULTS AND DISCUSSION

This section deals with the presentation, analysis, and interpretation of data gathered from the surveyed questionnaire with the application of the appropriate statistical tools.

Table 1.1

Extent of Motivational Factors to Invest in the Philippine Stock Market observed as assessed by Millennial and Gen Z Investors in Calamba City in terms of Financial Knowledge

Indicators in terms of Financial Knowledge	Gen Z		Millennials		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. I have complete knowledge of the Philippine stock exchange	2.76	O	2.54	O	2.65	O	3
2. I checked the financial statements of the company for the past 5 years before investing in the Philippine stock exchange	2.38	PO	2.68	O	2.53	O	4
3. I consider the financial position of a company before investing in the Philippine stock exchange	2.92	O	2.98	O	2.95	O	1
4. Considering a long-term period (e.g., 10–20 years) stocks normally give the highest return	2.75	O	3.04	O	2.90	O	2
GENERAL ASSESSMENT	2.70	O	2.81	O	**2.76**	**O**	

Legend: 3.25 – 4.00 Fully Observed (FO) 1.75 – 2.49 Partially Observed (PO)
2.50 – 3.24 Observed (O) 1.00 – 1.74 Not Observed (NO)

Financial Knowledge was Observed (2.76) by Millennial and Gen Z Investors in Calamba City as to the extent of motivational factors to invest in the Philippine stock market. All indicators were verbally interpreted as Observed. Furthermore, the indicator “I consider the financial position of a company before investing in the Philippine stock exchange” got the highest mean of 2.95, while the indicator “I checked the financial statements of the company for the past 5 years before investing in the Philippine stock” got the lowest mean of 2.53.

It can be concluded that LCBA graduates observe financial knowledge and demonstrating a positive mindset toward investing in the Philippine Stock Market. This indicates a foundation of financial literacy among the surveyed group, providing a basis for making well-informed decisions and potentially participating in the stock market in the future with a strategic and wise approach.

To support the study, Barber and Odean (2019) explored the impact of financial education on individual financial behavior. The study suggested that financial education had a significant and positive impact on individual financial behavior. Participants who received financial education demonstrate greater financial knowledge and make more informed investment performance compared to individuals who did not receive financial education.

According to the research conducted by Aguirre et al. (2021), students with higher financial literacy were more likely to perceive stock market investments and express a greater intention to invest. Financial literacy acted as a motivational factor by enhancing students' understanding of investment opportunities and reducing perceived barriers related to affordability.

Furthermore, Junaeni (2020) claimed that investors must know and understand which type of investment was most appropriate for them so that they are not easily trapped by exaggerated investments. Once investors chose the type of investment, they must also be able to evaluate the level of return and risk they face to avoid losses. Hence, the investment decision may vary depending on investors understanding and perception.

Financial Well-being was Observed (2.83) by Millennial and Gen Z Investors in Calamba City as to the extent of motivational factors to invest in the Philippine stock market. Notably, they were “securing their financial future” (highest mean of 3.35) while the indicator they are “behind with their finances” (lowest computed composite mean of 2.58). Motivational factors to invest in the Philippine Stock Market was observed as assessed by Millennial and Gen Z Investors in Calamba City in terms of Financial Well-being.

Table 1.2

Extent of Motivational Factors to Invest in the Philippine Stock Market observed as assessed by Millennial and Gen-Z Investors in Calamba City in terms of Financial Well-being

Indicators in terms of Financial Well-being	Gen Z		Millennials		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. I am securing my financial future	3.29	FO	3.40	FO	3.35	FO	1
2. I am behind with my finances	2.70	O	2.45	PO	2.58	O	5
3. My finances control my life	2.67	O	2.58	O	2.63	O	4
4. I am just getting by financially	2.76	O	2.74	O	2.75	O	3
5. I am concerned that the money I have or will save won't last	2.97	O	2.73	O	2.85	O	2
GENERAL ASSESSMENT	2.88	O	2.78	A	**2.83**	**O**	

Legend: 3.25 – 4.00 Fully Observed (FO) 1.75 – 2.49 Partially Observed (PO)
2.50 – 3.24 Observed (O) 1.00 – 1.74 Not Observed (NO)

It can be deduced that LCBA graduates demonstrate a strong dedication to long-term financial planning and security. Despite this commitment, there appears to be a gap between their aspirations for financial well-being and the current reality of their financial circumstances, leading to challenges in securing their financial obligations and goals.

While they currently manage their finances, there is a sense that they are not thriving or attaining the level of financial security they aspire to achieve and although they can meet their basic needs, there is a noteworthy absence of substantial financial flexibility. Additionally, a prevailing concern among these graduates revolves around the durability of their savings and whether it will prove adequate for their future needs.

It is consistent with the findings of Koekemoer and Ferreira (2019) who explained that financial well-being encompasses a distinctive perspective, extending beyond mere financial considerations. It is linked to various aspects of an individual's life, such as psychological adjustment, physical health, and life satisfaction, which evolve throughout the investor's life cycle.

Moreover, Shahnaz et al. (2019) examined the financial well-being across three different level income groups in Malaysia. The study's key finding revealed a notable trend within the low-income group, where individuals experienced heightened levels of financial stress and reported the lowest levels of financial satisfaction compared to counterparts in higher-income groups.

Notably, Khalil and Akhtar (2019) underscored that investors who exhibit positive investment behaviors can reap substantial benefits, particularly in terms of their overall financial well-being which aligned with the broader understanding that prudent financial choices contributed significantly to an individual's financial health.

Overconfidence Bias was Observed (2.65) by Millennial and Gen Z Investors in Calamba City as to the extent of motivational factors to invest in the Philippine stock market. All indicators were verbally interpreted as Observed. Furthermore, they "feel confident to evaluate securities prices in my investment portfolio myself" (highest computed mean of 2.89). Meanwhile, their "investments decisions can mostly earn higher than average return in the market" (lowest computed mean of 2.50). Motivational factors to invest in the Philippine Stock Market was observed as assessed by Millennial and Gen Z Investors in Calamba City in terms of Overconfidence Bias.

Table 1.3

Extent of Motivational Factors to Invest in the Philippine Stock Market observed as assessed by Millennial and Gen-Z Investors in Calamba City in terms of Overconfidence Bias

Indicators in terms of Overconfidence Bias	Gen Z		Millennials		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. I feel confident to evaluate securities prices in my investment portfolio myself	2.87	O	2.90	O	2.89	O	1
2. My past profitable investments were mainly due to my specific investment skills	2.68	O	2.66	O	2.67	O	2
3. My ability to predict future prices is better	2.44	PO	2.65	O	2.55	O	3
4. My investment decisions can mostly earn higher-than-average return in the market	2.32	PO	2.68	O	2.50	O	4
GENERAL ASSESSMENT	2.58	O	2.72	O	**2.65**	**O**	

Legend: 3.25 – 4.00 Fully Observed (FO) 1.75 – 2.49 Partially Observed (PO)
2.50 – 3.24 Observed (O) 1.00 – 1.74 Not Observed (NO)

The Millennial and Gen Z graduates in LCBA have a notable level of self-assurance in their ability to assess securities prices independently. However, this confidence is accompanied by a disparity on their capacity to surpass market performance. This result indicates an overall positive and self-assured outlook regarding their investment skills, and the disparity is pivotal for shaping educational efforts and support programs to improve their decision-making abilities and foster a well-rounded and informed approach to be profitable in the stock market.

Concerning the significance of Overconfidence Bias, Fernandez and Robles (2020) highlighted how investor confidence and sentiment, as motivational factors, impact the profitability of investments in the Philippine stock market. The study revealed a significant positive relationship between investor sentiment and stock market performance. When investor sentiment is high, indicating positive expectations and optimism, stock market returns tend to be higher, leading to increased profitability for investors. Conversely, when investor sentiment is low, indicating negative sentiment and

pessimism, stock market returns tended to be lower, affecting the profitability of investments.

Furthermore, Qasim et al (2019) concluded that overconfidence leads to an overestimation of the actual performance of securities. Economic theories suggested that investors should be rational and consider all available information before making decisions. However, in reality, due to the overwhelming amount of information, investors often resort to shortcuts in decision-making. Overconfidence prompted investors to take more risks, and decisions based on overconfidence are often irrational. When making investment decisions, an overconfident investor relied on personal beliefs rather than thoroughly evaluating all available information, resulting in decisions that may not be rational.

Similarly, Arquero et al. (2019) examined the stock market participation among students in the Philippines. The study revealed that students with more confidence and positive attitudes toward investing were more likely to participate in the stock market

Table 1.4

Extent of Motivational Factors to Invest in the Philippine Stock Market observed as assessed by Millennial and Gen-Z Investors in Calamba City in terms of Investment Risk

Indicators in terms of Investment Risk	Gen Z		Millennials		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. I consider myself a high-risk taker	2.61	O	2.93	O	2.77	O	5
2. If I unexpectedly received some easy money, I would surely invest a certain amount of money in stocks	2.88	O	3.18	O	3.03	O	2
3. I would prefer to invest in stocks rather than to keep money in a bank account	2.91	O	3.48	FO	3.20	O	1
4. I consider risk in investments as an opportunity	2.58	O	3.31	FO	2.95	O	3
5. In the investment process, if it happens, I would not mind losing some money	2.68	O	2.88	O	2.78	O	4
GENERAL ASSESSMENT	2.73	O	3.15	O	**2.94**	**O**	

Legend: 3.25 – 4.00 Fully Observed (FO) 1.75 – 2.49 Partially Observed (PO)
2.50 – 3.24 Observed (O) 1.00 – 1.74 Not Observed (NO)

Investment Risk was Observed (2.94) by Millennial and Gen Z Investors in Calamba City as to the extent of motivational factors to invest in the Philippine stock market. All indicators were verbally interpreted as Observed. Furthermore, they “prefer to invest in stocks rather than to keep money in a bank account” (highest computed composite mean of 3.20) meanwhile, the indicator they "consider themselves as a high-risk taker” (lowest computed composite mean of 2.77). This indicates that the motivational

factors to invest in the Philippine stock market was observed as assessed by Millennial and Gen Z Investors in Calamba City in terms of Investment Risk.

It can be surmised that Millennial and Gen Z investors at LCBA have a positive inclination toward investing in the Philippine Stock Market. This inclination is highlighted by a strong preference for allocating their funds into stocks rather than keeping them in a traditional bank account. The surveyed participants also express a willingness to invest unexpected money in stocks and maintain a mindset that remains undeterred by potential losses in the investment process. The results portray an optimistic sentiment among the surveyed investors or potential investors, with a significant emphasis on the attractiveness of stocks as an investment option. The participants' readiness to view risk as an opportunity and their openness to investing even in the face of potential losses further accentuate their positive outlook on participating in the Philippine Stock Market. This collective attitude indicates a broader trend among Millennial and Gen Z investors at LCBA, reflecting a readiness to confront the challenges and uncertainties inherent in stock market investments.

Grable et. al (2020) provided evidence to support the findings, by mentioning the “reflection effect” which meant that decision-makers must choose between options with gains and losses, the preference for positive outcomes often mirrored the preference for negative outcomes.

To emphasize, Bejano and Capistrano (2021) identified different dimensions of risk that influence Filipino youth investors’ motivation to invest, including financial risk, psychological risk, and information risk. Youth investors who perceived these risks as manageable and acceptable were more likely to engage in stock market investments. It also highlighted the importance of financial knowledge and experience in shaping youth investors' risk perception and behavior. Participants with higher financial knowledge and previous investment experience exhibit a more informed and cautious approach toward investment risks. They were more likely to conduct thorough research, diversify their portfolios, and make risk-conscious decisions.

Table 2.1

Level of Behavioral Intention to Invest in the Philippine Stock Market as assessed by Millennial and Gen-Z Investors in Calamba City in terms of Attitude

Indicators in terms of Attitude	Gen Z		Millennials		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. I have a positive attitude towards Investing in the Philippine stock market	3.01	I	2.98	I	3.00	I	4
2. I believe that investing in stocks is important to achieve my financial goals	3.17	I	3.16	I	3.17	I	1
3. I have a favorable opinion of the potential benefits of stock market investments	2.94	I	3.12	I	3.03	I	2

4. I perceive investing in the stock market as a beneficial activity	3.00	I	3.03	I	3.02	I	3
GENERAL ASSESSMENT	3.03	I	3.07	I	**3.05**	**I**	

Legend: 3.25 – 4.00 With Full Intention (FI) 1.75 – 2.49 With Partial Intention (PI)
2.50 – 3.24 With Intention (I) 1.00 – 1.74 No Intention at all (NI)

Attitude revealed an Intention (3.05) to invest in the Philippine stock market as assessed by Millennial and Gen Z Investors in Calamba City. All indicators were verbally interpreted as With Intention. Furthermore, they believe that “investing in stocks is important to achieve my financial goals” (highest computed mean of 3.17). Meanwhile, they “perceive investing in the stock market as a beneficial activity” (lowest computed composite mean of 3.02). Millennial and Gen Z Investors in Calamba City in terms of attitude had intention to invest in the Philippine stock market.

It can be deemed from the findings that the tables reveal a robust acknowledgment of the importance of stocks in fulfilling financial objectives among the surveyed Millennial and Gen Z LCBA graduates. This strong acknowledgment is reflected in their favorable opinions regarding the potential benefits of stock market investments which collectively contributes to the positive attitude observed in this group.

This positive inclination is fundamental in comprehending the behavioral intentions of these investors. It indicates willingness among the surveyed individuals to actively participate in stock market activities as a strategic component of achieving their overall financial goals. The data highlights not only a positive attitude toward investing but also an understanding among Millennial and Gen Z LCBA graduates of the instrumental role stocks play in realizing their financial aspirations. Moreover, it underscores their readiness to embrace the potential advantages and challenges associated with engaging in the stock market as part of their broader financial planning.

Mahardhika & Zakiyah (2020) cited that Attitude towards investment behavior had a positive effect on a person to respond constantly to an investment intention. Attitude toward a behavior was determined by a person’s principles about behavior and subjective assessment of their own understanding and the environment around them. This was done by associating certain behaviors with the several strengths or weaknesses of the principles that can be obtained when the individual does or does not do them.

Comparatively, Smith & Johnson (2019) mentioned the influence of attitude on Millennials' intention to invest in the stock market. Through a survey of Millennial investors, the study collected data on participants' attitudes toward stock market investment and their intentions to invest. The findings suggested that Millennials with more positive attitudes toward stock market investment are more likely to express a strong intention to invest. The study emphasized the importance of cultivating positive attitudes toward stock market investment among this demographic.

Chen et al. (2020) also examined the relationship between attitude towards stock market investment and behavioral intention among Generation Z investors in China. The findings of the study indicated a positive relationship between attitude towards stock market investment and behavioral intention among Generation Z investors. In other

words, individuals who held more positive attitudes towards stock market investment were more likely to express a higher intention to invest in the stock market..

Table 2.2

Level of Behavioral Intention to Invest in the Philippine Stock Market as assessed by Millennial and Gen-Z Investors in Calamba City in terms of Subjective Norm

Indicators in terms of Subjective Norm	Gen Z		Millennials		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. Most people that are important to me, also invest in the Philippine stock market themselves	2.04	PI	2.06	PI	2.05	PI	3
2. Most people that are important to me, regard Philippine stock market investment as positive	2.70	I	2.61	I	2.66	I	2
3. Most people whose opinion I highly respect, would approve and recommend me to invest in the Philippine stock market	2.99	I	3.01	I	3.00	I	1
GENERAL ASSESSMENT	2.58	I	2.56	I	**2.57**	**I**	

Legend: 3.25 – 4.00 With Full Intention (FI) 1.75 – 2.49 With Partial Intention (PI)
2.50 – 3.24 With Intention (I) 1.00 – 1.74 No Intention at all (NI)

Subjective Norm revealed an Intention (2.57) to invest in the Philippine stock market as assessed by Millennial and Gen Z Investors in Calamba City. Furthermore, participants indicated that “most people whose opinion are highly respected would approve and recommend them to invest in the Philippine stock market” (highest computed composite mean of 3.00). Meanwhile, the indicator “most people important to them also invest in the Philippine stock market themselves” (lowest computed composite mean of 2.05). Millennial and Gen Z Investors in Calamba City in terms of subjective norms have intention to invest in the Philippine stock market.

It can be concluded that respected individuals play a crucial role in influencing the intention to invest among the surveyed participants. This emphasizes the importance of their social approval in shaping the decision-making process regarding stock market investment. However, a contrasting perspective emerges, evident in the lowest mean for the indicator related to the actual investment involvement of the important individuals themselves in the Philippine stock market. This indicates a potential disparity between the intention to invest and the real investment practices of individuals considered important by the participants.

This discrepancy can be attributed to various factors such as individual risk tolerance, financial circumstances, or differing views on the perceived benefits and risks of stock market investment. Understanding this is crucial for devising targeted strategies that align individual intentions with the influence of respected figures in the decision-making process. It highlights the need for interventions that address the potential misalignment and encourage a more coherent and collective approach to stock market investment within this demographic.

Considering the data presented above, Raut et.al. (2018, as cited in Bihari et al., 2022) found that subjective norms had a favorable relationship with the intention to invest. Subjective norms became a basis of the social influences of social circles that were influential in shaping someone's attitude (i.e., family and friends). The more hype or popular the investment product/ stock in his social group, the higher the probability of an investor buying or investing in it. Those significant referents were crucial in decision-making because investors found the acceptance of other's decisions, even though the investment is risky.

Another key point, Scandroglio (2019, as cited in Shin et al. 2019) mentioned was that the subjective norm was not significantly linked to the investor's intention to invest. This disconnect was attributed to the personal nature of financial dealings, where individuals may not be significantly persuaded by societal expectations or norms. Especially when it comes to stock market investments, people care more about their values, how much risk they can manage, and their unique situations rather than conforming to external societal expectations. Some people also depended on others' perceived trading knowledge when investing in the stock market, which may or may not motivate them to invest. This underscored the intricate and multifaceted nature of factors influencing investors' intentions in the dynamic landscape of financial markets.

Table 2.3

Level of Behavioral Intention to Invest in the Philippine Stock Market as assessed by Millennial and Gen-Z Investors in Calamba City in terms of Perceived Behavioral Control

Indicators in terms of Perceived Behavioral Control	Gen Z		Millennials		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. I feel very confident to be able to engage in Philippine stock market investing	2.90	I	2.82	I	2.86	I	1
2. I am capable of selecting stock	2.75	I	2.61	I	2.68	I	3
3. I understand and can easily follow the development of stocks	2.75	I	2.69	I	2.72	I	2
GENERAL ASSESSMENT	2.80	I	2.71	I	**2.76**	**I**	

Legend: 3.25 – 4.00 With Full Intention (FI)
2.50 – 3.24 With Intention (I)
1.75 – 2.49 With Partial Intention (PI)
1.00 – 1.74 No Intention at all (NI)

Perceived Behavioral Control revealed an Intention (2.76) to invest in the Philippine stock market as assessed by Millennial and Gen Z Investors in Calamba City. All indicators were verbally interpreted as With Intention. Furthermore, the surveyed participants "feel very confident to be able to engage in Philippine stock market investing" (highest computed composite mean of 2.86). Meanwhile, the indicator they are "capable of selecting stock" (lowest computed composite mean of 2.68). Millennial and Gen Z Investors in Calamba City in terms of perceived behavioral control had intention to invest in the Philippine Stock Market.

The overall positive inclination, with all indicators, suggests that Millennial and Gen Z investors in Calamba City feel motivated and confident about engaging in the Philippine stock market. This reflects a notable level of self-assurance among participants which is a positive indicator, as confidence is a key factor in encouraging individuals to take active steps in investment activities. Although the indicator "I am capable of selecting stock" had the lowest mean, it still falls within the intention range. This suggests that while participants express a degree of confidence, there might be a slightly lower perceived capability in the specific task of stock selection, and addressing these perceived limitations could further enhance their overall preparedness and efficacy in stock market participation.

Warsame & Ireri (2018, as cited in Hapsari 2020) mentioned that the perceived behavior control had a significant connection with the investing intention. Mindfulness, skill, experience, and capital affect people in the investment behavioral process. Investors who had longer exposure to investment activities became more inclined and that would lead to positive behavioral intention.

Correspondingly, Praja et al. (2020, as cited in Kusuma et al. 2020) defined intention as an individual's desire, either immediate or long-term, to undertake a given activity. In their study, Ejigu and Filatie (2020) explored the variables of investment intention in micro and small firms among business students in their study. According to the study's findings, financial literacy, perceived behavioral control, projected return, attitude, perceived trust, and perceived risk were significant predictors of students' propensity to engage in micro and small businesses.

Also worth mentioning, Ruby et al. (2019) mentioned the perception of ease or difficulty in carrying out an action that reflected experiences experienced. They claimed that if the investor thought that an action is easy to do without any significant obstacles, the individual immediately manifested the intention to take an action or behavior to be realized.

Table 3.1

Test of Significant Difference on the Assessment of the Millennial and Gen Z as to the Extent of Observance of Motivational Factors to Invest in the Philippine Stock Market

Sub-variables		Sum of squares	df	Mean square	F Ratio	Sig.	Remarks	Decision
Financial Knowledge	Between Groups	.727	1	.727	1.689	.195	Not Significant	Accept H_o
	Within Groups	111.074	258	.431				
	Total	111.801	259					
Financial Well-being	Between Groups	.650	1	.650	3.192	.075	Not Significant	Accept H_o
	Within Groups	52.539	258	.204				
	Total	53.189	259					
Overconfidence Bias	Between Groups	1.388	1	1.388	3.947	.048	Significant	Reject H_o
	Within Groups	90.762	258	.352				
	Total	92.150	259					

Investment Risk	Between Groups	11.550	1	11.550	22.250	.000	Significant	Reject H_o
	Within Groups	133.927	258	.5199				
	Total	145.478	259					

Level of significance 0.05

There was a significant difference between the responses of the Millennial and Gen Z respondents regarding the specified variables. The test of significant difference had a probability value, overconfidence bias and investment risk of .048, and .000, respectively. These values were both less than the level of significance of 0.05, thus, rejecting the null hypothesis. Meanwhile, it was determined that there was no significant difference in financial knowledge and financial well-being in the assessment of their observance of motivational factors for investing in the Philippine stock market. The computed probability values for financial knowledge and financial well-being were 0.195 and 0.075, respectively. this suggested that in the context of observing motivational factors for investing in the Philippine stock market, there was no statistically significant difference between the Millennials and Gen Z regarding their financial knowledge and financial well-being.

In a study conducted by Riska (2020), she mentioned that there was no significant difference in motivation between these two generational cohorts implied that, according to the study's measured parameters, Millennial and Gen Z exhibited similar levels of drive or incentive when it comes to making decisions about investments. This lack of significant difference in motivation suggests a certain degree of uniformity in the factors driving individuals from Generation Z and Millennials to engage in investment activities.

Table 3.2

Test of Significant Difference on the Assessment of the Millennial and Gen Z as to the Level of Behavioral Intention to Invest in the Philippine Stock Market

Sub-variables		Sum of squares	df	Mean square	F Ratio	Sig.	Remarks	Decision
Attitude	Between Groups	.127	1	.127	.185	.667	Not Significant	Accept Ho
	Within Groups	177.010	258	.686				
	Total	177.137	259					
Subjective Norm	Between Groups	.022	1	.022	.053	.818	Not Significant	Accept Ho
	Within Groups	108.093	258	.419				
	Total	108.115	259					
Perceived Behavior Control	Between Groups	.584	1	.584	.873	.351	Not Significant	Accept Ho
	Within Groups	172.514	258	.669				
	Total	173.098	259					

Level of significance 0.05

There was no significant difference in the attitude, subjective norm, and perceived behavior control of the Millennial and Gen Z investors as to the level of behavioral intention to invest in the Philippine stock market. It had probability values of 0.667, 0.818, and 0.351, respectively. This suggested that in the context of the level of behavioral intention to invest in the Philippine stock market, there was no statistically significant difference between Millennial and Gen Z Investors.

Rizaldy (2020) investigated the generational effects of financial literacy and investment experience were analyzed within both groups. According to the findings, the mean for investment decisions among Millennials was slightly higher than that of the Generation Z group, indicating a tendency for Millennials to prioritize socially responsible investments. These inclinations could impact the observation and interpretation of motivational factors. Moreover, Rizaldy highlighted that the generational group cannot serve as an independent variable directly influencing investment decisions. However, when the generational group controlled financial literacy and financial behavior, the impact of financial literacy and financial behavior becomes more evident.

Table 4

Test of Significant Relationship between the Extent of Observance of Motivational Factors and the Level of Behavioral Intention to Invest in the Philippine Stock Market as assessed by Millennial and Gen Z Investors in Calamba City

Extent of Observance of Motivational Factors	Behavioral Intention	r value	P value	Remarks	Decision
Financial Knowledge	Attitude	.298**	.000	Significant	Reject H_0
	Subjective Norm	.172**	.004	Significant	Reject H_0
	Perceived Behavior Control	.254**	.000	Significant	Reject H_0
Financial Well-being	Attitude	.312**	.000	Significant	Reject H_0
	Subjective Norm	.217**	.000	Significant	Reject H_0
	Perceived Behavior Control	.292**	.000	Significant	Reject H_0
Overconfidence Bias	Attitude	.139**	.009	Significant	Reject H_0
	Subjective Norm	.253**	.000	Significant	Reject H_0
	Perceived Behavior Control	.351**	.000	Significant	Reject H_0
Investment Risk	Attitude	.207**	.000	Significant	Reject H_0
	Subjective Norm	.372**	.000	Significant	Reject H_0
	Perceived Behavior Control	.290**	.000	Significant	Reject H_0

**Correlational at the level 0.01 *Correlational at the level 0.05(Two-tailed)

There was a significant relationship between the extent of observance of motivational factors and the level of behavioral intention as evidenced by the r values ranging from .172 to .372 interpreted as Low Positive Correlation. The computed probability values .000, 004, and 0.009 were less than the level of significance ($P<0.05$); thus, rejecting the null hypothesis.

It can be concluded that the extent of observance of motivational factors has a significant relationship with the level of behavioral intention to invest in the Philippine stock market as assessed by Millennial and Gen Z Investors in Calamba City. The higher the observance of motivational factors, the higher the behavioral intention. When the observation of motivational factors increase, behavioral intention also increases.

Several researchers, including Aren and Aydemir (2015, as cited in Sumiati et al., 2021), verified the significant positive effect of motivational factors on stock market investment intention. They argued that individuals with higher financial literacy were more

likely to express a greater intention to invest. Both basic and advanced financial knowledge showed a positive and significant effect on the intention to invest in risky instruments. The impact of financial literacy, including both subjective and objective aspects, also yielded significant results on the intention to participate in the stock market.

According to Yang et al. (2021), insignificant effects of financial well-being and financial literacy on stock market investment intention but confirmed the significant effect of Motivational Factors for Investment Risk and Overconfidence bias on stock market participation.

Table 5

The Proposed Action Plan

MAIN GOAL: To enhance the motivation and the behavioral intention of Millennial and Gen Z investors in Calamba City to invest in the Philippine Stock Market

KEY AREAS	OBJECTIVES	STRATEGIES/ ACTIVITIES	FREQ-UENCY	PERSONS INVOLVED	SUCCESS INDICATORS
Develop educational initiatives and financial workshops	To enhance financial literacy, investment knowledge, and the understanding of stock market dynamics to empower investors with the modern tools to make informed decisions.	Conduct regular financial literacy seminars; Develop online courses on investment basics and stock market dynamics.	Quarterly seminars	Financial experts and educators	Increased participation in seminars and collect feedback from at least 90% of participants. Attain at least 20% growth in the Millennials and Gen Z investors.
	To provide workshops that focused on practical financial management, budgeting, and goal setting, providing tools and strategies to help Millennials and Gen Z investors align their financial goals with their investment decisions	Conduct in-person or virtual workshops on financial management. Provide tools and templates for setting financial goals.	Quarterly financial planning workshops	Financial planners and advisors. Workshop facilitators.	Increased participation in workshops and collect feedback from at least 90% of participants. Attain at least 20% growth in the investors that will be profitable in the stock market investing
Community Engagement and Peer Networks:	To foster a sense of community among Millennial and Gen Z investors in Calamba City through events, forums, and networking opportunities.	Organize an investment-themed events and meet-ups.	Quarterly networking sessions. Annual investment-themed events.	Community managers. Guest speakers and mentors.	Achieve at least 20% increase in online community membership, measured by engagement metrics.
	To build a supportive investment community within Calamba City that can contribute to shared knowledge, investment experiences, and encouragement, to invest in the Philippine Stock Market.	Establish an online forum or social media group for discussions.	Regular community meetings. Annual recognition events.	Community leaders and moderators. Guest speakers for knowledge-sharing.	Achieve at least 20% increase in online community membership and collect feedback from at least 90% of the member community.
Partnerships with Local Institutions:	To collaborate with local educational institutions, community organizations, and businesses that support financial education and investment initiatives to reach a wider audience and create a more	Forge partnerships with schools for financial literacy programs. Collaborate with local businesses for sponsorship or support.	Annual financial literacy campaigns in schools. Regular business	Education coordinators. Business development team.	Increase participation and successful partnerships with at least 20% of local businesses, and ensure a 90% satisfaction rate for

comprehensive approach to enhancing motivation.	partnership meetings	Community outreach coordinators.	community impact through events

Conclusions

Based on the research findings, the following conclusions were drawn:

1. That Millennial and Gen Z LCBA graduates consistently observed and displayed agreement in the motivational factors to invest in Philippine Stock Market in terms of Financial Knowledge, Financial Well-being, Overconfidence Bias, and Investment Risk. This indicates that LCBA graduates exhibit an active engagement in financial knowledge, demonstrating a positive attitude towards investing in the Philippine Stock Market. The collective results underscore their strong dedication to long-term financial planning and security. However, despite this commitment, a gap exists between their aspirations for financial well-being and the current financial circumstances, posing challenges in meeting obligations and goals. Millennial and Gen Z LCBA graduates display notable self-assurance in independently assessing securities prices, but with limited capacity to surpass market performance, emphasizing the importance of shaping educational efforts and support programs to enhance decision-making abilities and foster a well-rounded approach to stock market participation. Additionally, their favorable attitude towards risk and willingness to invest unexpected money in stocks reflect a mindset and eagerness to invest in the Philippine stock market.

2. That Millennial and Gen Z LCBA graduates have positive intention to invest in Philippine Stock Market in terms of Attitude, Subjective norms, and Perceived Behavior Control. Their preference for allocating funds to stocks, positive attitude towards risk, and willingness to invest even in the face of potential losses underscore their overall optimistic outlook. This collective attitude suggests a broader trend among LCBA's Millennial and Gen Z investors, indicating a readiness to navigate challenges in stock market investments. Also. respected individuals play a crucial role in influencing investment intentions, emphasizing the significance of social approval in decision-making. However, a notable contrast emerges, revealing a potential misalignment between the intention to invest and the actual investment practices of influential individuals. Despite this discrepancy, the overall positive inclination among participants indicates a reasonable motivation and confidence in engaging in the Philippine stock market. The slightly lower perceived capability in the specific task of stock selection, suggests room for improvement. Addressing these perceived limitations could further enhance overall preparedness and efficacy in stock market participation, building on the existing notable level of self-assurance.

3. That Millennial and Gen Z investors differ significantly in their tendencies related to overoptimism and their perception of risks associated with investing in the Philippine Stock Market, but they indicate a shared understanding or approach to financial knowledge and well-being, emphasizing commonalities between the two generations in these particular domains. Regarding the level of behavioral intention to invest in the

Philippine Stock Market, Millennial and Gen Z investors share similar intentions and perspectives.

4. That if the investors exhibit higher levels of observance in motivational aspects such as financial knowledge, financial well-being, overconfidence bias, and investment risk their behavioral intentions to invest also tend to increase.

5. That the proposed action plan is necessary to further enhance the motivation and the behavioral intention of Millennial and Gen Z Investors in Calamba City to invest in the Philippine Stock Market.

Recommendations

From the above conclusions, suggestions and recommendations were listed below:

1. To develop and implement educational programs that specifically target the identified gap in this study between aspirations for financial well-being and current financial status among Millennials and Gen Z investors in Calamba City. Programs may be provided to focus on practical financial management, budgeting, and goal setting. The community can collaborate with local educational institutions, financial experts, and industry professionals to organize workshops, seminars, and mentorship programs.

2. Recognizing and addressing the influence of family and colleagues on the investment decisions of Millennials and Gen Z investors in Calamba City, the community may collaborate with financial experts or successful investors to create awareness campaigns, specifically targeting those who may influence the investment decisions of Millennials and Gen Z investors, utilize various communication channels, including local media, social media platforms, and community events to disseminate information about the importance of making informed and consistent investment decisions.

3. To establish partnerships with local bank or financial institutions to create accessible and tailored financial products specifically designed for Millennial and Gen Z investors in Calamba City, they may work with these institutions to offer a range of investment options for each generational group with varying risk levels, ensuring alignment with the risk tolerance and financial goals of the youth demographic.

4. To prioritize the development of tailored educational programs that focus on improving financial knowledge, financial well-being, and the understanding of overconfidence bias and investment risks, these programs may be designed to be interactive, incorporating real-world scenarios and practical insights as they directly impact the confidence and intentions of Millennial and Gen Zs to invest in the Philippine Stock Market focusing on this motivational factor will empower investors by providing them with the necessary knowledge and skills to make informed decisions.

5. To implement a feedback mechanism to gather insights from Millennial and Gen Z investors on the effectiveness of the proposed action plan and to regularly assess

educational, support programs, and make necessary adjustments based on feedback, the community may organize feedback sessions, focus groups, or online forums to facilitate open communication and ensure that future initiatives are refined based on the evolving needs and challenges faced by the Millennial and Gen Zs.

6. There is a clear scarcity of literature on the subject. It is recommended that further research on motivational factors and behavioral intentions to invest in the Philippine Stock Market among Millennials and Gen Z may be conducted. Specific areas of investigation, such as exploring the impact of modern technology or examining the role of social media in shaping investment decisions to contribute valuable insights to the existing body of knowledge may be focused on.

Compliance with Ethical Standards

Ethical consideration was among the most crucial aspects of the research. Before proceeding with the data collection process, consent or ethical approval from the respondents was obtained to guarantee that the study adhered to ethical guidelines. In line with ethical research practices and to ensure transparency, attempts were made to contact the author for permission to adopt their instrument, yet no response was received. Throughout the research process, utmost care was taken to preserve the privacy and security of the information, ensuring the responsible and respectful conduct of the study.

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NARRATIVES OF THE TEACHERS IN GEOGRAPHICALLY ISOLATED AND DISADVANTAGED AREAS

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ABSTRACT

This study entitled “Narratives of the Teachers in Geographically Isolated and Disadvantaged Areas” aimed to depict the stories of the teachers in far-flung schools, their coping strategies, and insights towards policy formulations and interventions for schools in remote areas. The qualitative-descriptive phenomenological approach was used. The data were collected from 8 teachers in GIDA elementary schools of South Upi, Maguindanao. One-on-one interviews and Focus-Group Discussions (FGD) were used by the researcher to gather the data. Employing thematic analysis of data revealed that far-flung teachers had various experiences and defined them as the Yin and Yang of Teacher’s Life. These consist of two sub-themes arduous journey of the teachers in the far-flung school which refers to struggles and difficult experiences; and light and hope in the midst of struggle which describes the positive and light experiences. The far-flung teachers cited their coping strategies which described them as social support system that relates to the support they get from the parents, community, agencies, and concerned partners; problem-solving strategy which refers to practical solutions to problems; acceptance and devotion to work tell the teacher’s dedication; and burning desire to help the entire community.

Keywords: *Narratives, Experiences, Coping Strategy, Insights, Geographically Isolated and Disadvantaged Areas, Far-flung Areas, GIDA, aspirations, motivations, Geographically Challenged Schools*

INTRODUCTION

The 1987 Philippine Constitution, Article XIV, Sec. 1 stated that the state shall protect and promote the right of all citizens to quality education at all levels and shall take appropriate steps to make such education accessible to all. Apparently, in the Philippines, the number of out-of-school youth rose at the onset of the pandemic from 16.9 percent in January 2020 to 25.2 percent three months later in April 2020, based on a study released by the US Agency for International Development in November 2021 (Bautista, 2022).

Quality education is what we believe to be our foundation for a good future. However, not all children are assured of a good education and therefore, a good future. This has been a challenge for children living in far-flung areas who face different difficulties in going to school – such as walking great lengths to reach their destination, including going up the mountains or crossing rivers and lakes. For children living in far-flung areas, receiving quality instruction as well as education appears to be an extensive shot as they contend with a lack of resources.

In the context of the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), teachers from all over the region intensively embarked on providing quality education as it is one of the 12-point agenda of the Ministry of Basic, Higher and Technical Education (MBHTE) - “No Bangsamoro Child Left Behind” in terms of access to quality and relevant educational services. As of August 2022, the department recorded at least 918, 621 learners in BARMM (DepEd, 2022). Furthermore, the World Bank (2019) found out also that, out-of-school youth and adults have thus accumulated over the generations in BARMM – almost 45% of 16-30 years old are out-of-school in BARMM, double the national average. In response to the regional mandate and to reach every child across the region, schools have been established even in remote areas. The teachers assigned to these schools have distinct and diverse experiences and stories worthy of being told, shared, and heard. Brillantes & Nebria, (2021) described that most of them (teachers) felt struggled and were challenged in arriving at the school, knowing they will be assigned to schools that are really on top of the mountains.

The Department of Health (DOH) defines geographically isolated and disadvantaged areas or GIDA as communities with marginalized populations, physically and socio-economically separated from mainstream society. It can be due to physical factors such as distance, weather conditions, transportation difficulties (island, upland, lowland, landlocked, hard-to-reach, and unserved and underserved communities), or socio-economic factors like high poverty incidence, presence of vulnerable factors or communities in or recovering from the situation of crisis or armed conflict.

Additionally, South Upi Municipality is a fourth-class municipality with 46,342 hectares (MENR, 2022) total land mass area. It consists of only eleven (11) barangays and there were still areas within that are isolated and difficult to access. Yet, there were schools built in these areas to reach more learners and make education more accessible to all, and apparently, these realities shaped the impression that teachers in the area were

burdened to travel to and from the nearest accessible roads. Similarly, Quejada and Orale (2018), described teaching in remote schools as a huge challenge. Although, given the challenges faced by the teachers, they still found a reason to keep going, (Hipolito, 2022). Thus, teachers are intrinsically motivated, passionate, and committed to providing much-needed educational services in these isolated areas. The above-cited realities faced by the teachers in geographically isolated and disadvantaged areas led the researcher to find out their experiences and the coping strategies in teaching with the challenges they've encountered.

Research Questions

Generally, this study aimed to explore teachers' narratives in the Geographically Isolated and Disadvantaged Area (GIDA) of South Upi District. Particularly, this study sought to find answers to the following questions:

1. What are the experiences of the teachers in the Geographically Isolated and Disadvantaged Area (GIDA)?
2. What are the coping strategies used by the teachers in facing the challenges encountered?
3. What are the insights of the teachers on policy formulations and interventions for schools in GIDA?

Narrative as an arts-based inquiry is simply an elegant and exceptionally useful way to uncover nuance and detail about previous experiences. Narrative inquiry is not simply storytelling; it is a method of inquiry that uses storytelling to uncover nuance. Stories heal and soothe the body and spirit, providing hope and courage to explore and grow. The process of storytelling, a fundamental element in narrative inquiry, provides the opportunity for dialogue and reflection, each intertwined and cyclical (Wang & Geale, 2015). Genuinely, the stories of these teachers, their joys, and their pains in teaching in geographically challenged communities of South Upi are worthy of being heard and shared at this time. In return, these reflections of experience will serve as a solid background of knowledge for teachers and effectively use this knowledge in the art and science of teaching. As affirmed by Hipolito (2022), allowing the teachers to recollect their stories enables them to look clearly into their experience, determine the challenges that arise, think of strategies to overcome them next time, investigate other possibilities, and accumulate lessons that will make them stronger and better prepared.

METHODOLOGY

This study utilized a qualitative descriptive phenomenological design. This approach was employed to gain deeper insights into how we will understand the teachers' experiences in geographically isolated places in South Upi, as well as how they cope with the challenges of their experiences as teachers. The participants were allowed to converse about their perceptions freely and comfortably. Focus-group discussion and an

interview were employed using guide questions to ensure that the discussions stayed on track. In this phenomenology study, the researcher was responsible for formulating an interview guide to elicit answers to the research questions. Correspondingly, the interview guide was submitted to content and face validation by experts. The researcher used purposive sampling to identify the participants of this study. Eight (8) far-flung teachers in South Upi District were subjected to an interview. These teachers were assigned to schools that were classified as far-flung schools and were geographically distant from each other. The researcher collected the data by himself. Responses were recorded, coded, and later transcribed. In analyzing the data, the researcher rigorously followed the six phases of thematic analysis such as 1) familiarization; 2) coding; 3) generating themes; 4) reviewing themes; 5) defining and naming themes; and 6) reporting (Braun and Clarke, 2006; Caufield, 2019). In naming themes, these were phrased concisely and were made punchy to give the reader a sense of what the theme is all about (Braun and Clarke, 2006). There were also communication letters explaining the conduct of the study to participants of the study to give information about the research, seek consent, and at the same time set an appointment for a one-on-one discussion and a focus group discussion. Participants were given codes such as Teacher A, Teacher B, and so on to achieve confidentiality in the responses they made. An audio recorder was used to record the insights, perspectives, and reflections of the participants but with their consent to ensure the veracity of the statements given. In this way, it ensured the correctness and success of the manuscript to be produced. The researcher also conducted Focus Group Discussions to gather further evidence on their experiences as a teacher in far-flung schools. This further established a variety of standpoints and perspectives that deeply enhanced and supported the study which cannot be accomplished only by merely one-on-one interviews. This study was purely narratives in nature. Wang et.al (2017) described that stories can serve as a primary means for understanding the pattern of an individual life.

RESULTS

Table I. Experiences of Teachers in Geographically Isolated and Disadvantaged Areas

Clustered Themes	Emergent Themes
Experiences of Teachers 1. Distance and the Difficulty of Transportation 2. Bad weather conditions (Storms/typhoons) that caused rivers and creeks to flood 3. GIDA is left out of the latest trend 4. Lack of Classrooms and enough supply of other resources 5. Insufficient books, no paper and pencils 6. Poor physical status of the buildings 7. Limited instructional materials available 8. Multigrade classes due to lack of teachers	1. Geographical Location of the School 2. Situations in GIDA 3. Inadequate facilities 4. Lack of Teachers

9. There are few people in the areas, and houses are typically far from each other	5. Less populated areas
10. Many Pupils but with only a few teachers teaching in the school	6. Huge Class Populations
11. Low Remuneration of Volunteer Teachers teaching in GIDA	7. Low salary
12. Parents have limited to no educational background	8. Lack of Education or Illiterate Parents
13. Parents have no stable job	9. Poor Socio-economic
14. Parents depend on teachers	10. Due to no education parents depend on teachers for their errands
15. Learners are slow learners	11. Slow learners
16. Teaching learners the basics of 3R's	12. Pupils Low Educational Performance
17. Level down the difficulty of the topics	
18. Teaching the sound of a particular letter in grade 5 class	
19. Low self-esteem of learners	
20. Parents cannot assist their children with their schoolwork	
21. Difficulty in Communication	13. Linguistic barrier between teachers and learners
22. Different cultural orientations between teachers and learners	
23. Translations of the lesson into the learner's mother tongue	14. Learners are used to their mother tongue
24. Community love and care	15. Community Support/Parents supports
25. Supportive Parents	
26. Learning while working	16. Prospect for growth
27. Adapted to the lifestyle in a remote area	17. The joy of seeing pupils' dreams come true
28. Learner's success makes teachers in GIDA happy and accomplished	
29. Helping far-flung learners	
30. No overage learners in the community	

Table 1 revealed that the narrations of the teachers in geographically isolated and disadvantaged areas of South Upi were a combination of positive and difficult experiences. The distance of walking or horse-riding made their life challenging in the far-flung areas. The situation was even more difficult during bad weather conditions like heavy rains, storms or typhoons, and even flash floods. Teachers also claimed that GIDA schools are being left out by the latest educational trends. More than that, schools were also confronted with classroom shortages, oversized class populations, insufficient learning materials, low compensation or remuneration for volunteer teachers, teacher shortages, language barriers, underachieved learners, and even illiterate parents. However, these teachers also narrated positive experiences they encountered such as

the amount of support they got from the parents and the community in school-related activities and programs, their positive experiences are made up of the learning they derived from their situations because of the hardships they encountered which served as an opportunity for them to grow and develop, their ability to accustom from the lifestyle of the school they are assigned to, and the bizarre feeling of joy seeing their learners succeed or accomplished something inspires them to do better in teaching.

Table II. The Coping Strategies Used by the Teachers in Facing the Challenges Encountered

Clustered Themes	Emergent Themes
Coping Strategies 1. Strengthening Parent-Teacher Association 2. Parents support teachers not just in school activity but also outside including their transportation 3. Attend relevant training to improve teaching strategies 4. Referred to past teachers or administrators on their techniques while they were still in GIDA 5. Coordination with the BLGU and LGU 6. Teachers focused on teaching *3R's* (Reading, Writing, and 'Rithmetic) to their slow learners 7. Utilized readily available books 8. Surf online for learning materials 9. Teaching requires sacrifices 10. Teachers having the same culture and language can easily cope 11. Loving one work and doing your best in teaching is one way to cope 12. Having pledged to teach and knowing the nature of a teaching career 13. At the end of the day, learners must have something to learn 14. Help the IP learners to learn since it is the teachers' responsibility to do it 15. It is God's way to be assigned in the remote areas 16. Family is also a source of motivation for teachers to teach in the area	1. Parent and Community Support 2. Training and Seminars provided by NGOs and MBHTE 3. Learning from the past 4. Linkages and Partnerships 5. Problem Solving 6. To solve problems of inadequate teaching and learning materials teachers surf the internet for online sources available 7. Teachers' devotion to a teaching career 8. Passion 9. Burning Desire to Help the learners and community

This table shows the coping strategies used by the teachers in facing the challenges they encountered in teaching. To deal with the challenges, the teachers strengthened the Parent-Teacher Association and maximized their potential for the benefit of the school, teachers let the association facilitate the project toward its completion. Parents' support was shown not just inside the school premises, but even with the

teachers' transportation they helped teachers cross rivers successfully. The result also shows that training and other professional development activities are beneficial for teachers to improve themselves to be even more responsive to the needs of their learners. They established strong partnerships with BLGU and LGU to gain more support. On the matter of learners' academic performance, the teachers focused on the 3Rs – reading, writing, and arithmetic. In the same way, teachers utilized online materials to resolve the developing concerns on textbooks and other learning. A teaching career in the GIDA involves sacrifices which means you must endure all the discomforts and struggles just to deliver the educational services needed by the learners. They also shared that loving what they are doing, being passionate about what they do in the remote areas and having pledged to a teaching career have helped them cope with the challenges they experienced. Teachers who are Indigenous People easily cope in geographically challenged areas, they narrated that they wanted to educate their co-IPs and have an education just like what they had. More than just an assignment, teachers looked at it as God's divine provision to teach in GIDA, they believed that God had purposely led them in this life because they could be of great help. Family is one factor also that motivates teachers assigned to GIDA.

Table III indicates the insights, recommendations, and aspirations of the teachers based on their experiences. This shows that they recommend additional teachers seeing that one major problem they encounter is the lack of teachers, additional classrooms, more learning resources, infrastructure like bridges, road constructions for easy transportation, and electrification in GIDA schools. Teachers' aspirations involved promotion, transfer to nearby accessible schools, salary increase, and benefits like hazard pay. Their source of motivation includes the situations of the people, and the learners in the area, their family became one of their motivations to teach in GIDA.

Table III. Insights, Recommendations, and Aspirations of the Teachers in GIDA

Clustered Themes	Emergent Themes
Insights, Recommendations, and Aspirations of the Teachers in GIDA 1. Deployment of regular teachers in GIDA 2. Add more teachers with the same cultural backgrounds as the community 3. School building renovations 4. The makeshift classroom building must be replaced with a permanent and concrete school building 5. Provision of Learning Materials 6. Prioritization of GIDA in terms of teaching and learning materials 7. Computers to keep abreast with the technological advancement 8. Bridge construction 9. Road improvements or construction 10. Electrification project in schools 11. Be given a chance for Teachers' promotion 12. Transfer to a nearby schools 13. Increase Volunteer teacher's honorarium 14. Hazard pays 15. Helping the learners in the area made the teachers stay in GIDA	1. Additional Teachers 2. Additional Classrooms 3. Learning Materials or Resources 4. Infrastructure 5. Career Advancement/Progress 6. Salary Increase 7. Noble Intentions

DISCUSSION

Theme I: Experiences of the Teachers in Geographically Isolated and Disadvantaged Areas

The following are emerging themes summarized by the researcher based on the narratives of the teacher-participants of their experiences.

I.1. *Yin and Yang* of Teacher's Life

This theme characterizes the experiences of the teachers in far-flung schools of South Upi. This theme appeared predominantly in the responses gathered from the

participants, as some of them described their experiences to be challenging but truly rewarding as they also experienced positivity amid adversities.

Just as the *yin and yang* symbol that describes everything in life has two opposite sides, we must maintain it balanced to work on both sides pleasantly. Teachers in far-flung schools are flooded with stories of struggles that can almost succumb to their chosen profession but having looked at their stories of successes, inspired and motivated them to go further and become resilient enough for the learners, parents, and the community in general.

Far-flung teachers revealed diverse stories they encountered and were classified into two sub-themes such as the arduous journey of the teachers in the far-flung schools, and light and hope in the midst of struggles. The sub-themes that emerge based on the common answers were presented in the succeeding discussions.

I.1.1. Arduous Journey of the Teachers in the Far-flung Schools

This sub-theme is the shady experiences of the teachers. It describes the pains, struggles, dilemmas, and tough experiences of teachers in geographically isolated and disadvantaged areas. A teaching career is one of the noblest and most rewarding professions. It requires the ability to do more with less, dedication, and passion, and it takes a lot of patience to become a real one. In this study, far-flung teachers cited innumerable obstacles, dangers, or risks they must face just to reach their school assignments. These difficulties were grouped into categories and were given names based on the narratives of the teacher-participants provided. These are the following: school setting, inadequate facilities, teachers' unavailability, illiterate parents, teachers' low salary, pupils' learning status, and linguistic barrier.

School Setting

The school setting refers to the geographical location of the school. Basically, it includes the distance, means of transportation, time spent traveling to school, weather conditions as well as a description of the school's location. It came out in the conversations that six (6) of the far-flung teachers were concerned with the distance, they must travel for it's too risky and tiring.

> With a serious face, *Teacher A* said "My experience as a teacher in GIDA is "*yung sobrang layo ng school sa bahay*" you need to hike more or less two hours before you reach the school. Then sometimes when there are storms or typhoons, you have to cross the river even when it floods." Apart from heavy rains, typhoons, or floods, these teachers also had to endure the scorching heat of the sun when they traversed the rugged road to school. Fundamentally, teachers in far-flung must be resistant enough to be able to reach the schools where they are assigned.
>
> *Teacher E* lightly noted "I started [teaching in a far-flung school] as a volunteer. [Back then] I had to walk for a 1-kilometer distance from home to school. So, it is really hard due to financial needs. I had to cross a river and during heavy rains, it scared me because the river cannot be crossed if it flooded. Due to distance also, I have to bring my food for a day." Typically, these rivers do not have any bridges to use when they flood. The teachers at times may wait for the floods

to subside and or even look for someone in the community to help them cross river floods because most of the people beside the rivers have already developed a technique or strategy to cross the river even when it floods.

While tapping the table *Teacher H* articulated, “As a teacher, I have so many experiences encountered every time I went to school. First, the road is very challenging and very far [that is 25 kilometers from the highway], and in heavy rain, we don’t have a choice but to walk if there is no horse available. When there’s a flood, we don’t have the choice [too] but to cross it. All of that is really difficult.” Aside from that, the teachers experienced life-threatening instances in the pursuit of this noble calling – teaching. Holding hands with one another to cross heavy floods that even caused their lives at stake. This supports the statement of Barcena (2018) that teaching in a remote school is a huge challenge. Teachers would encounter a variety of uncomfortable means of transportation like “*banka," "habal-habal*," and even the use of animals such as horses or carabao just to reach the station.

Looking at a distant space, *Teacher C* retorted “Yes [sir], I have so many difficult experiences [sir!] …when we say GIDA, my first impression is that [ang lugar] ay napag-iwanan na ng kabihasnan. What I mean is the transportation and communication were too difficult.” This participant is insistent and certain of his answer that what troubled him in GIDA are the means of transportation and communication which refers to lack of cellphone signal or internet connection which could possibly affect the teaching and learning process. These statements support the study of Lariosa et.al. (2022) who described the lives of the teachers in far-flung schools are challenged to work out of their comfort zone and to deal with students and communities with different cultures. They employed different strategies for adaptation that helped them survive and stay in far-flung areas. Their situation as far-flung teachers is not as easy as others had narrated.

Moreover, *Teacher F* distinctly cited while looking outside the window that “The distance is really a big challenge, especially during bad weather specifically on the portion of the river because it’s too deep and the road is one more thing. You have to literally push [lift] your motorcycle because there are portions that are really difficult sir!” This phenomenon is consistent with Leocadio (2023) which emphasizes that teachers in far-flung areas often face security risks. They may work in areas that are prone to conflict, natural disasters, or other dangers. In some cases, they may even be at risk of being robbed at gunpoint or experiencing violence. This means that teachers in these areas need to be vigilant and take extra precautions to ensure their safety.

In addition, *Teacher B* anxiously answered “First, hiking is really difficult when you are assigned to far-flung school areas.” What makes it difficult [sir] is the road going to my school assignment. You [will] need [also] to bring your allowance [food & financial] for a month.” Considering the road to far-flung schools and the weather conditions that the teachers encountered, only a few can be attracted to this kind of situation.

These statements confirmed the study of Hipolito (2022) who found out that the rugged road made it troublesome for teachers to reach the school. Things get worse when the weather is not fine. The same is true with Gallego (2022) who

mentioned that a group of teachers also claimed that they must cross three overflowing rivers to reach the school, while others have to walk 23 hours traversing a slippery and boggy road, and there are times they encounter venomous animals along the way to school.

Inadequate facilities

Inadequate facilities pertain to the needs of teachers for classrooms, and/or teaching and learning facilities. It comprised their experiences of not having enough classrooms, teaching, and learning materials that are essential to pupils learning.

With a sense of disappointment and frustration, *Teacher H* said, “We also lack classrooms, and I must say all the resources are not enough. I don’t even know exactly how I am going to cater to 315 learners in a limited space.” The needs for the classroom may only depend on the class size that the teachers have at hand. If the class size is too big, the teachers may just accommodate them (learners) anyway even with the uncomfortable conditions. However, the benefits of a conducive setting are evident as it allows for an independent exchange of ideas, opinions, judgments, and skills between the teachers and learners to achieve the expected educational outcome by considering the physical, psychological, social, and cultural needs of all the learners. For many far-flung teachers, providing the learners with a conducive space is a monumental effort and tedious to consider.

> *Teacher E* looked at me straight and softly answered “Yes, like an inadequate classroom. When the winds blew hard or heavy rains [back then], we came out of the classroom because its foundation is just made of bamboo trees, and we were afraid it would collapse. Also, books are insufficient, I [teacher] am the only one who has a book. For pupils, they don’t have enough learning materials like paper and pencils. So literally, how can you teach them in this kind of situation? [no papers or no pencil].’’ Consequently, the community where these far-flung schools are poor, and they can barely go to the market to buy school supplies for their children. Teachers most of the time provide their learners with paper or pencils at their expense just for learning to take place.
>
> On another note, *Teacher C* already has in mind that he can encounter many difficulties as he forthrightly verbalized “At first, it was very hard for me. The first thing that bothers my mind is [the question that] can I make it? I mean how can I survive in a school where I can perform my profession? My first impression is that a lot of problems I could encounter such as the physical status of the school…” Sadly, teachers have to build up and enforce their creativity and talents to make the school engaging for learners to learn.
>
> Generally, in far-flung schools, it is expected that the buildings were just makeshift or PTA-initiated buildings that served as temporary learning spaces for teachers and learners while waiting for government-funded school buildings.
>
> With eagerness, *Teacher A* declared “As a teacher in GIDA, there are lots of challenges, issues, and difficulties. Such as the teaching tools and the slow learners. You have to level down [standards] what you teach to them.” It is believed that teaching tools support the teaching process to achieve better outcomes. Apparently, these materials were insufficient.

These statements were found congruent with Gallego (2022) that due to inadequate facilities and resources teachers are devising new approaches to deliver the education that our students seek. Teachers need to live with the different barriers that they face. Some of them even shared some of their resources with their students.

In the same way, it was further supported by Castigador (2019) that teachers shared a portion of their salary to acquire teaching and learning resources in the classroom.

Teachers Unavailability

This part describes the dilemma of teachers in far-flung schools relating to the lack of teachers who will facilitate the learning necessities of the area. Teachers had to double their responsibilities as classroom teachers and at the same time school heads. In this study, two (2) of the teacher-participants were performing the duties of a teacher and a school head. The school barely even gets an additional teacher.

Correspondingly, *Teacher F* agreed "There are so many challenges and difficulties I encounter. If we speak about [challenges and issues confronting] teaching and learning, one is the lack of teachers because we are multigrade." A multigrade set-up was made due to teacher shortage. There are not enough teachers to facilitate the teaching and learning procedure. Other schools have tried utilizing the aid of volunteer teachers. However, due to the far distance and limited salary they received from the barangay and LGU, they stay only from one to two or five years, as the maximum.

A cheery *Teacher H* pedantically shared "Reaching the school, I cannot even explain what I'm gonna do there [school], there are no people around the school, no nearby houses too, what tribe or kind of youth am I gonna teach? All I thought was, we have few pupils only but to my surprise they crowd during class. We have 315 learners with only 2 regular teachers and 3 volunteer teachers." Surprisingly, an increasing number of learners caused a shortage of teachers.

The number of teachers facilitating and delivering learning in far-flung communities is truly a problem. These narrations were analogous to a news article that, one of the perennial problems in the Philippines particularly basic education is the teachers. This concern is worse in many rural and far-flung areas such as the scarcity of schools but even if there is a school with available classrooms in neighboring barangays, there is a scarcity of qualified teachers to reckon with (Sun Star Pampanga, 2017).

Teachers' Low Salary

This portion pronounces the challenges experienced by teachers on their salary as volunteer teachers. They shared that it is very low to the extent that they can't even afford their personal needs.

With a deep sigh, *Teacher E* said, "During my volunteer days, my finances cannot even suffice for my personal needs just like "*sabon*", *mga* "shampoo". In two months, I am only receiving 500 pesos as remuneration. But because of my

willingness to serve [IP communities], and to prove myself in this profession, I was able to manage all of that." The great determination of this teacher helped her handle the difficult situation brought about by poor compensation.

In addition, *Teacher A* looked down and shared "It became a challenge for me as a [volunteer] teacher in the distant communities, the low salary I received." Truthfully, volunteer teachers contribute enormous help to remote and isolated areas. Since there are insufficient regular teachers assigned in the far-to-reach schools. Yet, they are not given due recognition and proper compensation for their efforts.

It appears that the incentive is one of the things that brings these teachers frustration because it is not sufficient for their daily needs. At times due to pupils' quality of life in the place, they even have to use personal resources for learning materials and teaching tools. Purportedly, providing these teachers with appropriate funding can stimulate their commitment to work and lessen their burden. This impression is the same with Leocadia (2023) who specified that the dedication of teachers working under difficult conditions and making significant sacrifices to provide education to marginalized communities, recognizing their contributions, and providing them with appropriate incentives helped attract and retain talented teachers in these areas.

In addition, the statements were analogous to Lariosa et.al (2022) who pointed out that teachers were encouraged by the learners' situation, that love of the profession even goes to the extent of taking part in their inadequate salary for classroom use and making it conducive for learning. Another form of motivation was monetary grants, which helped them stay at the assigned station.

Illiterate Parents

This situation includes the difficulties faced by teachers regarding the kind of life that the community in the remote areas has. Parents are uneducated as reflected in three of the teacher-participants which resulted in a lack of support for their children's academics as well as an inactive participation in school-related activities.

With an expression of sadness, *Teacher H* explained that "Parents are uneducated. Sometimes when they have some documents or papers to process [such as birth certificates, marriage contracts, or even certifications from barangay and etc.] *ma'am pwede mo kami tulungan sa ganito…* So, through that, we can be of help." This participant has addressed not just the learning gaps that the place really needs. She showed so humility by giving her expertise to parents who are also uneducated. These parents have not gone to school before due to their geographical locations.

Unpromisingly, *Teacher A* explained that part of his motivation to teach is the IP learners as "most of their parents are purely dependent on teachers [because] they lack the necessary knowledge, and others cannot even write." It came out from the discussion that most parents are having their "thumbmarks" instead of their signatures in many cases in school such as attendance during school meetings. This scenario is very well-known for teachers in far-flung areas.

Commonly, the given instances opened the way to greater and tougher situations that teachers have come across within the area. On the other side, the lack of education among parents could result in economic matters.

With a troubled impression, *Teacher D* shortly described that “Most parents are uneducated and don’t have a stable job.” Emphasizing that having little to no educational background at all will automatically conduce to unstable employment and financial incapability.

This result ties in well with the statements of Sy (2021) that the situation in GIDAs is far from ideal. Quejada & Orale (2018) mentioned that geographically isolated communities are usually poor. The school, the students, and the community exhibit poverty. The result also affirmed the study of Lariosa, Diendo, and Espinosa (2022) that isolated communities are usually deprived. The area lacks so many things. Most households served are penurious, parents have low educational backgrounds, and some have not gone to school.

Pupils’ Learning Status

This illustration labels the learning status of learners in geographically isolated and disadvantaged areas. From the data given, the status of their learning is dissatisfying. Comparatively, learners in the isolated areas were slow learners and they were underperform compared to the learners in urban areas or accessible schools, particularly near the highways. Six (6) of the teacher-participants have parallel experiences concerning this area.

Indirectly, *Teacher H* uttered “For the learners, we teach them how to read and write. Just the simple [basic] one because you have to level your [teaching] standards to them [learners] for learning to take place.” Ideally, the contents to be taught by the teachers should be based on the Most Essential Learning Competencies (MELC) or the prescribed curriculum content of the DepEd but due to the prevailing needs of the learners and also bearing in mind the learning capabilities of the learners in the area, you have to begin first with what is basic, essential, and significant. This way, it prepared the learners for much more complex lessons in the future.

Significantly, *Teacher A* has the same story, he stated that next to his difficulties as a GIDA teacher are the slow learners, he is handling. He further noted that “you have to level down what you teach to them. For instance, I’m a grade 5 teacher but we’re still on sounding letters of the alphabet.” Seeing most of his learners to be underperformed, this participant has developed his technique and style of teaching. Most of the pupils have delayed cognitive aspects due to impoverishment and limited access to other sources of learning.

Moreover, *Teacher D* expressively remarked that “Children are used to being *mahiyain* and some of them are slow learners. Some of them do not participate in school activities. Some are unhealthy and [have] fewer opportunities [in life].” Tëduray are known to be shy and timid however adding the fact that they are slow learners is painful to note. They barely have access to basic services and various opportunities in life.

An extremely keen *Teacher E* detailed that “I also experienced parents who neglect their child’s attendance during their Kindergarten to Grade Three [level/stages]. This resulted in learners being academically weak in their higher grades – Grades Four to Six. Wherein, supposedly this is the foundation, right? So, in my observation, it resulted in them becoming slow learners. Those who were properly monitored [supervised] by their parents were the ones who are good in class too. Parents’ involvement is a must.” Slow learners are associated with various factors. The learners do not have enough supply of learning materials, and poverty, parents’ educational background. In some cases, schools in the far-flung areas are also multigrade. However, in the locale of this study, teachers were able to get the aid of volunteer teachers.

Slow learners are just one of the difficult situations that teachers have to bear in remote areas. These statements confirm the study of Quejada and Orale (2018) which says that classes are multi-grade and have many slow learners and non-readers due to the confluence of many factors primarily due to poverty. With committed teachers, they produce few achievers.

Linguistic Barrier

Four of the teacher-participants experienced language barriers and described it as one of their challenges in the geographically challenged community. Here are some of the transcriptions:

Teacher F articulated that “Sometimes teachers and learners didn’t understand each other because they are purely *Maguindanaon* in Letingan ES.” Communication between learners and teachers happens only when there is a language common to both parties. If barriers arise in terms of language usually the teachers must adapt or learn the language of the children so learning will most likely happen.

With certainty, *Teacher C* mentioned that dealing with Pupils who are *Tëduray* is one of his problems encountered. He stated “My first impression is that a lot of problems I could encounter such as… dealing with pupils who are *Tëduray* for which I am an *Ilonggo* and how to deal with parents and the community as a whole. In the beginning [sir], I don’t really know how to speak [communicate in] *Tëduray.* So, there are times that I use words that have an opposite meaning in their dialect. Just like, *“Sut gom!”* what I meant was “Come inside the classroom”. However, I wondered why they’d come out of the classroom. So, only to find out that what I actually said was for them to come out. So that is my first encounter sir, with the language barrier between me and the pupils. This situation is really common for the indigenous communities in South Upi. People in the place seldom come out from their place which led them not to be exposed to other dialects.

Teacher H also encountered the same situation as she narrated “Sometimes, we encounter a language barrier too. When you explain something [concepts], you need to translate it [in their mother tongue] so you will be able to connect them with the lesson.” Furthermore, Teacher A shared “Another thing I experienced is that the children [learners] can hardly communicate with me in

Tagalog [much more with English]. You must speak in their mother tongue [to have a common understanding of what you are trying to expound]."

Undoubtedly, the revelations of the teacher-participants on language barriers are one of the challenges they encountered in the area which they believed to hamper learning. The above-cited statements acknowledged the study of Lariosa, Diendo, and Espinosa (2022) that an accurate message during the lesson results from effective communication. Even with the burning desire of the teachers to teach the students, teachers are not free from experiencing barriers in delivering the goods to the students. Most of the teachers shared during the interview that barriers in communication are their common issue in the instruction of the lessons. They shared that most of their students are IPs, and they don't have any background in their dialect, which makes it difficult for them to deliver instructions.

I.1.2. Light and Hope in the Midst of Struggle

This sub-theme entails the positive or light experiences faced by teachers in geographically isolated and disadvantaged areas. Basically, it's the experiences that lightened up the situations they encountered in the area. These involved experiences that served as their light and hope.

Teachers' life in the remote is unbearable and strenuous. However, the participants reflected on the constructive and encouraging situations they experienced. As a result, they uncover meaningful life lessons that they used while still on this arduous path of career. These were grouped into categories and were also given titles based on the responses of the teacher-participants provided. Such as simple people with big hearts; prospects for growth; and the joy of seeing their pupils' dreams come true.

Simple People with Big Hearts

This experience was revealed to be predominant in the response of the four (4) teacher-participants. It defines the treatment of the co-workers and learners for the teachers and the support and assistance that they receive from the parents and the community as a whole.

People in the far-flung community are very welcoming and hospitable. Although, given that they're uneducated but they pay the highest respect to their teachers. They get themselves involved in school activities or programs. The following transcripts revealed that people in the far-flung areas are simple, yet they have big hearts for the teachers.

Cheerfully, *Teacher E* shared "At times you need the community people, they show their care, specifically if it concerns the school. Stakeholders [it refers to PTA, parents, lupon/elders, and barangay officials] of the school were also supportive." It is truly imperative for teachers to get the necessary support from the community. Furthermore, Llego (2022) cited that parental involvement in education is indispensable and can meaningfully influence their child's academic success. When parents get involved in their child's education, they are more likely to help their children succeed in school and in life.

With gladness, *Teacher F* articulated "I'm happy that learners are also happy with my teachings. I am happy that the parents are also supportive. They even

gave us rice, and coffee during the time we slept in school. So, if you do your job well in school, they'll have no regrets about supporting you. In my eleven (11) years in the service, I barely think of transferring [to another school] because of the support I got from the parents." This participant seemed to be loved by the parents and community. Reflecting on his experience, one of his attachments to the place is the support he can get from the community and the parents. That support is earned by teachers through dedication and real hard work.

With a soft voice, *Teacher G* lamented that "there are so many positive experiences like supportive parents who didn't question my capability as a teacher. Pupils are very respectful. So, there's no regret on my part with the situation at hand." This teacher showed no regrets with the positive attitude and invaluable treatment she received from the community.

Likewise, *Teacher A* had a similar experience as he said "Yes, I do have a positive experience in teaching in GIDA. First, are the parents [who] are very easy to approach. Second, the pupils are kind and willing to learn. Lastly, working with underkind colleagues."

The amount of support that parents pay to the school and to the teachers has positive effects and impacts on their child's academic progress and these supports are incomparable. These declarations are identical to Durisic and Buniejivac (2017) that parents and families have a major impact on the success of the process of education and upbringing of children. The involvement of parents is related to their position at home (monitoring the learning of children), as well as participation in activities organized at school (parent-teacher conferences, volunteer activities, various forms of parental activism, workshops, and seminars for parents.

Prospects for Growth

Teachers have utilized their experiences, either the good or the bad, as an opportunity to develop themselves. This part refers to teachers' innate quality to acquire more skills, techniques, and valuable life lessons for them to thrive in this chosen field. Their passion and dedication to teaching have stepped to even greater heights due to the meaningful experiences they encountered.

Rubbing her both hands, *Teacher E* looked at the ceiling and said "Getting with the people is the first [positive experience]. My confidence to mingle with other Tëduray was boosted." She further noted that "I was able to develop managerial skills where I can say I am capable of leading. It serves as an opportunity for me to help not just my co-IPs but also myself that I discovered that I can also be a leader."

Additionally, *Teacher D* came up with a straightforward answer and she said "Yes, my positive experience is that I learned more while I am teaching. I was able to teach myself to be more confident, patient, and to be always optimistic [in life]." Truly, this participant revealed that our experience teaches us to become the best version of ourselves.

Expressively, *Teacher C* uttered "Yes sir, of course! Because I strongly believed that everything happens for a reason. My positive experience is that I

develop within myself the spirit of love, joy, peace, patience, long-suffering, gentleness, goodness, faith, meekness, and temperance with colleagues, and with learners and parents." Having developed these qualities as a teacher, we can generally state that the rewards of the teaching profession go beyond our expectations.

In the same way, *Teacher H* proudly shared "Of course! sir, amidst the struggles we still have positive experiences too. I'm happy that I was able to adapt to the [school] environment. In my six years of teaching there, I developed a love for the community, the people there, and the learners. I'm happy because I knew I was able to help them but also in their daily lives." Surprisingly, teaching in remote communities is satisfying and very fulfilling.

Being able to witness your contributions, your wisdom, and the values you instill in the learners slowly taking its shape in the place and the lives of the people in the area is such a euphoria. Teachers made use of their struggles, woes, and pain in teaching to see the beauty behind these. These realities were pronounced by Javilla and Fabella (2019) in their study that the experience of teaching in a remote school and community has been personally and professionally rewarding and often life-changing. Working together as a family will produce a school climate that endorses positive student outcomes and improves job satisfaction.

The Joy of Seeing Their Pupil's Dream Come True

One of the things that bring the teachers pleasure is seeing their pupils thrive and reach their goals in life. Teachers feel good when their pupils have achieved their dreams in life. Some of the deliberations are presented in the following transcripts.

A determined *Teacher B* shared "Those sacrifices I've made in the place have had good results. My former pupils who were once my achievers in class maintained it even in High School. There are those who landed in the Top 1 in Villamonte. These (experiences) gave me an inspiration that what I had worked hard in the place had finally paid off." Of all the sacrifices that this teacher had encountered in his teaching career in the far-flung school, he was not expecting a monetary reward.

With enthusiasm, *Teacher F* happily recounted "I'm happy, happy because I can help far-to-reach children and slowly they are getting civilized. But thankfully God provided me with the diligence to endure the distance and for the direction, goal, or purpose that is to deliver learning to them [learners]. At times, I walked alone, I told myself *ganito talaga*, *fight lang dapat*, *laban lang!* because it is our profession wherever God placed us, we must do what we can. Teaching is also a ministry. So, thankfully because of my goal, I was able to do my part."

Additionally, *Teacher E'*s face lit up as she narrated "I feel so happy now seeing all my pupils entering high school already. Unlike before that, I have Kindergarten pupils who are already 12 years old. So, when they graduate from elementary, they won't be enrolling in high school anymore because they feel ashamed of their age. [For now] No more overage or out-of-school youth in the community." During the grouped discourse, it appeared that the teachers are conducting a child mapping activity or also termed a child find activity in school that

minimizes the case of overage learners. Parents were informed that as early as five years, a child is eligible for kindergarten.

Teaching in remote areas is not just about difficulties as the teachers are slowly bringing change in the lives of the people. The above-cited narrations are like Lariosa et.al. (2022), where teachers have developed commitment and dedication to their vocation/mission. Thus, they have found reasons for staying in their respective schools as they found loving children and found a purpose in which teachers are being respected.

Theme II. Coping Strategies Used by the Teachers in Facing the Challenges Encountered

The following themes describe the coping strategies used by the participants in geographically isolated areas. Since difficulties are inevitable for teachers in the GIDA, they must also be equipped with strategies to deal with their situations effectively.

II.1. Social Support System

This theme describes teachers coping strategies through the support they received from the parents or community, peers, co-teachers, stakeholders, and government agencies. The parents of the learners, colleagues and superiors, barangay, local government agencies, and other partners were the main source of support for teacher - participants in remote schools. The support they extend to the school and the teachers is an important factor for the school to make progress. Therefore, this impression helped the teachers cope with their situation in the area. The following are narrated in the following transcript.

Encouragingly, *Teacher E* expressed “The lack of classrooms was resolved by strengthening the Parent Teachers Association. This way, they lead the projects in school. The conduct of monthly meetings strengthened communications with parents. This led the school to have a much safer classroom because it had a strong foundation and was built with stronger construction materials. Unlike before the foundations were just [made of] bamboo trees. But when the parents were already organized much safer classrooms were built.” Initiating projects like makeshift building facilities in far-flung schools requires massive efforts due to their location. Material can hardly be carried. However, with help and assistance coming from the parents, this participant has been able to build more spaces for learning.

On the other hand, *Teacher F* received parents’ support in other means. He stated “During bad weather, parents’ support helped me cope with the situation. They’ll help us carry our motorcycle to the other side of the river when it floods. But the situation now is quite good on that portion [river] because there’s already a tire path.” Evidently, the support of the parents to teachers is not just limited inside the school premises. They even help the teachers to reach the school, which is much more aggravated when the weather conditions are not fine. Furthermore, he added that “I also referred to past teachers and administrators of the school, and I learned from the tips and advice they shared with us. The government provided us with training on how to handle multigrade classes.” This participant revealed that he

consulted past teachers for him to gain insights that he can utilize to face his present condition and there was training already provided to them. In GIDA, schools usually have multigrade classes. This is due to an inadequate number of teachers assigned in the area. Multigrade set-up requires a different teaching instruction. The aid of training and seminar were basic elements to effectively facilitate this kind of set-up.

In the same way, *Teacher H* logically expressed “During heavy rains what I do is to call the volunteers that we cannot go to school. *Hindi naman ako superhero na kayanin ang mga baha o mga bagyo* and then I’ll ask permission from the supervisor that we cannot be in school. Of course, I think also of my safety because I have my family too. What if I die, right? *kahit bagyo or baha susuungin para doon sa learners.* Although that should be the case. But due to far distance, you must think about what is good [for you].” In heavy weather conditions, this teacher showed practicality. Occasionally, teachers will be absent from their classes for some important matters. However, they should be seeking permission from their superior. Also, this participant revealed that their volunteer teachers who were from the community already were also informed of possible absences for them to take over their class while they were not around. She also recounted that “We lack teachers too, sir, I coordinated with BLGU and LGU to augment the lacking *para may katuwang kami sa pagtuturo* or guide the 315 learners.” Volunteer teachers were highly advantageous for teachers assigned to remote schools with relatively bigger populations. As a result, the barangay and local government unit supported the school by funding these teachers.

Finally, the participants showed that they also get support from their respective departments, which are the MBHTE, their barangay, and the local government unit. This support was in the form of training and seminars, and the hiring of locally funded teachers which basically aimed to reduce the problems of inadequate teaching staff in isolated areas.

The above-cited realities are parallel with the study of Javilla and Fabella (2019) that you will need a certain amount of resilience and the ability to solve problems and find support from new people.

II.2. Problem-Solving Strategy

This theme refers to a structured method utilized by the teachers to directly address the problem they faced in geographically isolated and disadvantaged areas. This involved their sound and practical judgment to a particular scenario and applying the best possible solution that is just within their control. The following are their transcriptions:

Confidently, *Teacher H* is definite in her coping strategy. She reluctantly shared “For slow learners, we focused on 3Rs for them to learn something than nothing at all. They crowd in the classroom so what we do is just go on.” This suggests that learners in far-flung schools are slow which is attributed to various factors including their incredibly large class size. Thus, teachers are only teaching them basic skills like reading, writing, and arithmetic.

Additionally, *Teacher F* shared “A book was provided to us to lessen the burden on our part as a teacher handling both grades.” Fortunately, this participant was able to have his teaching material to effectively facilitate a multigrade class.

On the brighter side, *Teacher E* articulated “To cope with insufficient learning materials like books we surf online for resources since teachers had their phones and the signal is available too.” This statement suggests that far-flung teachers utilized online sources for their lessons.

In general, the participants directly addressed the problems they encountered as long it was only within their capacity to resolve. Problems are inevitable. Thus, the teachers developed their own techniques and mechanisms to ease their situations in the area. Romero (2016) supports the following narrations. She regarded teaching as a vocation, mission, and profession. Few are chosen for this calling. To accomplish this mission, we had to equip ourselves with knowledge, skills, and the right attitude to be effective teachers. Every child who enters our classroom has been entrusted to our care. We have the responsibility to mold them and help them become better persons and make their lives meaningful.

This coping style of the participants was described by Van den Brande et.al. (2020) as a problem-focused coping style. It is an attempt to control work stressors by defining and interpreting them, planning solutions, and choosing a course of action. A method that is an effective way to tackle life problems.

The narrations of the teacher-participants had different opinions with Gallego (2022) that teaching and community coping techniques are the methods they used to surpass the difficulties they faced in teaching and the community they served like improvising teaching materials and conducting home visitation.

II.3. Acceptance and Devotion to Work

The participant narrated that their coping strategy was acceptance and devotion to work. The acknowledgment they have of the nature of the teaching profession as a challenging task coupled with their dedication was instrumental in their coping mechanism. Below are their revelations:

A passionate *Teacher H* expressed “As a teacher and school head, you need to find all the ways to cope with the challenges of being a teacher in far-flung areas. You need to sacrifice everything because it is our job or duty to provide learning to the Tëduray.” This narration uncovered that this participant is also a school head. Having recognized her purpose, which is to educate her fellow Tëduray, made her cope with the situation she comes across. Equally, a very compassionate *Teacher A* added “I (was able to) cope with the challenges of teaching in GIDA because I am proud to be an IP. I want to share all that I have with my learners because I believe that education is important and, I love teaching in the mountains or distant communities.” Being an IP himself, this participant felt the need of the indigenous people for education. Loving his work in the mountains is enough reason for him to manage all his struggles in life as a teacher.

In addition, *Teacher B* stated “You really need to love your work and do your work/job as a teacher which is important. To do it, you must do your best in your job, and you will forget (all sacrifices and difficulties) *kaya mahalin ang trabaho*.”

In the same way, Teacher C further stated “I always motivate myself to love my work, love the people around me, to love the place where I belong. Because my purpose is to serve and not be served.” Motivating himself to love his work and the people around him is the factor he considered as his coping strategy. Guided by his self-determined purpose which is to serve helped him cope with his situation in the distant community.

Lastly, *Teacher E* stated “[To cope] First is acceptance and then having pledged to teach gave us the responsibility for our learners. From the very start, you knew the nature of this career.” Realizing the nature of a teaching career which entails sacrifices and struggles makes her cope with her situation.

Through difficult times one’s dedication can be tested. When the teacher overcomes the situation through acceptance and by remaining pure in their intentions, this teacher is a devoted one. The statements support the study of Javilla and Fabella (2019) that indicated although the teaching profession can be demanding, various ways exist to survive and thrive. Knowing yourself also means knowing how you react under pressure and thinking about how you will cope without your close buddies and family nearby.

Also, these ideas are referred to by Gallego (2022) as work consolations. He mentioned that despite the challenges of the public–school heads in remote areas, they have not denied that they have found comfort in serving. As they continue to serve, they find their journey in a remote area self – fulfilling for they have found their true mission in the world of academe. They found a new family with their peers, colleagues, and community. And mold them to be an artistic educator for they make use of their extra talent to bring quality education to all.

In general, these participants revealed that their coping styles are based on their beliefs about truth, norms, and just. This phenomenon is defined by Algorani and Gupta (2021) as a meaning-focused coping style that employs cognitive strategies to process and make sense of the meaning of a situation. Accordingly, it involves religion, spiritual beliefs, beliefs about justice, values, and existential goals that may influence someone’s tendency to exhibit a meaning-focused coping style.

II.4. Burning Desire to Help

This sub-theme describes the motivations of the teachers in far-flung schools. Based on their narrations, helping the learners, parents, and the community, in general, is one of their sources of motivation.

A kind-hearted *Teacher D* narrated “So, for me, it’s like I’m challenged with my learners and some of them are slow. I motivate myself that at the end of the day, time will not be wasted and that they must acquire some knowledge.” Furthermore, she added that “I have seen the situation of the children wherein they really have less opportunity. That is why, it motivated me to help them uplift their learning (status).”

Teacher G in the same way said that “First is acceptance and then having pledged to teach gave us the responsibility for our learners. From the very start, you knew the nature of this career.” In the first place, this participant had already

embraced the fulfilling nature of the teaching profession. This prepared her to accept the job wholeheartedly.

Positively, *Teacher H* shared, “As my motivation in teaching in that far-flung area, I want to help the young IPs because I am an IP too by sharing with them what I have learned. I want them to be educated because as a teacher it’s our responsibility to share because we know that they are slow learners there, so why not do your best? So, that they can learn from you. Every child has the right to be educated.” This participant showed compassion towards her co-IPs and that she has a responsibility to mold them to be educated and share with them what she has.

Similarly, a compassionate *Teacher E* mentioned “I am motivated in this profession because I prefer to help my co-Tëduray to make them aware of the positive causes of education. I am motivated too because it’s the place for me where I can perform the profession I have chosen. Our home before was just behind the school in our barangay but it’s the way of God so I can help my co-Tëduray in the area.” Certainly, this participant exhibited utmost concern for her co-Tëduray. As most of the Tëduray in the mountains considered education to be of less priority and importance.

These statements were like Brillantes and Nebria (2021) who emphasized also that teachers felt deeper connections and attachments to the learners that made them feel the fulfillment of being a teacher specifically to IPs.

On the contrary, a purpose-driven *Teacher F* verbalized that “One thing that motivates me is my work or profession itself as a teacher. There is a purpose why I am in this area. I am not really forced by circumstances because I am happy with my wholehearted ministry in the place. One more thing is faith, this is the job given to me (by God), so I need to do my part, my obligation. Seeing the needs of the community for education motivates me.” Purpose, faith, and the needs of the community are the motivations of the participants.

` In the same way, the motivation of *Teacher A* is extrinsic. He said “The one that motivates me is my family, they were always there to support me. They are even telling me that I should be helping the children in GIDA schools because unlike in the schools nearby, they have performing learners and adequate teachers to teach them.” Motivated by his family, who have supported him all throughout, this participant was determined to teach in the far-flung school.

These statements revealed that teachers in geographically challenged communities are truly committed to their chosen profession. In this way, it motivated them to work efficiently even with lots of difficulties. This supports the statement of Altun (2017) who described teacher commitment as a motivational force that inspires them to invest more time and energy in student achievement. This willingness to promote student accomplishment inspires teachers to seek ways to enhance the teaching profession and establish an effective learning environment to allow students to reach their goals. Teacher commitment is a crucial factor that impacts student achievement. Committed teachers devote themselves to their students, school, and teaching profession. When teachers are involved in developing their teaching profession, they can influence student accomplishment.

Teachers with high levels of commitment also motivate students to get involved in school activities.

In general, the participants demonstrated that their motivation for teaching is their passion itself. Borrowing the statement of Serin (2017), passionate teachers know that it is their responsibility to encourage students and they are always interested in their development. Passionate teachers work with enthusiasm, constantly increase their devotion and commitment and they believe in the importance of their job. This motivation served as the participants' coping mechanism in facing the obstacles in GIDA.

Theme III. Insights, Recommendations, and Aspirations of the Teachers in GIDA

The following emerging themes pertain to the insights, recommendations, aspirations, and reasons behind painstakingly teaching in geographically challenged communities. There were three sub-themes such as yearning for a brighter future, for one's own good, and the noble intentions of a teacher.

III.1. Yearning for a Brighter Future

This theme describes the teachers who are taking a stand for a brighter future ahead of them. Taking a stand that their situations will become better if the government can provide them with enough teachers, classroom buildings, infrastructures, and sufficient learning materials knowing that these things are essential to provide learners with a favorable learning climate. Three categories fall under this theme which was grouped according to how it was verbalized by the participants. This includes additional teachers, additional buildings, learning resources, and infrastructures.

Additional Teachers

This category describes the participants' recommendations for additional teachers. Seven participants came up with this recommendation. The following are their transcriptions:

A hopeful *Teacher D* stated "More regular teachers should be deployed to remote areas because usually, parents did not finish their studies or were uneducated at all. If there is, it is still not enough to help the school. So, it is one of the needs of the school to have [additional] regular teachers because the help of volunteers is really insufficient." Consequently, this participant is assertive of her recommendation that additional teachers are needed in far-flung schools. Similar to *Teacher G*, who also said that "[An additional] regular teacher [is recommended] because it's the need of the school.

Far-flung schools are less attractive for teachers. This is what Teacher H acclaimed "We need additional teachers because few are only attracted to far-flung schools because it's very far. I hope there will be teachers that the department will assign there to meet the needs of Bangsamoro learners."

A very explicit *Teacher C* shared "Yes sir, and to be specific the government or the agency should pay attention to schools in GIDA. Just like … deployment of

regular teachers" Stipulating that additional teachers for GIDA schools should be given attention by the government. Likewise, *Teacher F* also mentioned, "I wish that the department will pay attention to us and add more regular teachers that have the same language orientation as the place so they can easily understand the learners."

With composure, *Teacher E* enunciated "I recommend to BARMM MBHTE that applicants who are native to the place should be prioritized in the selection [process of hiring teachers]. In our place, there are board passers [licensed holders] who were not able to acquire an item [regular permanent position in the government]. These professionals had genuine care for the place because it is already their family that they are serving." Remarking that the department will employ locality of teachers' deployment to avoid teachers seeking for transfer after a year or two in other nearby schools.

These recommendations confirmed the statement of Llego (n.d.) that the deployment of teachers to geographically isolated communities is an effective way to address the problem of accessibility to basic education. Similarly, the Magna Carta for Public School Teachers (1966) recognized that advancement in education depends on the qualifications and ability of the teaching staff and that education is an essential factor in the economic growth of the nation as a productive investment of vital importance.

Additional Buildings

Classroom buildings were necessary for teachers and learners. In most cases, it motivates the learners and the teachers even more if they feel comfortable with their classroom. Four participants mentioned that additional classrooms or classroom buildings subsidized by the Department of Education or MBHTE is one of their great concerns. Below are the transcriptions:

A very grateful *Teacher E* took the opportunity to thank the ministry for the very first time, their school received a school building. She expressed "I thanked BARMM-MBHTE for giving us a new school building because it served as motivation for learners. So, with that, all I have to ask is a renovation from BARMM." One of the reasons that may bring happiness to teachers is school buildings. This implies that it is one thing that they really wished and longed to have in their respective schools.

Learning is best facilitated when you are in a comfortable situation and atmosphere. Although learning can happen anytime and everywhere. But it is much more acceptable for teachers and pupils to have a conducive space. In this way, learning can take place meaningfully and effectively.

Teacher C said that "the government or the agency should pay attention to schools in GIDA. Just like the provision of school buildings. Similarly, Teacher G also said that "[I recommend for a] government building because most of our classrooms are just makeshift. We have 1 government building "*pero yung kahoy pa gud sir"* and only grades 1 and 2 can be catered in there. By having that, the learners will be motivated that they can feel support from the government, and they'll support the school too." With old and dilapidated buildings present in farflung

schools, receiving support from the government for things like school buildings is seen to be of great importance because it can also motivate the learners as well as strengthen community involvement in the school.

A very firm *Teacher H* expressed that “as my recommendation to lessen the work of the teachers there [far-flung area], due to the lack of classrooms I want the MBHTE or DEPED to give us additional classrooms.” She asserts that it has become one of the additional workloads and burdens for teachers in school to initiate a makeshift building for the learners and she believed that an additional government classroom will resolve this perennial concern of the teachers.

A favorable classroom environment suggests an effective teaching and learning process. Adequate classroom buildings contribute to the holistic progress of the learners. This is why, teachers in the far-flung school are very much concerned about the physical status of their school, particularly their classroom. In response to such dilemmas of the teachers, the Department of Education crafted the Last-Mile Schools Program to address the gaps in geographically isolated schools. Accordingly, among the indicators used in identifying a school as among the Last Mile Schools involves a school having less than four classrooms and with makeshift or nonstandard rooms (Llego, n.d). However, the participants revealed that classroom building is still one of the existing problems they struggle with.

Learning Resources

These include the materials of the learners like notebooks, papers, pens and pencils, computers, and other teaching materials. Five participants shared the same sentiments. Below are the transcriptions.

Teacher C strongly urged that “the government or the agency should pay attention to schools in GIDA. Just like the provision of learning materials.”

The same is true with *Teacher D* when she said, “Perhaps for concerned governments, (agencies), and individuals when it comes to teaching and learning materials, the remote areas should be prioritized.” Similarly, *Teacher E*, conveyed that “The Barangay should have an activity in a year where they will be giving learning materials like pencil and paper as it really helps the learner.” Learning materials are significant and one of the basic resources that learners must have enough supplies with. It is very useful in their day-to-day activities inside the class.

Shortly, *Teacher H* enumerated that “Additional classrooms, teachers, and learning materials that are applicable for learners were all my recommendations.” Contextualizing materials that suit the learners’ needs and backgrounds is very beneficial to schools in remote areas. This led the teachers to devise their own materials for teaching and learning to really address the applicability of the lesson to the learners for the best results.

A technologically oriented *Teacher A* revealed that “[I dreamed] to have computers be made available in school so learners can keep abreast with schools on the highways.” Nowadays, technology offers a variety of learning perspectives. It gives the learners access and the opportunity to learn beyond what is just being taught in school. This participant believed that it is imperative for learners to learn the basics of computers such as turning on and off the computer, typing and/or

encoding, and making PowerPoint presentations. In return, teachers can make their teaching more interesting and engaging.

These statements were congruent with Leocadio (2023) far-flung areas often lack the resources necessary for effective teaching, thus teachers have to improvise and find creative ways to teach their students. Moreover, teachers may not have access to basic necessities, particularly potable water, and electricity.

Infrastructure

Based on the insights of the participants, transportation is one thing they really find challenging. Their recommendations involve the construction of bridges, improving means of transportation, and electricity.

Teacher F shook his hands and said “I would also like to call our DEPED and DPWH to give us a bridge on the river as it will ease the transport of materials or supplies, commodities for the school which is really expensive due to the struggle of travel. So, all in all, I hoped it would be realized.” This participant revealed that due to the rugged road going to school, the transport of supplies and commodities going to school becomes costly. It is not the distance that the teachers are paying for the transport of materials, it’s the amount of hard work that the drivers get to safely deliver the goods and supplies to the school.

In the same way, *Teacher H* said, “For me, I aspire *na magkaroon ng magandang daanan papuntang school* to easily deliver quality education in the place and then materials for the schools’ improvement and development will be easily transported, as well as bridges in the rivers so that during flood we will not anymore experience difficulties, because I encountered almost getting drowned due to heavy rain one time that we went home.” It is common for far-flung teachers that their lives are at risk, especially when they have to cross a flooded river. This teacher aspires to have a much safer road going to school where there is no hazard they will encounter. Subsequently, *Teacher C* had the same sentiment wherein he said that the “Government should also improve the means of transportation to lessen the burden on teachers.”

On the other hand, *Teacher G* pointed out that “Electricity is one thing, so, during programs we can also use projectors because our solar power source cannot suffice it. Wherein at times, we want to show learning videos but then we cannot make it.” This participant would also like to share something new with the learners which is hindered by the unavailability of electricity in the place. Truly, life in the mountain school is not easy. You must teach with what are available resources at hand. You have to utilize indigenous materials that are readily available in the place.

The teachers aspired to have access to basic infrastructures such as bridges, road scraping or road improvement to lighten their burdens on transportation and also electricity as it is one of the basic needs of the schools in the far-flung areas for their printers and laptops and cellular phones. The results support the recommendation of Gallego (2022) that the officials from the Local Government Unit may direct the barangay to create an ordinance to cover the safety and security of the teachers in terms of road signs, road clearing, and

assigned officials or barangay *tanod* within the school vicinity. They should also be provided with necessary incentives such as additional hazard pay or accident insurance. In addition, a policy on wellness programs on both physical and mental health may be organized by the respective DepEd districts, particularly for the de-stressing of the teachers assigned in remote areas. He further stated that teachers must upgrade their ways of managing the school in order to cope with the different challenges they encounter by partnering with non – non-government parties that may help them to abridge the scarcity of teaching materials they face. Apart from being the agents of change, teachers must continue their undying dedication to service to foster an ambiance of good teacher-student relationships despite the challenges encountered. They should also be more creative in presenting the lesson to bring back students' interest in school, most especially in far-flung communities.

Finally, the Global Coalition to Protect Education from Attack (2014) stresses that teachers play a fundamental role in enlightening and educating children to become desirable constituents of their respective communities. The state therefore should provide hard work and resources to keep teachers secure and in good condition so that they can also perform well their duties as teachers.

III.2 For One's Own Good

This theme pertains to teachers' aspirations for themselves as professionals and as teachers. These include their aspirations for promotions; their aspiration to transfer to another school; and their aspirations for salary increase and additional incentives. The transcriptions fall into three categories namely: career advancement, transfer of school; and salary increase and additional incentives.

Career Advancement

Two of the participants revealed that they aspire to better their positions as teachers. Below are their statements:

With a sense of uncertainty, *Teacher E* opined "Yes, for myself where I am handling school, I need to improve myself of course! I am also longing for a promotion because the school has growing needs and I needed to fully support the school's development and the learners." This participant aimed for the teacher's promotion for the school's benefit and the learners because she can have more resources to support the needs of the school, particularly for its development.

Additionally, *Teacher F* conveyed "I aspire to be given a chance for promotion from teacher to at least teacher 2. I'm not even asking for more." Due to limited slots for a teacher's promotion in the ministry, this teacher was not asking for a higher position although he is a school head and the same a classroom teacher.

The results conveyed that the teachers in far-flung schools aspire to progress in their careers as teachers. To be given a chance or slot for promotions is enough explanation to recompense their sacrifices and efforts to

deliver quality education, particularly in remote areas. The following revelations are defined in Section 5, Article XIV of the Constitution provides that the State shall enhance the right of teachers to professional advancement and ensure that teaching will attract and retain its rightful share of the best available talents through adequate remuneration and other means of job satisfaction and fulfillment.

Moreover, the Republic Act (RA) No. 4670, or the Magna Carta for Public School Teachers also recognizes that the advancement in education depends on the qualifications and ability of the teaching staff, and declares it a policy of the State to promote and improve the social and economic status of public school teachers, their terms of employment and career prospects to attract and retain in the teaching profession more individuals with proper qualifications.

Transfer of School

These described the teachers' aspiration to transfer to nearer and much more accessible schools. Here are some of their statements:

Teacher H cheerfully said, "I aspire for myself to be transferred *"Inshaallah"* to much nearer schools and *"yung iba naman ma-assign doon para fair naman".*

Looking at the ground, *Teacher G* sadly expressed "I aspire to be assigned to near schools wherein much accessible and not difficult to reach."

Lastly, *Teacher F* eagerly shared "I aspire to be transferred to a nearby school since I've been there for 11 consecutive years." Apparently, no matter how long this participant stayed in his school assignment he aspired to transfer to another school.

The above-cited statements were found parallel with Quejada and Orale (2018) who contended that no matter how teachers wish to be assigned permanently to far-flung schools, teachers are still looking forward to better assignments closer to their homes and families. This has been looked forward by teachers to be assigned to lowlands near their loved ones.

Increase in Salary and Incentives

Just like any other profession, teachers in far-flung areas have desired more incentives to compensate for their incomparable dedication and service in teaching. Below are their statements:

As a volunteer teacher in the far-flung school, *Teacher A* shared "For me, the LGU and BLGU where a far-flung school is located should help implement or provide good education by increasing volunteer teacher's honorarium." Truly, the services rendered by the volunteers are far more interesting to note. Minimal remuneration of a very uphill struggle is no joke for a teacher. Thus, this participant aspired for an increase in their compensation.

Furthermore, with faith, *Teacher D* retorted "Yes, I hope that they (the department) will look at the abilities (struggles and pains) of the teachers (in

far-flung) so that even if the position won't move at least just the salary will increase and also hazard pay."

Generally, the following revelations are indications that the life of teachers in isolated and geographically distant communities is not simple. Although their narrations have already been stipulated in Republic Act 4670 - Magna Carta for Public Teachers, Article III, Section 19 that, in areas in which teachers are exposed to a hardship such as difficulty in commuting to the place of work or other hazards peculiar to the place of employment, as determined by the Secretary of Education, they shall be compensated special hardship allowances equivalent to at least twenty-five percent of their monthly salary. However, this provision was not applicable to volunteer teachers as they have not yet acquired permanency in teaching.

III.3. Noble Intentions of a Teacher

To wish for someone to become successful in their chosen endeavor, and/or become happy for someone's achievement exhibits nobility. Teachers are among the noblest people that we know. The following transcriptions demonstrated this act:

With so much passion, *Teacher A* expressed "I want all IP learners to become successful in their dreams and I would also want to be an example to them. I want to educate young mind IP learners because I am also an IP and most especially, I love the people in the community." This participant has the same page as that of the people, so, he aspired them to be successful just like him. Equally, *Teacher D* calmly said "Perhaps, it's easy to say, "no choice" but as a teacher no matter how hard it is I took an ought for this, and I want to help my co-IPs."

An optimistic *Teacher B* uttered "I have aspiration[s] too sir, I hope that there will be more professionals in the place so that I can be able to witness how my hard work paid off. I love my work and I think that whenever you do good things, good things will also come back to you. God will reward you back. It is all about being Godly and humane." This participant considered the success of those within the community as a prize for his sacrifices. Driven by his faith in God, he aspired to do good because he believed that good things would likewise happen in return.

Also, a self-assured *Teacher E* opined "I stayed there due to love of work, and in fact, I really stayed there for good, I already built my home there to really give my services to children, and I have developed a love for children, for the place, and for the community. Also, I love my co-Tëduray, and I want them to have what I have today. While helping my family with their needs, I'm giving the community the services they[community] really needed from me." This participant sincerely developed a strong attachment to the community where she teaches. Out of her determination to help her co-Tëduray, she had lived with them to give her service wholeheartedly.

A divinely inspired *Teacher C* said, "So, the very reason that I decided to stay as a teacher in the far-flung school is because I discovered my purpose which is to make a change – a change for the better." As an agent of change, this participant is indeed determined to work for change.

In the same way, *Teacher H* also expressed "I have seen the situations of the learners there, as an IP, *mayroon akong [tinataglay na kakayahan] na pinakakailangan*

ng mga IP's sa ktulad ko na isang guro. That's the reason I stayed there even though it was hard. I will do everything for the sake of IP learners who need me. I even help them in processing documents, especially their birth certificate." This participant knew that her life in the remote area was not just about the struggles she experienced, it was also about her purpose and will to help the IPs. Seeing their conditions in the far-flung areas wherein they need her knowledge and expertise as a teacher.

Additionally, *Teacher G* rationally declared her answer in the form of a question that one of her reasons to teach in the area is "The learners, who will teach them?" Due to the lack of teachers, and the least appealing nature of the schools in far-flung areas, this participant is certain that nobody will replace her in the school if she no longer goes to the school.

In conclusion, the goals, and intentions of the following teacher-participants in teaching in remote areas are exceptional and deemed to be moral and genuine. Their life in the mountains is the epitome of living life to the fullest. This supports the idea of Gallego (2022) that teaching in remote schools defines the true meaning of a teacher's life. They are teachers who are considered the richest in terms of experience because of their commitment and passion for their chosen profession. Moreover, Gera (n.d.) also said that teaching has always been considered a noble profession that requires great passion. Being a teacher in the Philippines is a far more interesting story to tell. The challenges abound and one's passion can truly be tested, and if one prevails, a diamond in the rough emerges. The following participants also stated that they were staying in the school for the learners as they make a difference in the lives of the entire community. This proved the study of Durisic and Buniejivac (2017) that reaching out to the students and making a difference in their lives was important in deciding to remain in the teaching profession.

Conclusions

Teaching in geographically isolated areas is an actual test of a teacher's passion, dedication, and commitment to work. The teaching profession itself is already a challenging accountability but the situations of the teachers in far-flung areas are much worse. However, to be assigned in an isolated area doesn't just imply hardship as it appeared that teachers experienced fulfilling and life-changing scenarios. Based on the findings of this research I can conclude that far-flung teachers are exceptionally profuse with meaningful experiences and life stories. These experiences are not just stories of struggles and pains as others had believed and conceived but rather it has an exact opposite side of positivity. Educationally, this implies that teaching in far-flung schools in South Upi is not totally undesirable because, in the long run, you can uncover valuable experiences that can help you grow and thrive as professionals and as individuals. One's devotion, passion, commitment, and burning desire to help are of great worth in coping with the difficulties of far-flung teaching.

Participants revealed that they have been struggling with various obstacles in teaching in the area, but they received so much respect from the learners and community and the support coming from the parents is truly admirable. As a result, this lightened up their burdens in the place. Teachers educate and instill good values not just for learners

but also for the parents as most of them did not undergo formal instruction. Imparting to them the importance of education since most of the Indigenous People of South Upi - Tëduray have less concern and regard for education.

Additionally, the result of this research implies that by profoundly studying and realizing that teachers in the GIDA experienced a variety of uncomfortable means, the teachers in nearby schools will be inspired and motivated to do better as they have a favorable school environment. Novice teachers will have a broader concept of what it's like to be in far-flung schools. This could help them prepare emotionally, mentally, and physically.

The implications of the findings of this research will help the higher authorities craft and develop programs, activities, policies, and advance interventions that can alternatively reduce the burdens of teachers in distant communities. Finally, even though the teachers met so many challenges in teaching, their determination and passion for the students, and the community, had deeply influenced them to stay in the area. Indeed, they can move to nearby schools anytime they prefer to but their compassion towards the learners and the community is beyond comparison.

Recommendations

Fundamentally, the higher authorities particularly the Ministry of Basic, Higher and Technical Education (MBHTE) and school administrators should formulate and strengthen programs as well as policies that respond to the basic needs of the schools, learners, and teachers in far-flung areas. GIDA schools should be given school buildings and facilities. Moreover, immediate administrators and superiors should likewise provide instructional supervision and technical assistance to teachers assigned in the area. It is vital to fully ensure that learning provided in far-flung schools has achieved quality and competence. Teachers should be given the chance of promotions to compensate them and be granted additional incentives and remunerations like hardship allowance to give due recognition of their efforts.

This research highly recommends that neophyte teachers should be assigned to teach in the area since they are much stronger, healthier, and younger. However, a more experienced one should be designated as their school head. On the contrary, the old teachers should guide and nurture beginning teachers in the school.

Furthermore, the Local Government Units should improve the roads going to the schools. Teachers' lives are at stake when crossing flood rivers, so this research recommends that a bridge should be created for the benefit of the learners and teachers. Lastly, Non-Government Organizations and other school associates should offer more interventions and material support for teachers to dispatch or even lessen their countless needs in the area.

Compliance with Ethical Standards

This study observed the following ethical principles by Halai (2006). The researcher obtained informed consent from all those who were directly involved in the research. This principle adheres to a larger issue of respect to the participants so that they are not coerced into participation and have access to relevant information prior to the consent. Hence, the researcher prepared the consent-to-participate form containing the goals of the study and the rights of the participants including the risks, benefits, and a clause stipulating that their participation is voluntary, and they have the right to withdraw from the study.

Based on the confidentiality of information shared and the anonymity of the participants, this principle is concerned with offering respect and protection through assurance that the information shared will be solely used for research purposes only and that their identities will never be revealed to protect them. Typically, this is done through the use of code names such as Teacher A, Teacher B, and so on.

The third principle conveys that the researcher is expected to provide the participants with an outline of the risks and benefits. Reciprocity requires the researcher to compensate the participants for their time and effort. All the information relative to risks and benefits is expected to be provided in summary in the consent form.

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NAVIGATING THROUGH THE STORM: EXPLORING THE CHALLENGES OF RURAL HEALTH MIDWIVES UNDER THE DEPARTMENT OF HEALTH'S DEPLOYMENT PROGRAM, PHILIPPINES

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ABSTRACT

The COVID-19 (Corona Virus 2019) Pandemic summoned Midwives to the frontlines. This phenomenological research explores the lived experiences of Midwives working in the Rural Health Midwife Placement Program of the Department of Health during the peak of the COVID-9 pandemic in the Philippines. Utilizing the Socio-Ecological Model foci namely; individual, interpersonal, organizational, community, and policy issues, the lived experiences were thematically analyzed. The challenges experienced include unstableness and a sense of insecurity owing to altered family dynamics, work-life balance dilemma causing anxiety and depression, dismayed over the deprivation of healthy work culture, embitterment over unsupportive Local Government Unit (LGU), and difficulties in implementing the protocols. The government should address the needs of Midwives, improve their working condition and strengthen the capacity of the community's key leaders to improve performance and promote general community health.

Keywords: *COVID 19 experiences of Midwives, challenges, Rural Health Midwives, pandemic*

INTRODUCTION

It was perplexing and terrifying when strict protocols were instated following the declaration that COVID-19 is a pandemic (Kumar & Nayar, 2021). Individuals were critically ill and dying. The medical staff faced several uncertainties, physical hardships, and psychological trauma. In April 2020, the Philippines recognized that the infection had

disseminated locally, and 24.7% of those sick were medical personnel (Haw et al., 2020). Despite stringent precautions, the infection rate continued to increase albeit the combined efforts of the major key players. Numerous researches contend that the rising infection rate and the uncertainties impacted the mental health of healthcare professionals (Kola et al., 2021).

Conversely, Midwives played a crucial role in rural health settings but were routinely unrecognized (ICHMD, 2020). In order to augment the current workforce of the Rural Health Units to provide care to disadvantaged communities, the DOH (Department of Health) launched the Rural Health Midwife Placement Program (RHMPP).

Government initiatives baffled the masses and met with criticism. Midwives were severely exhausted and misconstrued. With the dearth of study on the experiences of Midwives who joined in the RHMPP, it became a foreground that piqued our curiosity about discovering the real life experiences of the Midwives working for Rural Health Midwife Placement Program. This, therefore, aims to explore their lived experiences by looking into the entirety of their unique experiences.

Research Questions

The Grand Tour Question

What are the lived experiences of RHMPP midwives amidst the COVID-19 pandemic?

Sub questions

1. What are the challenges encountered by the rural midwives during the COVID-19 pandemic in dealing with:
    1.1. their own attitudes, beliefs, and knowledge of community midwifery work?
    1.2. their families, friends, and social networks?
    1.3. their respective institutions and organizations?
    1.4. their partner communities?
    1.5. policies in the national, provincial, and local communities?

METHODOLOGY

This qualitative study specifically used phenomenological research design. Qualitative research is aimed at exploring and elaborating the experiences of a particular group of individuals wherein, the process is often flexible and evolving (Kumar, 2011).

This method made use of frameworks to understand human experiences by exploring the underlying processes, their constructs, and their relationships in order to analyze experiences and identify emergent themes, patterns, concepts, insights, and understandings (Patton, 2002). As a result, the emergent themes were categorized in accordance with the theoretical lens and were connected to certain constructs (Suter, W. N. 2012).

The themes were organized according to how the participants conveyed their experiences. Consequently, each component of the utilized theoretical lens was aligned in conjunction with the significance or content of the experience, as stressed by the participants. Further, the enormity and grandeur of the developing themes were gauged by their voice tone, frequency in the sharing, emotions expressed through gestures and facial expressions, and the lucidity with which the incident was detailed and described.

RESULTS

Ten (10) Midwives took part in the study. The seven female participants were married, and the remaining three participants were two single males and one single female. All participants had an estimated family income of more than Php. 21, 000.00 monthly. All participants were employed for 4 to 6 years in the Rural Health Midwife Placement Program.

The table below show the emerging themes for challenges encountered by the participants based on its immensity and magnitude.

Table 1. Challenges Themes based on its Immensity and Magnitude

CATEGORY	LIGHT	MEDIUM	HEAVY
Intrapersonal		• Exhaustion by overworked circumstance • Difficulty in gaining an honorable image • Loss of self-confidence	• Unstableness and insecurity in altered family dynamics
Interpersonal		• Infection dilemma causing people to be apart	• Work-life (family) imbalance dilemma causing anxiety and depression
Organizational	• Compelled to undertake personal sacrifices	• Disappointment over the poor government support • Troubled by compromised DOH programs	• Dismayed over deprivation of healthy work culture
Community		• Struggle on the people's lack of	• Embitterment over

	awareness of the importance of the COVID-19 vaccination • Cultural and communication barriers	unsupportive Local Government Unit
Policy	• Altered policy on quality patient care	• Difficulties in implementing the IATF (Inter-agency Task Force) protocol and guidelines

DISCUSSION

Intrapersonal Challenges: Unstableness and Insecurity in Altered Family Dynamics

Stable family dynamics, typified by a sense of contentment, healthy relationships, and the absence of a work-family balancing crisis, inspire community Midwives (Headey & Muffels, 2018). However, the indignation caused by the COVID-19 pandemic to the Midwives put their families through so much anguish changing their family dynamics especially their economic situation and relationship with their children. This is exemplified by a change from being an affectionate person to someone who is very much detached and consciously aloof – solitarily facing their battles. Many of them had to be isolated from their children and sleep outside of their house to prevent bringing the infection. They admitted that it's difficult, seeing their kids long for their attention and they were quite too young yet to understand the situation.

There were innumerable deficiencies in the Midwives' role performance and loneliness was evident. Their responsibilities in the family were affected, thus parents experienced a greater level of psychosocial problems especially those with children (Lateef, Alaggia, & Collin-Vézina, 2021). It is highlighted that married health workers and those with children face significant psychological and work stress during the pandemic (Chew et al., 2021).

Excessive tiredness has been linked to these changes in family dynamics. Nine out of ten participants notably expressed their exhaustion from several community health activities. This was aggravated by increased workload and extended working hours leaving them no time for mental and physical recuperation. This proves that the number of working hours affects work-life balance, indeed proving that there was greater work-life disparity with longer working hours (Ayar et al., 2022)

The attitude, belief, and knowledge of Midwives relating to self, family, work, and community are their inner predicaments. This made them contemplate their choice to be Midwives, some wanting to leave their sworn service. Despite the numerous problems

faced, their steady commitment to public healthcare service as a responsibility and passion were not shattered by health crises, thus, sustaining them in the service.

Interpersonal Challenges: Work-life (family) imbalance dilemma causing anxiety and depression

The work-life balance of health workers was negatively affected during the rise of the COVID-19 pandemic (Ayers et al., 2022). With the changes of their work-life synergy, healthcare professionals who are parents show an inevitable increase in stress and anxiety (Yayla & Eskici İlgin, 2021). This made the Midwives feel guilty about their unfulfilled family roles especially as parent to their small kids.

Midwives became anxious that infection might reach the household. They always hold guilt if one family member is infected and there is a contention that they are the source. COVID-19 pandemic exacerbated a Midwives' postpartum depression, leading to suicidal attempts and altered parenting. Thus, health personnel's concerns with COVID-19 infections had led to serious psychological anguish.

Social support is perceived as a crucial component of an individual's psychological well-being (Siegel & Dekel, 2022). However the COVID-19 infection dilemma separated people physically, compromising relationships with family and friends. They were reluctant to share time to express their affection towards their loved ones due to the possibility of spreading COVID infection.

Despite the COVID-19's frightening effect, Midwives believed that the pandemic crisis somehow unified families, friends, and colleagues. Midwives proven that relationships can still exist. Thanks goodness to the advancement of the information technology that amidst the distance and multiple difficulties, the pandemic somehow has brought people together (Kurniawaty et al., 2019).

Organizational Challenges: Dismayed over Deprivation for Healthy Work Culture

A positive work environment leads to an employee's satisfaction and increased productivity (Castillo, 2021). On the contrary, Midwives in the RHMPP believed that they were deprived of a healthy work culture during the COVID-19 pandemic. Midwives explicitly expressed how they placed themselves in danger by closely monitoring confirmed positive cases on home quarantine despite the lack of appropriate Personal Protective Equipment (PPE). They travel in the middle of the night to a far flung place to monitor patients and their contacts, putting themselves at risk.

The employment contract of Midwives in RHMPP does not commensurate with their actual entitlements based on the scope of their obligations. They were working more than the mandated number of hours per week consequently increasing their physical and psychological stress. Midwives while allegedly been underpaid, claims that their shifts exceeded eight (8) hours per day and even devoured their weekends, night offs, holidays and other personal time, without proper additional compensation.

Self-reported financial concerns have been linked to psychological stress. The strain is compounded by the Midwives' delayed pay under the DOH (for 2-3 months every first quarter of the year) and in general, their lack of job security, being job order employees. In terms of the compensation, RHMPP Midwives are entitled to a salary equivalent to the salary grade 11 (Php. 17, 099.00). Likewise, they are entitled to a representation allowance, additional compensation under the Magna Carta for Health Workers, and some amount for their continuing professional education. Commonly, they have a monthly gross pay of approximately Php. 25,000.00. Concerning this, Midwives felt that they were overworked yet underpaid, demoralized, and remained vulnerable in the face of the current pandemic, yet their salaries and other entitlements were usually delayed. Allowances promised to them by the national and the local government units were long overdue. They also expressed sadness that other health workers with similar workload and assignments, received more entitlements than them. Nevertheless, they expressed understanding of their employment status being job order employees. They are hoping that those who earned a Bachelor of Science (BS) Degree in Midwifery should have a higher compensation similar to other BS holder personnel in the DOH's Deployment Program.

Midwives are faced with a dilemma being job order employees, waiting for their temporary appointment, while many of them are finding other employment alternatives. They claimed to just persevere and remained optimistic, knowing that some of their previous colleagues were not given the same opportunity to be in the program again. Job uncertainty in both the public and private sectors is a perennial issue that adds to workers' stress. The Philippine healthcare professionals were among the group of workers deprived of a desirable environment during the surge of the pandemic adding up to their psychological anguish (Mendoza et al., 2021).

Issues on compromised DOH programs during the surge of the pandemic emerged as a subtheme. Several service targets for various health programs were not met because Midwives shifted focus from DOH program implementation to the COVID-19 control program. This resulted in an increased bulk of unfinished duties, especially the recording and reporting which are needed for the country's health statistics. The pandemic's "additional tasks," were on top of the regular functions that Midwives had to perform in the Barangay Health Stations (BHS), and these so-called additional functions were far more difficult and demanding.

The lack of support and insufficient funding from the LGU forced Midwives to spend their own money on health and health-related activities. These include, but are not limited to; finding transportation for patients, providing meals for clients on quarantines, purchasing medicines, acquiring PPE for self and patients, and equipping the BHS with necessary supplies, among other things.

Community Challenges: Embitterment over Unsupportive Local Government Unit

Through the local health board, the local government unit is expected to be proactively supportive to health programs and policies. Nevertheless, during the COVID-19 pandemic, demand for health-related assistance was relatively high. Eight out of ten municipalities in South Cotabato where the participating Midwives come from, were perceived to be unsupportive to the health programs during the pandemic spike. Midwives felt that community health is their sole responsibility. Consequently, Midwives, as primary implementers, were among the numerous public health practitioners subjected to community criticism of the government's response to the COVID-19. They admitted suffering of compassion fatigue as they poured all their efforts and personal resources to help people survive their health battles and yet, they were often unrecognized as “true” frontliners.

The dearth of logistical support from the local government unit to the rural Midwives added to their afflictions. There were cases of alleged mishandling of funds for COVID-19 management and control. Studies have shown that mental health of health workers during the pandemic was linked to the quality of organizational support. There have been indications that apposite support and effective communication protect healthcare personnel from having the poorest mental health outcomes (Brier et al., 2020).

The vaccination program against COVID-19 caused extra difficulties for rural Midwives. The community's inadequate knowledge about the vaccine's safety and benefits put the Midwives in danger. All ten (10) participants experienced having unfavorable interactions with their constituents in the Resbakuna COVID-19 vaccination program, owing to community social ostracization and lack of vaccine understanding. The difficulties experienced by the Midwives were also linked to cultural communication obstacles. It corroborated with the poll results from Social Weather Stations, which revealed a high level of community opposition to COVID-19 vaccines (Mendoza et al., 2021).

Policy Challenges: Difficulties in Implementing the IATF Protocols and Guidelines

As different LGUs issued varying memorandum orders, this caused confusion among the health team and the general population. As a result, the community's frontline of defense - the Midwives, were often the ones who took the brunt of the blame. The community's unwillingness to embrace the policy, combined with the implementers' inconsistencies, and the lack of IEC (Information, Education and Communication) and support from other key players, results in horrible experiences for Rural Midwives.

In particular, changes to the funeral policy in accordance with the Inter-agency Task Force (IATF) protocols resulted to some harassment of Midwives. Several other implementers of IATF guidelines faced unfavorable treatment from family members of a deceased victim who tested positive for COVID-19.

Conclusions

The COVID 19 pandemic significantly impacted Midwives, creating a multitude of challenges across various levels of the Socio-Ecological Model.

In the intrapersonal level, the pandemic disrupted midwives' family dynamics. The fear of transmission led them to become isolated from their loved ones, leading to feelings of loneliness and detachment. Increased workload led to exhaustion which challenged their ability to balance work and family life. These challenges led some midwives to contemplate leaving the profession despite their dedication to their duty.

Work-life imbalance is the main interpersonal challenge that aroused anxiety and depression among midwives. Concerns about infecting family members caused guilt and social distancing which consequently compromised the expected social support. However, technology facilitated communication and connection despite physical limitations.

Within the organization, midwives' felt inadequately supported. A lack of proper PPE exposed them to health risks. Underpayment, delayed salaries, and exceeding work hours without due compensation caused financial strain and demoralization. Additionally, DOH program implementation was disrupted due to pandemic's focus, increased workloads and led towards numerous unfinished tasks. The financial limitations of local government units (LGU) forced midwives to use personal resources for health activities.

In the community level, midwives perceived that there is a lack of support from LGU during the pandemic. They shouldered a significant burden in the community health programs while facing criticism for the government's response. Logistical shortcomings from LGUs added to their struggles. Vaccine hesitancy and cultural communication barriers posed further difficulties.

In the policy level, there were inconsistencies in the guidelines and varying protocols from different LGUs which caused confusion among health care workers and even the public. Midwives faced the burden of public frustration due to unclear policies and a lack of effective communication.

The COVID-19 pandemic highlighted the need for better support systems for midwives. They require adequate resources, improved working conditions and recognition for crucial role in public health, especially during crises. Addressing these challenges is essential to ensure the well-being of midwives and the continued delivery of quality maternity care.

Recommendations

This study offers the following recommendations that may promote a healthy work environment for the Midwives:

1. Timely release of salaries and entitlements,
2. Recognition of Midwives with bachelor's degree and the corresponding salary adjustment,
3. Allow Midwives to enjoy weekends and holidays off,
4. Ensure proper Midwife-to-population ratio at 1:5000 and 1:50 households for each Barangay Health Workers,
5. Empower the community by training key leaders on Community Organizing and Community Development,
6. Integrate respect on cultural diversity in the training of Midwives. Qualified Midwives who are organic to the community may be prioritized for hiring, and
7. Conduct related study by triangulating the data to include other stakeholders, such as the supervising nurses, doctors, community leaders and the DOH. Certain quantitative studies proving the relevant statistics can be promising. A post pandemic study on Midwives' experiences will provide a perspective of their roles beyond the pandemic which will aid program review and prepare key players to future pandemics.

Compliance with Ethical Standards

Approval from the ethics review board was made prior to the actual data collection. This study adhered to the ethical norms and standards of research particularly in terms of ensuring rigor, respect to the participants of the study, storage of data, and dissemination of data and results.

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OVERCOMING DISTANCE: EXPLORING THE MOTIVATIONAL FACTORS OF TEACHERS IN FAR-FLUNG SCHOOLS

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ABSTRACT

The education system thrives on the dedication and passion of its teachers. However, for those educators assigned to far-flung schools, maintaining motivation can be a constant struggle. This study aimed to determine the motivational factors of teachers assigned in far-flung schools in the Districts of Jiabong, Motiong, Wright I, Wright II, and San Jose de Buan, Schools Division of Samar for School Year 2023-2024. This research utilized the quantitative-descriptive research design, with comparative and correlation analysis, to determine the motivational factors of teachers assigned in far-flung schools of elementary comprising the Schools Division of Samar. In the main data gathering tool, the researcher utilized the questionnaire checklist. The findings of the study affirmed that in looking into the relationship between the teachers' profile variables and their motivational factors, it was found significant in terms of civil status (weak correlation), number of years in teaching (moderate correlation), and attitude toward teaching (moderate correlation). While the remaining variables (age, sex, gross monthly family income, highest educational attainment, relevant in-service training, and performance rating) showed very weak associations with motivation, their correlations were determined to be not statistically significant. Moreover, this paper highlights the problems these teachers face: lack of communication infrastructure such as cellphone signals, internet, and transportation; delays in receiving real-time updates and transmitting the needed data; lack of resources necessary for effective teaching; and absence of electricity. These factors contribute significantly to teacher unpreparedness and struggles when handling classes in far-flung areas.

Keywords: *Motivational factors, Far-flung schools, Existence needs, Relatedness needs, Growth needs*

INTRODUCTION

Education is the cornerstone of societal progress, and teachers are the architects. Their dedication shapes young minds, building the future. However, in remote Philippine schools, a persistent lack of resources hinders teachers' ability to deliver quality education. These challenges, faced by educators in far-flung areas, can significantly impact their motivation (Ucag et al., 2024).

Motivation is the internal drive that compels us to set goals, overcome challenges, and achieve something meaningful (Abbas et al., 2023). It fuels our effort and propels us towards what we value. Without it, direction and purpose become elusive. Conversely, high motivation combined with hard work unlocks our potential for greater achievements. This is particularly true in education, where a teacher's enthusiasm directly impacts student learning and overall system performance. Therefore, fostering a positive and motivating work environment becomes a critical objective for school management (Rasheed et al., 2016).

Understanding teachers' motivations is crucial for school management in fostering a positive work environment. Cultural backgrounds play a significant role in shaping these motivations, influencing how teachers view their work and interact with students (Zulueta, 2011). By recognizing these diverse motivational drivers and needs, school managers can develop strategies that empower teachers and encourage them to excel (Robbins& De Cenzo, 2012).

Beyond understanding teachers' motivations, school leaders can further enhance teacher performance by considering the role of goals and incentives. Setting clear, achievable goals aligned with teachers' needs can be a powerful motivator, leading to increased effort and improved student outcomes (Robbins & De Cenzo, 2012). Similarly, factors like salary, work conditions, and recognition can significantly impact teacher motivation and retention (Musa, 2014).

However, fostering teacher motivation remains a critical challenge in education, impacting a school's ability to achieve its goals. While a wealth of research exists on motivation's positive influence on performance (Futalan, 2013; Castor, 2017), bridging the gap between theory and sustained improvement for teachers can be difficult.

Additionally, according to Courus (2014), society today laments over the fast-disappearing bread of teachers with missionary spirit; teachers whose professionalism has come to be seen as an integral part of their character; and teachers who are deeply committed to making a difference in the lives of their people. These kinds of teachers, associated with glistening qualities have definitely changed.

Moreover, according to Ahmed (2011) educational institutions consider human

resources as their most vital asset and they consider them as a route toward success. The motivation of teachers, therefore, is very important as it affects job performance. The vital role which teachers play in the educative process cannot be overemphasized. The teacher is the single most important factor in education. Her or his far-reaching influence as an agent of constructive change in society is beyond question. Through the years, however, teachers still complain about their status, pay, and welfare with serious consequences on the quality of education. Pupils' learning depends upon effective teaching; hence, determining the factors that help in the enhancement of teachers' motivation is of prime importance to propel them to peak performance.

It cannot be denied that one-third of the teacher's life each day is spent in their work in school. Thus, he needs to be motivated to be satisfied with his job. According to Robbins and De Cenzo (2012), when someone is motivated, they try hard which will likely lead to favorable job performance. Motivation is vital as it makes teachers positive in their job. Creating a drive in them and helping them acquire the target will give them a feeling of success. This is one of the most important factors affecting human behavior. It is the attribute that moves a person to do or not to do.

With that, in this ever-changing world, there is a need for motivated teachers so that they can survive in the educational system and they can also give help in the development of the system. The researcher, therefore, being a teacher, herself is challenged to delve further into the factors aside from salaries that will enhance teachers' motivation in the performance of their job.

The Districts of Jiabong, Motiong, Wright I, Wright II, and San Jose de Buan are characterized by their remote and geographically isolated locations. Teachers working in these far-flung schools face numerous challenges, including limited access to resources, insufficient infrastructure, cultural differences, and long distances to commute. These circumstances create a distinct educational context that may influence the motivational factors experienced by teachers in the said districts.

Furthermore, according to district data from the 2021-2022 period, the consolidated Individual Performance Commitment Review Form (IPCRF) indicated that 73 percent of the teaching staff achieved an "Outstanding" performance rating. However, this figure fell 2 percent short of the national target. Interestingly, when examining the Schools Division of Samar data, it became apparent that nearly 65 percent of educators stationed in the remote schools of Jiabong, Motiong, Wright I, Wright II, and San Jose de Buan expressed a strong desire to transfer to schools in more accessible lowland areas. The underlying cause of this desire for relocation was found to be rooted in their challenging experiences at their current remote postings.

While previous research has extensively investigated teacher motivation, there remains a research gap in understanding the specific motivational dynamics of teachers assigned to far-flung schools in Jiabong, Motiong, Wright I, Wright II, and San Jose de Buan. Most existing studies have focused on urban or more accessible rural areas, where teachers may encounter different challenges and have access to greater

resources and support systems. Thus, there is a need to delve into the motivational factors that are unique to teachers in Jiabong, Motiong, Wright I, Wright II, and San Jose de Buan far-flung schools.

The researcher took an interest in undertaking this study to find the answer to why after all these years, with so many reform programs embarked on in the field, Philippine education is still in crisis. People who are motivated and satisfied with their jobs tend to become dedicated and productive workers. The responsibility of carrying out the plans and achieving the desired goals of quality education lies with the teachers who teach effectively. A teacher who has so much interest, enthusiasm, and satisfaction with his work becomes contributive to the attainment of the goals of the school system.

Addressing this research gap is crucial for several reasons. Firstly, identifying the motivational factors of teachers in far-flung schools can help educational policymakers and administrators design targeted interventions to support and enhance teacher motivation. Understanding the specific challenges faced by these teachers, appropriate strategies can be developed to address their needs and create a conducive work environment. Secondly, studying the motivational factors in Jiabong, Motiong, Wright I, Wright II, and San Jose de Buan's context can provide valuable insights into the dynamics of teacher motivation in remote and marginalized areas, contributing to the broader field of educational research.

Research Questions

The present study determined the motivational factors of teachers assigned in far-flung schools in the Districts of Jiabong, Motiong, Wright I, Wright II, and San Jose de Buan, Schools Division of Samar for School Year 2023-2024. Specifically, the study sought answers to the following questions:

1. What is the profile of the teacher-respondents in terms of the following variates:
    - 1.1 age and sex;
    - 1.2 civil status;
    - 1.3 gross monthly family income;
    - 1.4 highest educational attainment;
    - 1.5 number of years in teaching;
    - 1.6 number of relevant In-Service Trainings (INSET);
    - 1.7 latest performance rating based on IPCRF; and
    - 1.8 attitude toward teaching?

2. What are the different motivational factors of teachers assigned in far-flung schools in the Districts of Jiabong, Motiong, Wright I, Wright II, and San Jose de Buan based on the following:
    - 2.1 existence needs;
    - 2.2 relatedness needs; and
    - 2.3 growth needs?

3. Is there a significant relationship between the profile variates of the teachers and their motivational factors?

4. What are the problems encountered by the teachers assigned in far-flung areas in the Districts of Jiabong, Motiong, Wright I, Wright II, and San Jose de Buan?

5. What intervention can be crafted based on the findings of the study?

METHODOLOGY

This research employs a quantitative-descriptive design with comparative and correlational analysis to delve into the motivational factors of elementary school teachers assigned to far-flung areas within the Samar Schools Division.

Data were collected through a researcher-designed questionnaire, adapted from a validated tool by Comighud (2020), to ensure its relevance to the Philippine context. Unlike traditional sampling methods, all teachers in these schools across five districts (Jiabong, Motiong, San Jose de Buan, Wright I, and Wright II) will be invited to participate, utilizing a universal sampling approach for a more complete picture.

Analysis involves descriptive statistics like frequency counts, percentages, means, and standard deviations to summarize teacher profiles and questionnaire responses on motivational factors. Inferential statistics like correlation and regression analysis then explore the relationships between these motivational factors and other relevant variables, pinpointing which ones hold the strongest influence.

Ethical considerations are paramount. Teachers participate only after providing informed consent, guaranteeing their understanding of the study and how their data were used. Confidentiality was strictly maintained, with no names or identifying information linked to their responses.

Additionally, pilot testing the questionnaire with a smaller group beforehand further enhances the study's robustness. Given the remote locations of the schools, creative data collection strategies like online surveys or phone interviews were necessary and were employed. The researchers also prioritize data trustworthiness through techniques like triangulation and member checking.

RESULTS AND DISCUSSION

The following were the salient findings of the study:

1. The majority of teachers are young (27-31 years old) and female. This suggests a youthful and predominantly female teaching force in the sample.

2. Most teachers are single. This could be correlated with the young age or influenced by the demands of the profession.

3. Teachers are concentrated in middle-income brackets. A substantial portion fall in lower-income brackets. This highlights that while many teachers may have a comfortable lifestyle, they might not be in the highest earning tiers.

4. There was a split between relatively newer teachers (<10 years' experience) and those with longer tenure. Notably, teachers are absent with 16-20 years of experience.

5. District and school-level in-service training is most common. National and regional training is reported as less frequent.

6. Most teachers have "Very Satisfactory" performance ratings, with a sizable portion rated "Satisfactory". There's room for more to achieve the highest "Outstanding" rating.

7. Teachers have a generally positive attitude toward teaching. They seem to enjoy the process of teaching itself.

8. Teachers are highly motivated by factors like safety, job security, strong family relationships, and salary. They place less emphasis on social standing.

9. A positive school climate, strong relationships with peers/superiors, and a sense of belonging are key motivators. External praise is less important, but respect and recognition are valued.

10. There was a strong desire for professional development opportunities (seminars, training, graduate degrees) and career advancement linked to fair performance ratings and increased pay.

11. Civil status, years of teaching experience, and attitude towards teaching show correlations with teacher motivation levels.

12. Age, sex, income, education level, formal training, and performance ratings didn't have strong associations with motivation.

13. Teachers report significant challenges with communication, receiving real-time updates, resources, and electricity.

14. Remember this is a sample of teachers in a specific region (Region VIII, Samar). Results may not be fully generalizable.

15. Consider other motivational theories (like achievement or belonging) that might provide further insight. Explore correlations between motivation and teacher performance/retention.

16. Compare problems in far-flung schools with those in more central locations to see if they are unique or more intensely felt in remote areas.

17. Consider if there are links between the challenges of teaching in far-flung areas and some of the motivational factors (e.g., desire for professional development).

Motivational Factors of Teachers Assigned in Far-Flung Schools along Existence Needs

The Grand Weighted Mean of 4.09 indicates that teachers in far-flung schools are generally highly motivated. The factors with the highest weighted means, suggesting the strongest motivational influence, are: safe working environment (4.81), job security (4.77), strong family relationship (4.44), and salary/pay (4.42). Factors like health care benefits, durable house with amenities, a happy and contented Life, and a convenient lifestyle fall into the "Highly Motivated" category but have slightly lower means. High Social Standing/Status (3.15) is the only factor falling within the "Moderately Motivated" range.

Table 1

Motivational Factors of Teachers Assigned in Far-Flung Schools along Existence Needs

Indicator	WM	I
1. Salary/Pay	4.42	HM
2. Fringe Benefits	3.36	MM
3. Health Care Benefits	4.08	HM
4. Durable House with Amenities	4.00	HM
5. Strong Family Relationship	4.44	HM
6. Safe Working Environment	4.81	EM
7. Happy and Contented Life	4.40	HM
8. High Social Standing/Status	3.15	MM
9. Convenient Lifestyle	3.51	HM
10. Job Security	4.77	EM
Grand Weighted Mean	**4.09**	
Interpretation	**Highly Motivated**	

Legend:			
	4.50-5.00	Extremely Motivated	(EM)
	3.50-4.49	Highly Motivated	(HM)
	2.50-3.49	Moderately Motivated	(MM)
	1.50-2.49	Slightly Motivated	(SM)
	1.00-1.49	Not Motivated	(NM)
		Weighted Mean	(WM)
		Interpretation	(I)

The emphasis on a safe working environment and job security makes sense for

teachers in potentially isolated or less developed areas. Feeling physically and financially secure is likely a major prerequisite for them. Strong family relationships and a contented life rank highly, suggesting that intrinsic motivators are powerful for these teachers. Salary, while important, isn't the sole driving force. The low ranking of social standing indicates that teachers in these locations may place less emphasis on external recognition or prestige derived purely from their profession. This framework focuses on basic and safety needs. Other motivational theories (like achievement or belonging) might also be relevant in other contexts. The words "safe," "convenient," etc., It might mean different things to different teachers. It might be interesting to cross-tabulate this with other data you have.

Motivational Factors of Teachers Assigned in Far-Flung Schools along Related Needs

Like the previous table, the Grand Weighted Mean of 4.35 indicates high motivation among teachers in far-flung schools.

Table 2

Motivational Factors of Teachers Assigned in Far-Flung Schools along Related Needs

Indicator	WM	I
1. Organizational Climate	4.78	EM
2. Relationship with Peers	4.80	EM
3. Relationship with Superior	4.80	EM
4.Working Condition (presence of camaraderie)	4.71	EM
5. Policy and Administration of the School	4.55	EM
6. Recognition of One's Work	4.63	EM
7. Leadership Responsibilities	4.12	HM
8. Public acknowledgment for better accomplishment	4.23	HM
9. Praise from other people	3.08	MM
10. Respect from other people	4.78	EM
11. Organizational Support	4.71	EM
12. Social acceptance and belongingness	3.69	HM
13. Trust and confidence in the workplace	4.47	HM
14. Sympathetic kind of supervision	4.34	HM
15. Happy Workplace	4.71	EM
16. Work itself	3.42	MM
17. High self-esteem	4.07	HM
Grand Weighted Mean	**4.35**	
Interpretation	**Highly Motivated**	

Legend: 4.50-5.00 Extremely Motivated (EM)

3.50-4.49	Highly Motivated	(HM)
2.50-3.49	Moderately Motivated	(MM)
1.50-2.49	Slightly Motivated	(SM)
1.00-1.49	Not Motivated	(NM)
	Weighted Mean Interpretation	(WM) (I)

The highest weighted means are clustered in areas related to: positive organizational climate (4.78), strong relationships with peers and superiors (4.80, 4.80), supportive working conditions (4.71, 4.71), and a happy workplace (4.71). While not the absolute top motivators, factors like recognition, organizational support, and respect (all above 4.5) are still very important to these teachers. The lowest weighted means, although still in the "Moderately" or "Highly" Motivated categories, are: praise from other people (3.08) and work itself (3.42).

Teachers in far-flung schools seem highly motivated by a positive school climate, strong interpersonal connections, and a sense of belonging. This may compensate for some of the potential isolation or challenges unique to their location. While external praise is less important, teachers still value recognition of their work and want to feel respected. The lower ranking of "work itself" is curious. This could suggest that some tasks may feel routine. Alternatively, it may underscore those other aspects of the job (environment, relationships) currently act as more powerful drivers of motivation. This table emphasizes social belonging, esteem, and a positive working environment. These factors align well with the challenges a teacher might face in a more remote school setting.

Motivational Factors of Teachers Assigned in Far-Flung Schools along Growth Needs

The Grand Weighted Mean of 4.18 reinforces the pattern of high motivation seen in the previous tables for teachers in far-flung schools. The highest weighted means highlight a strong desire for opportunities related to career development and advancement: seminars, workshops, and training (4.79), career-path promotion (4.81), graduate degree opportunities (4.77), and increase in pay with promotion (4.65). Factors like a fair performance rating system and teaching as a life goal are still within the "Highly Motivated" range, demonstrating their importance, but have slightly lower means.

The factors of incentives for professional growth, scholarship grants, and the competitive nature of teaching fall within the "Moderately Motivated" range. Teachers in far-flung schools seem highly driven to advance their skills and qualifications.

Access to professional development might be seen as key to opening up greater opportunities within or outside their current setting. The desire for fair performance ratings and alignment of promotion with better pay suggests teachers want their hard work acknowledged and rewarded, which is a reasonable expectation. The slightly lower

rankings on the competitive aspect of teaching, or teaching being a sole life goal, might be a reflection of the unique context of their work. Focus on advancement could signify a desire to move beyond their current circumstances.

Table 3

Motivational Factors of Teachers Assigned in Far-Flung Schools along Growth Needs

Indicator	WM	I
1. Opportunity to attend seminars, workshops, and other form of training.	4.79	EM
2. Study leave benefits.	4.04	HM
3. Graduate degree obtained.	4.77	EM
4. Incentives for professional growth.	3.12	MM
5. Scholarship grants.	3.16	MM
6. Career-path promotion.	4.81	EM
7. Increase in pay with the promotion in position.	4.65	EM
8. Fair performance rating.	4.43	HM
9. Challenging and the competitive nature of teaching	3.72	HM
10. Teaching as a goal in life.	4.34	HM
Grand Weighted Mean	**4.18**	
Interpretation	**Highly Motivated**	

Legend:			
	4.50-5.00	Extremely Motivated	(EM)
	3.50-4.49	Highly Motivated	(HM)
	2.50-3.49	Moderately Motivated	(MM)
	1.50-2.49	Slightly Motivated	(SM)
	1.00-1.49	Not Motivated	(NM)
		Weighted Mean	(WM)
		Interpretation	(I)

It was important to consider how career growth opportunities for teachers in remote areas might look different or might have additional barriers compared to more central locations. It would be interesting to cross-tabulate this data with years of teaching experience.

Problems Encountered by the Teachers Assigned in Far-Flung Schools

The Grand Weighted Mean of 4.07 indicates that the listed problems are generally experienced to a significant degree by teachers in far-flung schools. The problems with

the highest weighted means fall into two main categories: “Lack of communication infrastructure such as cellphone signals, internet, and transportation” (4.77) and “Delays from receiving real-time updates and transmitting the needed data” (4.77). Other problems are still concerning but might be less pervasive.

Table 4

Problems Encountered by the Teachers Assigned in Far-Flung Schools

Problem	WM	I
1. Lack of resources necessary for effective teaching.	4.65	HF
2. Absence of electricity.	4.10	HF
3. Absence of potable water.	3.71	HF
4. Inaccessible roads.	3.72	HF
5. Lack of communication infrastructure such as cellphone signals, internet, and transportation.	4.77	EF
6. Delays from receiving real-time updates and transmitting the needed data.	4.77	EF
7. Very far from family.	3.40	MF
8. High incidence of insurgency.	3.62	HF
9. Security risk	3.91	MF
10. Others, please specify _____		
Grand Weighted Mean	**4.07**	
Interpretation	**Highly Felt**	

Legend:			
	4.50-5.00	Extremely Felt	(EF)
	3.50-4.49	Highly Felt	(HF)
	2.50-3.49	Moderately Felt	(MF)
	1.50-2.49	Slightly Felt	(SF)
	1.00-1.49	Not Felt	(NF)
		Weighted Mean	(WM)
		Interpretation	(I)

Teachers seem to struggle with communication, receiving real-time updates, resources, and electricity. It was worth considering if these problems are uniquely acute in far-flung schools compared to more central schools. Resource limitations and potential variations in student populations could be relevant. It might be interesting to see if there's any correlation between these student-related problems and the teacher motivation factors you analyzed previously.

Conclusions

From the findings of the study, the following conclusions were drawn:

1. The data points to a young, predominantly female teaching force facing limitations in

salary. This could suggest that the teaching profession in Samar might need to offer more competitive salaries and benefits to attract and retain more experienced educators. The lack of mid-career teachers (16-20 years of experience) could be a red flag for potential retention issues.

2. While some teachers are driven primarily by basic needs like safety and security, social factors like a positive work environment and respect are also crucial. Understanding these motivations will help design better systems for recognition and support. The lack of a strong correlation between income and motivation hints that non-financial factors could be more important for this group.

3. Teachers express a strong desire for professional development and advancement. This suggests a workforce that wants to improve. Providing these opportunities is not only good for teachers, but it is also likely to benefit student outcomes. School or district leaders should prioritize making training and career pathways accessible, especially in a far-flung context where teachers may already face isolation.

4. Explore why teachers might leave after a certain number of years or why those in the 16–20-year range are less common.

5. Research what salaries and benefit packages would be necessary to attract experienced teachers to the region.

6. Design professional development around teachers expressed needs and the specific difficulties students are experiencing.

7. Compare challenges in far-flung schools to those in more central locations in Samar or the Philippines as a whole. This could show whether problems are unique to or simply more intense in remote areas.

Recommendations

Anchored on the conclusions drawn from the findings, the following recommendations are offered:

1. Conduct exit interviews or surveys with teachers who leave the profession after 5-10 years and especially those in the absent 16–20-year range.

2. Understand the reasons for leaving (pay, working conditions, family, career change, etc.). This will help pinpoint areas to address.

3. Research salaries and benefits offered to teachers with similar experience levels in: comparable cities in the Philippines and other in-demand professions that might attract young, educated people away from teaching.

4. If major salary increases aren't feasible, explore non-monetary benefits that

improve the quality of life for teachers in far-flung schools: housing subsidies or assistance, transportation support, and childcare support (if relevant).

5. Develop ways to recognize teachers beyond performance ratings. Highlight those fostering a positive school climate, mentoring newer teachers, or going above and beyond for students.

6. Consider both formal awards and more informal, regular recognition to keep motivation high.

7. Provide time and structure for teachers to: plan lessons together, especially to address challenges in far-flung schools, share strategies for working with struggling students, and build a less isolating professional community, particularly in the remote areas. Survey teachers directly: what specific skills do they want to develop to address student difficulties? and what type of training formats are most accessible/beneficial to them?

8. If teachers desire graduate degrees and promotions, investigate: potential partnerships with universities to offer accessible courses (distance learning, weekend options, etc.) and clarify career advancement paths within the district and any barriers teachers might face in pursuing them.

9. Assess the potential for: more robust pre-K or early elementary programs to strengthen foundational skills early on and summer "bridge" programs for students before they enter grades where the skills gaps become major obstacles.

10. Use conclusions and recommendations as a starting point. Gather more data as you implement changes to measure their effectiveness.

11. Involve teachers in the design of solutions. This boosts buy-in and ensures programs will meet their needs.

12. While some recommendations might have general value, tailor them specifically to the budget limitations, cultural norms, and resources available in Samar.

Compliance with Ethical Standards

The research adhered to strict ethical guidelines. This ensured respondents were fully informed through a written and verbal explanation of the study's purpose, including their right to withdraw at any time without justification. Additionally, robust measures were implemented to guarantee the confidentiality of all participant information.

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OVERCOMING LINGUISTIC HURDLES: INVESTIGATING CHALLENGES ENCOUNTERED BY MAGUINDANAON STUDENTS IN ACHIEVING PROFICIENCY IN SPEAKING ENGLISH

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ABSTRACT

English proficiency is in today's globalized world, opening doors to educational and employment opportunities. In this study, qualitative research, specifically the phenomenological approach, was employed to examine the specific linguistic challenges faced by Maguindanaon students in the selected secondary schools in Maguindanao Del Sur Division and explored strategies to enhance their English-speaking skills in the current school year 2023-2024. There were 15 participants who were chosen using the purposive sampling. Thematic Analysis was used in capturing significant themes and responses. Ethical compliance was also considered in this study. A semi-structured interview served as the primary investigative tool employed during both in-depth interviews and Focus Group Discussions (FGDs). Through thematic analysis, common themes and patterns regarding the challenges faced by Maguindanaon students in English speaking were identified. The findings shed light on various linguistic and cultural barriers that hindered students' progress in acquiring English speaking skills. Additionally, the study highlights the importance of culturally responsive teaching methods and tailored language support programs to address the unique needs of Maguindanaon students. The implications of these findings extend to educators, curriculum developers, and policymakers, emphasizing the necessity of implementing inclusive language education strategies to foster linguistic diversity and promote English proficiency among Maguindanaon students.

Keywords: *Linguistic hurdles, Maguindanaon students, English proficiency, Qualitative, Philippines*

INTRODUCTION

English proficiency is a crucial in today's globalized world, opening doors to educational and employment opportunities. In the Philippines, English serve as one of the official languages and plays a significant role in education and communication. However, achieving proficiency in English can be challenging, especially for students from linguistically diverse backgrounds.

While international research has addressed issues related to language transition and identity, there is a gap in understanding the specific challenges faced by Maguindanaon students in the Philippines. Furthermore, research on effective strategies to support Maguindanaon students in achieving English proficiency is limited in the Philippine context.

The ability of teachers to bridge the linguistic gap and facilitate English language learning is a critical factor. The training and support provided to teachers in this context need examination (Gonzalez, 2015). With modernization, there is a concern that the preservation of the Filipino language and culture may be at risk. Ngag (2023) pointed out that Filipino students have limited knowledge in their own literature, which also affects how they appreciate local languages.

The Philippines is a linguistically diverse country with over 170 languages and dialects spoken. While English and Filipino are official languages of instruction, many students, particularly those from Indigenous communities like the Maguindanaon, grow up speaking their native languages at home. As a result, they often face linguistic hurdles when it comes to achieving English proficiency. In the Philippines, students typically transition from their native languages to English as the medium of instruction starting in elementary school. This abrupt shift can be challenging for students who are not exposed to English at an early age (Bautista, 2017).

Maintaining one's linguistic identity while acquiring proficiency in English can be a complex process. Students may grapple with issues related to self-esteem and identity as they navigate multiple linguistic worlds (Ramos, 2018). Allocation of resources, such as English language learning materials and language support programs, can vary across regions and school systems in the Philippines. Access to such resources can impact language proficiency (De Guzman, 2019).

This study aims to address these gaps by providing insights into the linguistic hurdles experienced by Maguindanaon learners and suggesting pedagogical approaches that may facilitate English language development in a culturally sensitive manner. This also seek to shed light on the specific linguistic challenges faced by Maguindanaon students in Maguindanao province and explore strategies to enhance their English-speaking skills.

Research Questions

This study sought to shed light on the specific linguistic challenges faced by Maguindanaon students in the selected secondary schools in Maguindanao Del Sur Division and explore strategies to enhance their English-speaking skills in the current school year 2023-2024.

Specifically, this sought to answer the following key-questions:

1. What specific linguistic challenges do Maguindanaon students in the Maguindanao I encounter when striving to achieve proficiency in English speaking?

2. How do Maguindanaon students' linguistic backgrounds and language used in their homes and communities influence their English-speaking abilities?

3. What are the perceptions and experiences of Maguindanaon students regarding their self-esteem and identity in the context of English language learning?

4. What strategies and approaches are employed by teachers and schools to support Maguindanaon students in improving their English-speaking skills?

METHODOLOGY

Research Design

In this study, qualitative research, specifically the phenomenological approach, was employed to examine the specific linguistic challenges faced by Maguindanaon students in the selected secondary schools in Maguindanao Del Sur Division and to explore strategies to enhance their English-speaking skills in the current school year 2023-2024.

One crucial element of the phenomenological research design is the researcher's responsibility to suspend any preexisting beliefs about the experience or phenomena in question (Delve & Limpaecher, 2012).

Participants of the Study

Table 1 displays the participants' qualifications, as determined by the criteria established by the researcher before selecting eligible informants for the study. The study involved a total of fifteen English teachers from among secondary in DepEd Maguindanao Del Sur Division, who met the researcher's specified inclusion criteria. In the study of Dolutan and Ngag (2024), setting an inclusion criteria is necessary to carefully select participants whose experiences and expertise tailored fit to the needs of the study.

Table 1: Participants' Inclusion Criteria

Qualifications
Teacher-Participants
1. Must be an English Teacher. 2. Must be assigned to Maguindanao Del Sur Division. 3. Must be handling Maguindanaon Learners.

Sampling Technique

The Purposive Sampling Technique was intentionally utilized to carefully select the English teachers from among secondary in DepEd Maguindanao Division, who met the specific inclusion criteria established by the researcher.

This method of sampling patterned after Creswell (2013) mandates that researcher's possess prior knowledge of the objectives underpinning their study so as to effectively pinpoint and make contact with eligible participants through online survey platforms like Alchemer. Researcher's resort to purposive sampling in order to secure access to a distinct subgroup of individuals, whereby all survey respondents are meticulously chosen based on their alignment with a specific demographic or criterion.

Data Gathering Instrument

In the context of this study, a semi-structured interview served as the primary investigative tool employed during both in-depth interviews and Focus Group Discussions (FGDs). The objective is to explore the specific linguistic challenges faced by Maguindanaon students in the selected secondary schools in Maguindanao Del Sur Division and explore strategies to enhance their English-speaking skills in the current school year 2023-2024.

The credibility and suitability of this instrument were validated through a rigorous assessment process, overseen by a panel of experts possessing specialized knowledge in the development of pertinent research instruments.

Data Gathering Procedure

To ensure the research's reliability, the researcher maintain a strict adherence to a predefined set of procedures. The primary objective of this study was to explore the specific linguistic challenges faced by Maguindanaon students in the selected secondary

schools in Maguindanao Del Sur Division and explore strategies to enhance their English-speaking skills in the current school year 2023-2024.

In the initial phase, formal authorization was diligently sought from both the Superintendent of DepEd-Maguindanao Del Sur and the Dean of the College of Graduate Studies (CGS). This authorization was essential to obtain the necessary permissions for the researcher to conduct the study, emphasizing the importance of ethical considerations

Following this, a secondary authorization letter was sent to the District Supervisor, explicitly requesting access to the specific data required for this research. A meticulously crafted survey questionnaire was developed, subjected to rigorous evaluation, and then administered to the targeted participants.

The researcher employed a Purposive Sampling Technique to carefully select secondary school teachers as participants in this study. Assuming strict adherence to established health protocols, the researcher proceeded with conducting face-to-face interviews and Focus Group Discussions (FGDs).

The data collected from interviews and FGDs were systematically organized, subjected to comprehensive analysis, and interpreted using the thematic analysis approach. This approach was expected to provide a deeper understanding of the issues under investigation.

Data Analysis

Within the framework of the study focused on exploring the specific linguistic challenges faced by Maguindanaon students in the selected secondary schools in Maguindanao Del Sur Division and exploring strategies to enhance their English-speaking skills in the current school year 2023-2024, the researcher employed a content or thematic analysis approach to scrutinize the amassed data.

As elucidated by Braun, V., & Clarke, V. (2006) involved the systematic classification of textual components, encompassing statements, phrases, and words, into organized groupings or categories. These categories either drew from established frameworks or were custom-crafted to align with the specific objectives of the study.

To execute this analytical process, a series of vital steps were meticulously followed:

In the initial phase, all data sources, including interview transcripts, notes from Focus Group Discussions (FGDs), and pertinent documents, underwent thorough organization and preparation for analysis. This step ensured the structured arrangement and accessibility of the data. Subsequently, the researcher was deeply immersed in the data by conducting a comprehensive review of interview transcripts and FGD notes. This immersive process aided in obtaining a comprehensive grasp of the content and context inherent in the collected information.

The third step involved commencing a systematic coding process. Initial codes were generated by identifying meaningful segments or patterns within the data. These codes encapsulated fundamental concepts, ideas, or themes relating to the specific linguistic challenges faced by Maguindanaon students in the selected secondary schools in Maguindanao Del Sur Division and exploring strategies to enhance their English-speaking skills in the current school year 2023-2024.

Following coding, the identified codes were clustered into preliminary themes based on shared meaning or relevance. This step sought to establish an initial framework for organizing the data.

Following this, the emerging themes and their corresponding codes underwent a process of scrutiny and refinement. Researchers ensured the coherence and clarity of these themes, making necessary adjustments as required. Each refined theme was assigned a descriptive label that succinctly represented the content it encompassed, facilitating easy identification and interpretation.

Relevant data excerpts, such as quotations or segments excerpted from interviews and FGDs, were selected and linked to the respective themes. These excerpts served as supporting evidence for the identified themes.

Finally, the thematic analysis transcended superficial identification. Researchers delved into interpreting the significance and implications of each theme within the context of the study's objectives. They sought patterns, correlations, and variations within the themes to provide a comprehensive understanding of the challenges and opportunities involved in implementing differentiated instruction in science education.

This meticulous and well-structured process of thematic analysis empowered researchers to systematically investigate and comprehend the strategies and approaches employed by teachers in addressing the specific linguistic challenges faced by Maguindanaon students in the selected secondary schools in Maguindanao Del Sur Division and exploring strategies to enhance their English-speaking skills in the current school year 2023-2024.

This approach yielded valuable insights contributing to the enhancement of intervention programs aimed at addressing the specific linguistic challenges faced by Maguindanaon students in the selected secondary schools in Maguindanao Del Sur Division and exploring strategies to enhance their English-speaking skills in the current school year 2023-2024.

Scope and Limitations

The study focused on secondary schools within Maguindanao Del Sur Division, which was the specific geographical area of interest. The study did not encompass schools in other divisions or regions. It was limited to the school year 2023-2024. It examined the linguistic challenges faced by Maguindanaon students during that academic year.

The primary focus of the study were the Maguindanaon students in selected secondary schools. The study might also have involved teachers and school administrators to gain a comprehensive understanding of the linguistic challenges. It also investigated a range of linguistic challenges faced by Maguindanaon students, including language proficiency, communication barriers, and academic performance issues related to language.

Linguistic challenges that arose in different academic years were not within the scope of this research. The study focused exclusively on linguistic challenges faced by Maguindanaon students. Linguistic challenges related to other languages or ethnic groups were beyond the scope of this research.

RESULTS and DISCUSSION

Maguindanaon students in the Maguindanao Del Sur division often struggle with code-switching between their native languages and English. This difficulty affects their pronunciation, grammar, and vocabulary usage, hindering their proficiency in spoken English. According to Bantillo and Ngag (2024), teachers' preferences for teaching language, specifically Filipino were influenced by the learning environment, instructional materials, and personal styles.

Further, the linguistic backgrounds and language use in the homes and communities of Maguindanaon students significantly impact their English speaking abilities. Limited exposure to English outside the classroom, coupled with cultural norms prioritizing indigenous languages, poses challenges for students in developing fluency and confidence in English.

Furthermore, many Maguindanaon students experience feelings of insecurity and low self-esteem when learning English, particularly if they struggle with pronunciation or grammar. They navigate a delicate balance between cultural pride in their indigenous identity and the pressure to conform to Western standards of English proficiency, leading to identity conflicts.

Finally, teachers and schools employ various strategies to support Maguindanaon students in improving their English-speaking skills. These include integrating interactive and engaging activities into lessons, using culturally relevant materials and contexts in English language learning, and implementing peer tutoring programs to provide personalized support and guidance. These approaches aim to create a conducive learning environment and enhance students' confidence and proficiency in spoken English.

A study by Garcia and Cogtas (2020) investigated the impact of linguistic backgrounds on the English proficiency of indigenous students in the Philippines. The findings revealed that students who primarily spoke indigenous languages at home

demonstrated lower levels of English proficiency compared to their peers who spoke Filipino or English at home.

Conclusions

Based on the provided results, here are four major conclusions:

First, Junior High School teachers generally perceived traditional teaching methods in Filipino education as teacher-centered, with a focus on lectures, readings, and didactic instruction. While some teachers may find value in traditional methods, others may struggle with passive learning environments and limited engagement.

Second, modernized approaches to teaching Filipino in Junior High Schools included the integration of technology, interactive online platforms, multimedia resources, and collaborative tools for group projects. These modern approaches aim to enhance student engagement, participation, and comprehension by catering to diverse learning styles and preferences.

Third, teachers' preferences for traditional or modernized approaches to learning the Filipino subject were influenced by factors such as teaching environment, availability of instructional materials, and personal learning styles. While some teachers may benefit from aspects of traditional teaching, others prefer modernized approaches that offer dynamic and interactive learning experiences.

Finally, it has been concluded that the use of technology and digital resources positively impacts Junior High School teachers' engagement with and appreciation of the Filipino subject by providing interactive learning experiences and easy access to academic materials. While technology serves as a motivational tool for students, concerns exist regarding overreliance on gadgets and a potential hindrance to critical thinking skills. Also, teachers' adoption of technology enhanced their connection to the subject and fosters active participation in learning, suggesting a shift towards a more student-centered and innovative approach to Filipino education.

Recommendations

Based on the results, and conclusions, the following were recommended:

1. MBHTE BARMM may collaborate with local communities and stakeholders to develop language policies that recognize and support the bilingualism of Maguindanaon students. They may also advocate for the inclusion of culturally relevant and inclusive pedagogical approaches in teacher training programs and educational policies to address the linguistic and cultural needs of Maguindanaon learners.
2. Maguindanao Del Sur Division may establish language support programs within schools to provide additional resources and opportunities for Maguindanaon students to practice English in real-life settings. They may encourage partnerships with community

organizations and English-speaking mentors to create immersion experiences outside the classroom and enhance students' English language proficiency.

3. Curriculum Developers may design English language curriculum materials that integrate authentic cultural content and examples from the Maguindanaon community. They may also ensure that curriculum frameworks incorporate flexible approaches to language learning that accommodate the diverse linguistic backgrounds and identities of Maguindanaon students, fostering a sense of pride and ownership in their language development.

4. English Teachers may implement differentiated instruction strategies that cater to the varying language proficiency levels and learning styles of Maguindanaon students. They can also incorporate interactive and engaging activities into lessons that promote active participation and collaboration among students. Provide ongoing professional development opportunities for teachers to enhance their cultural competence and pedagogical skills in supporting Maguindanaon learners.

5. Future Researchers may conduct longitudinal studies to explore the long-term impact of language policies and educational interventions on the English language proficiency and socio-emotional well-being of Maguindanaon students. They can also investigate innovative approaches and best practices in bilingual education and culturally responsive teaching that can inform future curriculum development and policy-making efforts.

Compliance with Ethical Standards

Before commencing this study, it was essential to underline the critical significance of ethical considerations within the research focused on the specific linguistic challenges faced by Maguindanaon students in the selected secondary schools in Maguindanao Del Sur Division and explore strategies to enhance their English-speaking skills in the current school year 2023-2024.

To prepare for implementation, all the previously mentioned plans and Inc. recommendations were presented to East-West Mindanao Colleges Inc. to ensure adherence to prescribed procedures and protocols. Consequently, the following ethical principles were emphasized:

Informed Consent:

Before participation, explicit and informed consent was diligently obtained from all school heads involved in the study. They must possess a comprehensive understanding of the study's objectives, methodologies, potential risks, and benefits. Furthermore, participation remained entirely voluntary, affording participants the autonomy to withdraw from the study at any juncture without encountering any adverse consequences.

Anonymity and Confidentiality:

To safeguard the identities and responses of the students, rigorous measures were enacted to ensure anonymity and confidentiality. Rather than using actual names,

pseudonyms or codes were employed, upholding the privacy of the participants. The collected data was securely stored with access restricted solely to the research team.

Avoiding Harm:

Delicate subjects, such as the challenges inherent in their roles, were discussed with meticulous consideration for the potential emotional and psychological impact on the participants. Strategies were in place to minimize distress, and a support system was readily available to assist participants should the need arise.

Researcher-Participant Relationship:

The researcher maintained a professional and respectful rapport with the school heads. Any actions that may exploit or cause harm to the participants were avoided, ensuring their utmost dignity and respect throughout the research process.

Data Protection:

Adherence to data protection regulations and laws was unwaveringly followed to safeguard the personal information of the participants. Stringent measures were employed to ensure the secure storage and transmission of data.

Voluntary Participation:

Participants were assured that their involvement in the study was wholly voluntary, devoid of any form of coercion or external pressure.

Researcher Bias:

The researcher remained vigilant regarding potential biases that might influence data collection and analysis, upholding objectivity and transparency throughout the research endeavor.

Institutional Approval:

Before initiating the study, the researcher diligently sought ethical clearance from the pertinent institutional review boards or ethics committees.

Honesty and Integrity:

The research findings were reported truthfully and accurately, devoid of manipulation or distortion to align with preconceived notions or biases.

Beneficence:

The potential benefits of the research to educational practices and policies were thoughtfully considered, ensuring that the study positively contributed to the enhancement of the education system.

Cultural Sensitivity:

The researcher displayed cultural sensitivity by respecting local customs, beliefs, and practices within the research setting, and refraining from imposing external values on the participants.

Inclusion and Diversity:

The research design gave paramount importance to embracing inclusivity and diversity, encompassing a broad range of students and their perspectives on 21st-century learning. By diligently upholding these ethical principles, the study was carried out conscientiously and with due regard to the rights and welfare of the involved students.

Concurrently, it offered valuable contributions to the field of education, particularly within the unique setting of DepEd Maguindanao specifically focusing on secondary schools.

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PEACE VALUES AMONG MUSLIM COMMUNITY MEMBERS IN CAMIGUIN, PHILIPPINES

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ABSTRACT

This study documented the peace perspectives of the Muslim community in Camiguin along with the aspects of the Focolare Movement. The researcher employed quantitative and qualitative methods.The results of the t-test for gender, number of years in the community and work status and the Bonferroni Correction for age groups and educational levels confirmed that there are no significant differences in the peace perspectives along the seven aspects. Results from key informant interview and focus group discussions revealed that the aspect of Economy and Work emphasizes the “culture of giving” with the realization that each is part of big family; The aspect of Relationship with Others, promotes harmonious relationships through the “art of loving” particularly, it calls for being “one with the other.” Spirituality and Prayer Life , were deeply rooted in one’s rapport with God, the source of strength in loving others; Health is focused on the physical and the spiritual, wherein one may lack in physical health but may be spiritually healthy when one submit to God’s will; Ecology and Harmony is reflected in the external appearance of the individual and communal surroundings of the community as a consequence of being united; Wisdom and Education- calls for knowledge lived in the spirit of wisdom, when employed for love of others; Social Communication and Unity brings about one family by being open to one another and listening to the other as practiced with love. The paradigm can be integrated in peace and development plan for local government units.

Keywords: *culture, Focolare movement, Maranao, peace education, spirituality*

INTRODUCTION

Peace Education is a new discipline in the Philippines. In the past, Western model of peace education was presented in this country. Therefore, a need to evolve a program of peace education in the Philippines came forth. Through a process of dialogue, a framework for educating for peace evolved in the Philippines, focusing on six issues clustered into militarization, structural violence, human rights, environmental care, cultural solidarity and personal peace (Purywanto et al, 2023)

In the light of these issues, roots of peacelessness in our society, four pedagogical principles were integrated in the process of educating for peace. These principles are holism, value formation, dialogue and conscientization. The holism framework perceives the issues as interrelated and that there is no hierarchical order in viewing them. The Peace Education framework highlights some of the values like justice, compassion, caring for life, spirituality and a “one world” orientation. As to the method of pedagogy, peace education has to be stepped in a dialogue as a banking method in teaching is certainly in contradictory to peace (Kester, 2023).

So much national resources are being drained and wasted in the pursuit of sustainable peace especially in Mindanao, the seedbed of conflict. People have defined peace in the area as premised on development. But, in spite of efforts on development, peace is still elusive in the area. A Muslim scholar once defined peace in their own terms: “Peace is a basic need”. In short, there is peace when there is food, clothing and shelter. Peace is equated with development (Kilag, 2023)

There has been a growing desire for development in our own context. For the past two decades, development meant to “generate and sustain” an annual increase in its gross national product at rates of 5 to 7 per cent for national economy. This is confirmed by the fact that the 60’s and 70’s were defined as the Development Decades by resolutions of United Nations. Development here is an attainment of a 6% annual target growth rate of GNP. However, in spite a number of Third World countries did achieve the target goals set by UN, the levels of living of the masses remained unchanged (Maleh, 2021).

The same reality for peace education emerged in the Philippines given that our political, economic and socio-cultural matrix are designed differently from the Western models who have pioneered the Peace Education programs. It is a fact that Filipinos experience their own peacelessness in a society punctuated by diverse cultures, beliefs and practices. (Sears, 2022)

A new economic view of development is proposed. Higgins (2020) proposes a more complex definition of development involving economic, political, social, and human (personal) development. He believes that unless the individual is motivated from within, efforts to promote change will not be sustained. It means gaining self-respect, becoming self-confident, self-reliant, cooperative and tolerant of others’ shortcomings together with acquiring new skills and knowledge and active participation in the economic, social and political development of their community.

Research Questions

The study generally aimed to assess the peace perspective among Muslim community members in Camiguin along with the FOCOLARE Movement (Llubich,2023), a proven paradigm on peace values.
1) What is the profile of the participants?
2) What is the peace perspective of the Muslim community in Camiguin along the seven aspects of the Focolare Movement?
3Is there significant difference in the peace perspective among participants along with the seven aspects of the Focolare Movement when grouped according to age group, gender, educational level, number of years in the community and working status; and
3) What are the insights gained from the issues affecting the family, the community and the nation as a whole?

METHODOLOGY

Research Design

The researchers employed quantitative and qualitative methods. Survey questionnaire was used to gather data on the demographic profile of the respondents. Focus group discussions, key informant interviews and participant observations were done to triangulate responses. Secondary data were requested from the local government units.

Research Locale

The research was done in Barangay Poblacion, Municipality of Mambajao (the capital town) Camiguin Province, Northern Mindanao, Philippines. Poblacion which is classified as urbanized, has a total land area of 1,627 hectares and a population of 11,027 (PSA-Camiguin 2020). It is the center of commerce and trade in the province.

Research Participants

Participants of the research study were purposely selected from the list of community members who were residents of Mambajao for more than six months, at least 18 years old to 65 years old and practiced Islam since birth.

Research Instrument

The researchers used survey questionnaire to gather data on the profile of the participants.
In the survey questionnaire, Likert Scale was used, reference was given to high scores which were then summed up and cross tabulated according to the five variables of age, gender, number of years in the community, educational level and working status, with respect to the seven aspects.

Data Gathering Procedures

Survey questionnaire was administered to 157 Muslim brothers and sisters who are 18 years old and above residing in Camiguin. This was complemented with a semi-structured interview to probe their various insights on their perception of peace along seven aspects. Prior informed consent was also asked from the participants.
Interviews of some early settlers from Lanao provinces, beneficiaries of the progressive and peaceful environment of the province who are now successful in their businesses and careers reinforced the findings. A component of the qualitative method used by the researchers was participant observation.

The case study utilized scholarly researches done by both Muslim and Christians on the cultural traits of the Maranaos who were the respondents of the study.

Statistical Techniques

Descriptive statistics such as frequency counts and percentages were used to describe the profile of the respondents. To test the differences of means, the t-test for equality of means was employed for the pairs of gender, number of years in the community and working status as to see if the differences are statistically significant with respect to the seven aspects. To enable a comparison of groups of means at the same time for age groups and educational level, the Bonferroni Multiple Comparison procedure was used.

RESULTS

Profile of the Participants

The participants were grouped according to age, gender, educational level, number of years in the community and working status.

A. ***Age Group***

The age of the respondents is from 18 to 65 above. The young population totals 75 which is 47.77 %, the mid adult as 56, which is 35.67 % and the older group is 26, or 16.56 %.

B. ***Gender***

The male participants are 82, which is 52.23 % while 75 are female participants which constitutes 47.77 %.

C. ***Educational Level***

According to educational status, 32 participants obtained elementary education, which is 20.38 %; those with secondary education totals to 72 consisting of 45.86 % and 47 have tertiary education which is 29.94 % .

D. ***Number of Years in the Community***

Of the 157 respondents, 102 have been in Camiguin Island for a period of at least ten years below, constituting 64.97% while only 55 have been in the island for more than eleven years which is 35.03%.

E. ***Working Status***

Of the 157 who responded, 74 are either employed or self-employed comprising of 47.13% the total, while 83 are not working, which comprises 52.87% of the total participants.

The results of the t-test for gender, number of years in the community and the Bonferroni Multiple Comparison procedure for age groups and educational levels confirm that there are no significant differences in the peace perspective along the seven aspects, except for the variable gender with respect to Relationship with Other. In this case, the female is in the forefront of this peace perspective.
However, post-research interviews confirm the initial findings of raw scores pointing to the older group who prevail in various aspects like Economy and Work, Relationships with Others and Wisdom and Education, as more attuned to the peace perspectives. That they are also in the frontline in the other aspects of but is given focus by the educational level, number of years in the community and working status. Spirituality, Health, Ecology and Harmony, where raw scores for age group indicate they are not in the top is compensated by post research interviews, which reiterate they are more peace-oriented than the other groups because they have a major role to play in resolving family and community conflicts. Certain situations call for their wisdom and experience, rather than scholastic degrees, where they have proven they can be impartial to the clan system as Islamic teachings prevail.

Insights Gained on Peace Issues Affecting Family, Community and Nation

Findings also from issues which directly affect peace within the family and community highlights the older group with the highest scores as not favorable to the cultural practice of revenge; as adhering to Muslims and Christians working together for community development and as not favoring to matchmaking. However, results showing the older group as more hesitant in having a Christian administrator, it is but a logical consequence of historical precedents, negative experiences, which they witnessed and encountered during Christian migration. This however, does not contradict their peace orientation as peace, in their paradigm is equated with their people's empowerment economically, socially, culturally, spiritually, educationally and above all politically. In their perspective, peace would not be that distant if given the opportunity to govern themselves and utilize for their own communities.

Insights Gained from Semi-Structured Interviews

Over-all data shows that Ecology and Harmony and Relationship with Others are perceived consistently as foundations for attaining peace. The absence of the two aspects is also key factors for peace to be elusive.

Participant Observation

Through participant observation, the researcher participated in the religious, economic, social activities, which are peace activities in line with the peace paradigm of the study. The researcher noted particularly that the older group comprises a bigger portion of those

who frequent the mosques daily. This is also validated by the majority of the older group present in spiritual gatherings.

In Depth Interviews

In depth interviews, conducted among the older group, also reinforce their peace orientation and involvement in peace efforts in the municipality.The resulting data imply that as Maranaos get uprooted from their own communities, certain negative practices entrenched for generations and have been root causes of the absence of peace in the families and communities gradually disintegrate, as other values gain upper hand. Apart from the results of the study, scholarly researchers of Cagape et al (2024) confirm social changes in Maranaos' way of life, attributed to Western values, deterioration of cultural traits, gradual acceptance and recognition of Islam as a way of life, which sees humanity as one fraternity, thus diminishing of clannishness. From the major findings, one can say that dialoguing efforts are recommended which could be undertaken through concrete projects along the seven aspects.

DISCUSSION

Scholarly researches gives an over- all picture of the respondents in their own setting. Abuza (2020) says that Maranao social organization revolves on four basic units: the household, the community, the state and the nation or society as a whole.

In synthesis, the households may consist of as many as forty residents persons (children and adults) with 35 as frequent size. There are three focal points of the community: the mosque, the community leader's house and the lama (plaza). Devout Muslims pray five times a day and usually frequent the mosque. The community leader's house is the meeting place whenever there is a community decision or problem to discuss. The plaza is a gathering place for socializing (Ragandang, 2023)

The Muslim communities or agamas have their own set of elected leaders with an advisor who may represent specific lineages in the community. Decisions are arrived at through discussion and consultation involving persons in the community according to their prestige, importance and persuasiveness. The imam is the religious leader who is powerful in mosque affairs and activities (Eder, 2020)

There are three levels of units in Maranao society whose relationship are important. These are the individual, the household and the community. There are two major principles that are to be considered fundamental encompassing and pervasive in these three levels: 1) descent or lineage and 2) relative worth or prestige (Perez, 2021)

Bangsa or descent lines who one is, what rights and duties one has in relation to others, who one is affiliated with and where one belongs- all depend upon who one's ancestors were. For this reason, market relationships, political relationships and participation in works and feuds, friendship and enmity are defined by the relative distance and closeness of the several parties' bangsa (Farooqui, 2021).

Political alliance is a major for social and economic status. Social and economic mobility depends on political alliance. There is no single community that runs without politics. One needs to sustain status with money and sustain relationships with politics (Tatsumi, 2020)

An aspect to be considered in Maranao society is marriage since it is the most important specific relationship. Primarily, it means an affiliation between lineages, rather than between persons. They are contracted in the interest of lineage groups and agamas for gaining political power and to ensure body of supporters (Ferrer, 2023)

Ragsag (2020) stressed a particular Maranao trait – their entrepreneurship. He explains that early historians observed that the Maranaos had been a trading people even prior to contact with the Spaniards and later with the Americans. This particular trait for entrepreneurship is one of the factors for social mobility among the early settlers of Camiguin.

Conclusions

Given this characteristics, one could appreciate more the efforts for the individual and community to bring about peace in their surroundings. These cultural traits like entrepreneurship and clannishness are also the foundations for peace when utilized positively. Those who were early settlers have proven they were in the frontline for peace efforts in the locality. They are involved in peacekeeping in the various communities. Their own interests to have better education, economic gains and political recognition for their own family and community are springboards for maintaining peace in the municipality. On the other hand, the past and present local leaders have opened the various opportunities for them to bring about social mobility.

Recommendations

A. ***For Economy and Work*** – Local resources like DILG funding could be looked into through loan program could be sustained. NGOs could also involve them in cooperative and micro-finance training. Joint projects of Muslims and Christians could be done like fund raising for the needs of the community.

B. For Relationships with Others – Sustain Muslim Christian ventures in different aspects especially the Muslim women sector has proven to be more open towards the peace paradigm.

C. ***For Spirituality and Prayer Life*** - Muslim-Christian Symposium would be a possibility to get to know each other's culture and religion. Participation of youth in certain religious activities like Ramadan and Easter celebrations would be an eye opener for both.

D. ***For Health*** – Sports activities could be initiated where young Muslims and Christians in the medical field could initiate projects for both Muslim and Christian beneficiaries.

E. ***For Ecology and Harmony*** – Youth activities where both Muslims and Christians could work together in certain projects like tree planting, garbage recycling and coastal clean-up.

F. ***For Wisdom and Education***, further researches could be done to isolate certain factors in other regions in Mindanao where Muslim and Christian conflicts could be triggered. Seminars and lectures on local history through the Muslim perspective could serve as enlightenment as Muslims felt the lack of the Muslim ingredient in the documentation of local histories.

G. ***Social Communication and Unity*** – More involvement in the updating and sharing of educational researches could be organized by institutions of higher learning.

Compliance with Ethical Standards

Entry protocol was done by asking approval from the officers of the Camiguin Muslim Association (CMA). Prior informed consent were sought from the participants before administering the survey and conducting the focus group discussion and key informant interview. The participants have the freedom to withdraw from the study at any time. There was no conflict of interest that exist. Anonymity of the participants was observed and their well being was safeguarded from the start of the research until its termination. Plagiarism was strictly avoided. There was no bias in interpreting the findings. The results were used solely for research.

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PERCEIVED LEARNING DIFFICULTIES IN MATHEMATICS: A GENERAL QUALITATIVE RESEARCH

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ABSTRACT

This general qualitative research explored the perceived learning difficulties of the learners in both junior and senior high school in mathematics-by-mathematics teachers in Marikit Normal School in the division of Marikina City. Eleven mathematics teachers from junior high school and senior high school who taught mathematics subject in previous school year 2023-2024 were participants to this study. A validated researcher-made survey questionnaire was administered to determine the perceived learning difficulties of the learners in mathematics subjects. Data collection was done through the messenger media platform with the use of google form. Results show the perceived learning difficulties of the learners in mathematics are: the mathematical learning difficulties, less mastered learning competencies, and poor mathematical skills. For mathematical learning difficulties, the researcher found out that learners have difficulty to perform the fundamental operations, difficulty to comprehend mathematical problems both numerical and word problems, and difficulty in dealing fractions. While in less mastered learning competencies, the topics on operations on rational numbers, factoring, analysis and problem solving, trigonometric identities, and statistical software are not mastered by the learners. And for the numeracy skills specifically problem-solving skills, numerical ability, and data analysis skill are the mathematical skills that need to be mastered by learners. The result of the study suggests that the findings should be considered and be the bases for the development and enhancement of some school programs for the improvement of the learners like the modification of the learning competencies of mathematics, providing more activities in problem solving, and enough time to the do activities for each grade level. Based on the findings of this study, it is also

highly recommended by the researcher to conduct further research on the factors that cause the mathematical learning difficulties of the learners.

Keywords: *Mathematical learning difficulties, Less mastered learning competencies, Poor mathematical skills*

INTRODUCTION

Mathematics is essential for understanding and solving problems in our technologically advanced world. Mathematics plays an essential role in the modern world across various disciplines. Specifically, this subject is significant to various fields like Technology and Innovation, Business and Finance, Science and Engineering, Healthcare and Medicine, Environmental Studies, Communication and Networking, Transportation and Logistics and Cartography etc. Without Mathematics, all of these disciplines would not be successful and there will be no development of technology and society and the world as whole.

Hodaňová and Nocar (2016) had mentioned that Mathematics is important for life and supports all-round personal development. Mathematics significantly influence students' education both in a special branch (mathematical knowledge) and in terms of moral education. They had also mentioned that in this contemporary life people should be required to have a good mathematical knowledge.

But the problem is how we can achieve these goals if there are problems facing education. Learning in some countries, especially the underdeveloped and developing countries, is in crisis. The latest result of PISA revealed a shocking low performance of most learners across the countries that participated in the global assessment, especially in Mathematics. Between 2018 and 2022, mean performance in Mathematics across Organization for Economic Co-operation and Development (OECD) countries fell by a record 15 points (OECD 2023).

Globally, six out of ten children and adolescents are not learning a minimum in reading and mathematics, according to new estimates from the UNESCO Institute for Statistics (UIS). The total – 617 million – includes more than 387 million children of primary school age and 230 million adolescents of lower secondary school age. This means that more than one-half – 56% – of all children won't achieve minimum proficiency levels by the time they should be completing primary education. The proportion is even higher for adolescents at 61% (UNESCO 2017).

In the study conducted by Murtiyasa and Lahtifa (2023) they have mentioned that learners had difficulty in learning mathematics because they cannot understand the material given within a certain time. Students feel bored and do not focus on understanding the material given by the teacher during distance learning. Students experienced learning difficulties in Mathematics due to lack of support from their teachers as most teachers had negative

attitude towards them. Teachers' use of poor Mathematics Instruction techniques caused the learners to have difficulties in the subject (Mitumba & Chirwa, 2024). The students' perception of the learning of mathematics greatly affects students' motivation to engage in learning mathematics and achievement. The positive perception of students encourages them for effective learning (Khanal, 2022).

The use of multimedia in teaching not just for instruction but also for students' comfort and learning is necessary and infusing humor in the videos give a new branding of the multimedia for instruction (Murillo & Tan, 2022). The development of innovative learning approaches like Learning Activity Sheets (LAS) is important as a tool to improve the learner`s less mastered learning competencies in Mathematics (Lacson & Jaminal, 2024). The use of micro-lectures via ED Puzzle in delivering the lessons in Mathematics during an asynchronous online class is necessary to improve students' achievement of its learning competencies (Romorosa, 2023).

The development of student`s problem solving skills is important and to create meaningful learning in mathematics that can develop complex thinking skills especially in the ability to solve problems in the field of Mathematics (Fauzi et al, 2023). The mathematical literacy skills of senior high school students in solving problems involving the system of linear equations of three variables must be developed (Melisa & Utami, 2023). Mathematical Skills must be given consideration and attention because it is significantly correlated to Mathematics Performance of the learners (Jade and Oco, 2023).

In Philippines, there is also a major learning crisis in basic education both elementary and secondary especially in Mathematics. The latest results of PISA and TIMMS revealed that there is major crisis in the basic education in the Philippines. The Philippines scored 297 in Mathematics and 249 in science**,** according to the Trends in International Mathematics and Science Study (TIMSS) 2019 by the International Association for the Evaluation of Educational Achievement (IEA).

The country has also a dismal performance in PISA. In the latest PISA result, Philippines, once again had ended up among the countries that produced the lowest proficiency for 15-year-old students in reading, mathematics, and science as indicated by the PISA rankings. The country ranked 77th out of 81 countries globally (Magsambol, 2024).

In the local level, students from the National Capital Region have achieved an average score of Proficiency level 1 in Mathematics literacy based on the PISA 2018 (TEACHERPH). At Level 1 students can answer questions that involve familiar contexts where all of the relevant information is present, and the questions are clearly defined. They can identify information and to carry out routine procedures according to direct instructions in explicit situations. They can perform actions that are obvious and follow immediately from the given stimuli.

The Philippines is in critical situation in terms of education especially in Mathematics that requires immediate actions. The government in collaboration with some experts and researchers should do something to address this crisis in education. Now, to be able to help solve the problem, the researcher has thought of conducting a qualitative study which is, "Perceived Learning Difficulties of Senior High School Learners in Mathematics".

Initially, the first step the researcher has come up towards solving this crisis in Philippine education most especially in mathematics is to determine the specific learning difficulties of the learners. Determining learning difficulties of the learners in mathematics is crucial for effective education. It is also essential to recognize Mathematical Learning Difficulties (MLD) early to provide specific solutions and timely support to the learners.

Mathematical Learning Difficulties (MLD)**,** also known as dyscalculia affects a person's ability to comprehend numbers, symbols, and perform mathematical calculations. Learning difficulties can significantly impact students in various ways, one of them is the poor academic performance. Students with mathematical difficulties (MD) reported lower enjoyment, lower hope, and higher anxiety than those without MD where hope and enjoyment played a mediating role between learning difficulties (LD) and academic achievement in both the literacy and math domains (Sainio et al, 2019). Students with learning difficulties may struggle to keep up with their peers academically that will lead to frustration, low self-esteem, and lack of confidence in their abilities. This struggle of the learners leads to have an education crisis of the country especially in Philippines.

While there have been actions and research to address this problem within the learners and in the education crisis of the country, there is a need for more studies that will give solution to these emerging problems that are deteriorating the quality of education.

The purpose of the study is to assess the learning difficulties of the learners in Mathematics, determine the less mastered learning competencies in Mathematics, and assess the Mathematical skills of the learners for the development of a certain solution to low performance of the learners in the local, national and global assessments.

Research Questions

The study aimed to describe the perceived mathematical learning difficulties of the junior and senior high school learners in Marikina High School in the division of Marikina City. Specifically, it sought to answer the following questions:

1. What are the learning difficulties of the learners did you observe in the mathematics subject you were teaching?
2. What are the less mastered learning competencies in the mathematics subject you were teaching?
3. What are the less mastered skills of the learners in the mathematics subject you were teaching?

METHODOLOGY

The procedures conducted in this study are described in detail such as the research design, the mechanism for the selection of the participants and the sampling procedure, the instruments, data collection, data analysis framework, and ethical considerations.

Research Design

This study aims to find out and describe the mathematical learning difficulties of the junior and senior high school learners in Marikit Normal School in the division of Marikina City. This research had employed a qualitative research design for the data gathering and analysis. Qualitative research is used in this study for this study focused on the perceptions and experiences of the teachers on the learning difficulties of the learners in mathematics subject.

Sampling Procedure and Participants

In this study, the non-probability sampling method which is a convenience purposive sampling was employed to choose the participants of this study. The participants of this study were all active mathematics teachers from junior high school and senior high school that taught mathematics subject in previous school year 2023-2024. They were the mathematics teachers that willingly participated in this study and they were provided with an informed consent. The chosen participants of this research were eleven (11) Mathematics teachers from junior and Senior high school of Marikit Normal School.

Table 1. Respondents as to their grade level

Grade level	Frequency (f)	Percentage (%)
Grade 7	2	18.18
Grade 8	3	27.27
Grade 9	1	9.09
Grade 10	1	9.09
SHS	4	36.36
Total	11	100

Instruments

The researcher had formulated a survey questionnaire and undergone the process of validation. The questionnaire was divided into two parts. Part one, consists of the demographic profile of the respondents. In the demographic profile, the participants are asked to give their name, email address, school, and subject taught. While part two, consists of three open-ended questions asking the respondents on their experiences and observations on the learning difficulties of students in Mathematics subject they were teaching.

Data Collection

The following procedures were adapted by the researcher to gather the needed data for this study: First, a letter of permission to conduct the study was submitted to the school principal. Second, an informed consent for some clarifications and full information about the research was also presented to the school principal and given to the participants of this study. Third, the survey questionnaire was sent to the respondents through

messenger with the use of the google form. Fourth, the responses of the participants were retrieved and reviewed from the dashboard of the google form. When all participants had finished answering the survey, the data and all responses were reviewed through the dashboard where all responses were automatically recorded. Finally after the survey was conducted, the results were organized and analyzed thematically.

Table 2. Timeframe for collection of data

	Week 1	**Week 2**	**Week 3**	**Week 4**	**Week 5**
Seek permission from the school head.	June 17-22, 2024				
Present informed consent to the school head and participants					
Distribution of survey questionnaire through google form.		June 24-29, 2024			
Retrieval and review of data and responses of participants.			July 1-6, 2024		
Organization and interpretation of the data.				July 8-13, 2024	July 15-17, 2024

The Table 2 presents the time frame of the collection of the data from the first week of the procedure when researcher sought for the permission from the principal up to the last week of the procedure which was the organization and interpretation of the data.

Data Analysis Framework

Since this study is a qualitative research, the researcher had employed a framework analysis which is a thematic approach that is appropriate for this study. After the data had collected, the researcher familiarized and analyzed the data before coding them. Then the researcher had created the initial codes of the collected data. After the creation of the initial codes, the data were organized and classified into categories. After grouping the codes into categories, the data were reviewed and clustered into themes.

Nicolas (2021) defines thematic analysis as one of the most important types of analysis used for qualitative data. According to him when researchers have to analyze audio or video transcripts, they give preference to thematic analysis.

Ethical Considerations

In this study, some ethical considerations were observed. The researcher had sought permission from the school head and Mathematics department head. An informed consent was also obtained from the participants for their awareness of the purpose, procedures, risks, benefits of the study together with their rights to withdraw anytime they want. The names and the responses of the respondents were kept confidential. For confidentiality of the name of the school a pseudonym was used which is Marikit Normal School.

RESULTS

Table 3. Summary of themes

Code	Categories	Theme	Description of Themes
• Some students do not know the basic Math • Basic operations • Fundamental operations(integers), fractions, linear inequalities • Mathematical operations • Basic skills are not mastered can't formulate any formula.	Fundamental Operations	Theme One: Learning Difficulties of the Learners	These themes in general are the observed learning difficulties of students in Mathematics subjects.
• The comprehension capability of students • No mastery of lesson • Learners find it difficult to understand the topics	Comprehension		
• Weaknesses in fractions • Operation of signed numbers, division/fraction • Lack of resources and tools that support effective teaching	Fraction		
• Fundamental Operations on Integers and rational numbers • Integers, fractions& linear inequality • All topics under Rational	Operations on Rational Number	Theme Two: Less mastered	

• Simplifying Polynomials/Factoring Polynomials • Factoring	Factoring	Learning Competencies	
• The melcs which involve analysis and problem solving • Solves problems involving logarithmic functions, equations, and inequalities.	Analysis and problem solving		
• The 4th quarter MELCS • Problems involving proving trigonometric identities	Trigonometric Identities		
• Operations on subtraction, Multiplication and Division	Fundamental Operations		
• Use of Statistical Software and Technology	Statistical Software		
• Problem solving • Problem Solving • In problem solving, they cannot can't formulate the equations • Solving problems and graphing functions • Some learners very poor foundation in fractions (Rational) especially in problem solving • Solve real-world problems	Problem-solving	Theme Three: Less mastered skills of the learners	
• Simplifying Polynomials/Factoring Polynomials • Integers, fractions, linear inequalities • Integers and Algebra • Rational	Numerical Ability		
• Understanding and implementing various probability distributions	Data Analysis		

Table 3 presents the results of the study through step-by-step process from initial coding of the data to creating categories of the data and to thematization of the data. It is shown in this table that there are three themes created such as: Theme one (1), Learning

Difficulties of the Learners in mathematics; Theme two (2), Less Mastered Learning Competencies in mathematics; and Theme three (3), Less Mastered Skills of the Learners in mathematics.

DISCUSSION

Learning Difficulties of the Learners

The Learning Difficulties of the Learners in mathematics are the struggles of the learners to cope up and master the lessons that their teachers had taught them. Some of these struggles experienced by the learners based on the responses of the participants are the following: the difficulties of the learners to perform the four fundamental operations, difficulties to comprehend some mathematical problems, and difficulties to familiarize fraction and perform the operations on this concept. Obviously, based on the data most of the learners have poor foundation in mathematics especially in fundamental operations which is very vital in learning mathematics. Once the leaners had not mastered these fundamental operations all topics will be affected and this will be one of the causes of the struggles of the learners in mathematics. Proper training in basic mathematical operations through the activity-based strategies, the learners' performance in mathematics will be enhanced. When they become thorough in basic mathematical operations, they themselves get ready to do more complex operations in mathematics (Kavitha & Saravanakumar, 2014). The learning difficulties of the learners that were mentioned by the participants have an indication that the learners had not learned these topics from their previous teachers. These learning difficulties of the learners that were observed by mathematics teachers in their classes are not developed in them. These are the skills that teachers should be given focus or interventions. Mathematics teachers has to provide activities that would help learners overcome these learning difficulties in mathematics and provide students an opportunity to showcase their skills in mathematics to improve their academic performance. Giving praise at the appropriate time and providing opportunities for students to showcase their abilities in the classroom helps learners enhance mathematics learning (Khanal, 2022).

Less Mastered Learning Competencies

The Less Mastered Learning Competencies in mathematics are the topics that are not mastered by the learners such as operations on rational number, factoring, analysis and problem solving involving functions, trigonometric identities, fundamental operations, and statistical software. The data says it all, that most of the learners has really a poor foundation in mathematics. These topics in mathematics that are not mastered by the learners require a good foundation in basic concepts of mathematics like fundamental operations and fractions. The basic foundation of the learners in mathematics should be fully developed for them to connect to the new level of foundations in mathematics subjects. Mathematics is one but its foundations are many and the older foundations allow for reconstruction of a new foundations in mathematics (Rodin, 2023). The topics that are

not mastered by learners are the basic concepts in each level of mathematics subjects. So, the learning competencies for these topics should be reviewed and modified and intervention programs should be implemented also to address this problem. Strategic Intervention Material should be adopted by high school teachers as an additional learning material to address the weaknesses of the learners along the identified least learned competencies (Laña, 2023).

Less mastered skills

Least mastered skills of the learners in mathematics are the mathematical skills that are not mastered by the learners such as problem-solving skill, numerical ability, and data analysis skill. Based on the data provided by the participants, this means that most of the learners are poor in these skills which are generally connected to numeracy skill. Numeracy skill is vital foundation in mathematics and in the academic foundation of the learners that must be developed in the learners at an early age. Early math has a strong impact on later academic achievement, especially math success (Tiedeman, 2019). The results imply that something must be done to address this problem within the learners. Since numeracy skills need more activities to be practiced, the school should provide more activities and enough time to develop their numeracy skills. Additional session time is needed to provide sufficient time to deliver the lessons, and students need other activities on word problems to practice their problem-solving skills (Decena, 2021).

Overall, there is a need for continued research on identifying some factors that causes these perceived learning difficulties of the learners in mathematics that affect their academic performance, as this has important implications on the learner`s ability that could be the bases of the actions of school head and mathematics teachers to address the poor performances of the learners not just in Mathematics but in all subject areas. Factors causing the learning difficulties of the learners should be identified if it is a family factor, system factor, leadership factor, teacher's factor, and etc. These factors that affect the learner`s ability must be identified and confirmed to make an appropriate solution and immediate actions to the identified mathematical learning difficulties of the learners in this study.

Conclusions

The purpose of this study is to describe the perceived mathematical learning difficulties of the learners both junior and senior high school in Marikit Normal School in the division of Marikina City. The study had aimed to attain the following objectives: describe the learning abilities of the learners, determine the less mastered learning competencies in mathematics, and describe the mathematical skills of the learners. The findings of this study are a big help to address the problems perceived by teachers within their learners like the learning difficulties of the learners. Through these findings, the struggles of the learners most especially in the fundamental operations will be given focus and interventions. Likewise with less mastered learning competencies, the topics under these competencies will be revisited and reviewed. Through the findings of this study, the

teachers could have now an insight on how to improve the mastery of the learners by consistently providing an intervention activities and giving more additional materials to the learners. And so with the less mastered skills of the learners in mathematics. The findings of this study are a big help for teachers to think of activities and remedies in developing the numeracy skills of the learners like an additional session time and activities on word problems. An additional session time that will be needed to provide sufficient time in delivering the lessons and to give more activities on word problems to practice their problem-solving skills.

After a review and thorough analysis on the data and all responses of the participants in this study, the results for the learning difficulties of the learners in mathematics, less mastered learning competencies in mathematics, and less mastered skills in mathematics are as follows:

For the learning difficulties of the learners in mathematics, the researcher found out that the struggles of the learners in mathematics subject are difficulty in performing fundamental operations, difficulty to comprehend mathematical problems both numerical and word problems, and difficulty in dealing fraction. While in less mastered learning competencies in mathematics, the researchers found out that some topics in their respective subjects are not mastered by the learners like operations on rational numbers, factoring, analysis and problem solving, trigonometric identities, and statistical software. And for the less mastered skills in mathematics, the researcher found out that the skills that need to be mastered by learners in mathematics are more on numeracy skills specifically problem-solving skills, numerical ability, and data analysis skill.

Generally, these are the perceived learning difficulties of the teachers in their learners on their respective subjects. These findings are vital and an initial step to provide solutions to the educational crisis within the school and the division as well. These could contribute for the development of the new school program and framework. This is an eye opener for the stakeholders and not just for educators of the school that they should be more responsible for the learning outcomes of the learners. These findings are the bases of what would be the actions of the teachers and school head to address the perceived learning difficulties of their learners. These findings could be considered for the development and enhancement of some school programs for the development of the learners. These findings can be the bases for the modification of the learning competencies of mathematics for each grade level.

The findings of this study have some possible good impacts to the decisions and actions of the school head and most especially the mathematics teachers on how they will address these problems within the learners. Nonetheless, the results of this study must be interpreted with caution and several limitations should be borne in mind. There are two major limitations in this study that could be addressed in future research. First, the study had just focused on perceptions of few teachers within one school. Although this school is a big school in the division of Marikina City but it would be better if more participants, including the learners from other schools within the division could participate in this study

to gather more data. Second is the process of gathering the data from the participants where the survey questionnaire were sent through the messenger with the use of the google form. There was no face-to-face interview done in gathering the data for all teachers during the process of data collection were in vacation. So, the researcher suggests that these limitations and weaknesses should be considered by future researchers if they wish to conduct the same study.

Recommendations

Overall, there is a need for continued research on identifying some factors that causes these perceived learning difficulties of the learners in mathematics that affect their academic performance, as this has important implications on the learner`s ability that could be the bases of the actions of school head and mathematics teachers to address the poor performances of the learners not just in Mathematics but in all subject areas. Factors causing the learning difficulties of the learners should be identified if it is a family factor, system factor, leadership factor, teacher's factor, and etc. These factors that affect the learner`s ability must be identified and confirmed to make an appropriate solution and immediate actions to the identified mathematical learning difficulties of the learners in this study.

Compliance with Ethical Standards

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PERCEIVED LEVEL OF SCHOOL HEADS' COMPETENCE IN FINANCIAL MANAGEMENT PRACTICES

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ABSTRACT

This study examines teachers' perspectives on the financial management practices of school heads within specific divisions of region 10, aiming to gather data on the challenges faced by teachers and the coping mechanisms they employ. Using a mixed-method research design and researcher-made questionnaires, the findings reveal that the majority of respondents were female, in their 30s and 40s, and had over 11 years of teaching experience, with school heads demonstrating a high level of competence in financial management practices. While no significant differences were found in perceptions between males and females or across age groups, significant differences were observed based on civil status and teaching experience. The key challenges faced by school heads include budget allocation, transparency, training, stakeholder engagement, and unforeseen emergencies, with teachers employing strategies such as communication, advocacy, data analysis, resource allocation, and external support to mitigate these challenges. The study recommends that school heads receive training programs focusing on financial management, leadership competencies, and technical skills to address the identified challenges and improve overall financial management practices.

Keywords: *School Heads' Competence, Financial Management Practices, Knowledge, Attitudes, Skills*

INTRODUCTION

School Heads, like all other leaders, organizations must make decisions in terms of how the money is used in the direction of public schools (Atieno, 2012). These choices, in line with Brigham (2012) and Houston monetary effects on the financial administration of school leaders are the most important part in guaranteeing the efficiency and performance of schools considering how the school is run on a daily basis (Ballada and Ballada, 2012). An organization cannot fully function without enough resources. It is difficult to disregard this aspect since, as much how brilliant the proposed program, project, or activity is, it will always be the finances that will make it happen. In this case, Fiscal Management is the key to ensure a successful program. In education, it is important to have proper fiscal management in order to ensure the appropriateness of the organization's spending and to make changes, if necessary, which helps minimize budgeting complexity.

Furthermore, Fiscal Management in Education ensures that a school or an academic organization has funds to fulfill its goals and objectives, and that these funds are utilized for which they were intended to be employed. Allocations and expenditures of resources should be justified in terms of their expected impact on teaching and learning. For example, many students who chose Modular learning modality have phones or laptops but do not have access to the internet. Instead of printing numerous pages of modules for a large number of students, flash drives consisting of the modules and activity sheets of students can be provided. It does not just save money but also, it is efficient because it saves time. The fiscal management system should employ existing resources in effective and efficient ways to meet students' educational needs. Although, thorough planning and analysis should be employed before releasing any funds.

One study by Jordan et al (2021) reveals that as to the management capability school administrators are more capable in creating a student-centered learning climate and managing the school operations than human resources management and professional development. As to schools' performance, the Participation rate, cohort survival rate, promotion rate, drop-out rate, repetition rate, and graduation rate, their school performance is considered superior. However, retention rate, transition rate, completion rate and teacher-pupil ratio only performed meeting the standards. Moreover, the study reveals that the profile and management capability of school administrators have no significant relationships with their school performance. The latest work conducted by Macalisang (2023) found out that: (1) school administrators' administrative practices are typically proficient like their roles and responsibilities as educational leaders; (2) school administrators' instructional supervision is typically at a competent level; (3) the school's organizational culture was high; (4) the school administrators' administrative practices do not typically have a significant impact on the school's organizational culture, and (5) school administrators instructional supervision typically have a significant impact on the school's organizational culture but to a significant extent. To strengthen the performance indicators of administrative practices and instructional supervision among school principals, and thereby improve the quality of our current schools, it may be necessary to add to the current policy guidelines. This research study is about the

teachers' perception on the financial management practices of school heads in selected divisions in region x is anchored on the following domains: knowledge, attitude and skills.

This study also explores the financial management of school heads as well as the challenges encountered and coping mechanisms applied. Moreover, this research has the purpose to gather data in order to attest the performance of the school heads as fiscal managers. The result of this work is very much significant to the school administrators, teachers, students, parents and stakeholders in account the result is not only for the awareness of the aforementioned individuals but also for the progress and improvement of the fiscal management which in turn can also bring out the best in the teaching-learning process.

Research Questions

The primary aim of this research is to investigate the teachers' viewpoints on the financial management practices of school heads within specific divisions of Region X. Additionally, the study aims to gather data concerning the challenges faced by the teachers and the coping mechanisms they utilize in response to these challenges.

To achieve these objectives, the research will address the following key questions:

1. What are the demographic characteristics of the respondents, including sex, age, civil status, and the number of years in teaching?
2. How do the respondents perceive the level of competence of school heads in terms of financial management practices, specifically considering knowledge, attitude, and skills?
3. Is there a significant difference in teachers' perceptions regarding the financial management practices of school heads within the selected divisions of Region X, based on their demographic profile, such as sex, age, civil status, and the number of years in teaching?
4. What are the primary challenges faced by the teachers concerning the financial management practices of school heads in the selected divisions of Region X?
5. What strategies or coping mechanisms do the teachers employ to address the challenges they encounter in relation to the financial management practices of school heads in the selected divisions of Region X?

METHODOLOGY

This section presents the research design that was employed in this study, the research respondents, research instruments, the process of establishing the content validity and reliability of the research instrument with its scoring procedure, the data analysis procedure, and the ethical considerations that were observed and lastly the statistical tools that were used in organizing the data.

3.1. Research Design

This study used the mixed- method research design. The researcher found this research design as deemed appropriate for the study in order to gather information that can help define a research problem precisely, a qualitative and quantitative research techniques were used intended to investigate the teachers' viewpoints on the financial management practices of school heads within specific divisions of region 10 and to gather data concerning the challenges faced by the teachers and the coping mechanisms they utilize in response to these challenges.

3.2. Research Respondents

The study respondents were fifty (50) consisted of teachers from various public and private schools within the selected divisions in region 10. The reason for choosing this region was its diversity in terms of school settings and financial management practices. A targeted sampling design was utilized to select the respondents, aiming to include respondents who had direct experience with school heads' financial management practices. This approach ensured that the respondents had relevant insights and experiences to contribute to the study.

3.3. Research Instruments

This study utilized a researcher- made questionnaire consisting of three (3) survey questionnaires to investigate the level of competence of school heads in terms of financial management practices, specifically considering knowledge, attitude, and skills. To determine the respondents' level of competence specifically in knowledge, a researcher made survey questionnaire was utilized consisting of fifteen (15) items. Furthermore, to determine the level of competence in attitude, a questionnaire consisting of twenty (20) items was also utilized and twenty (20) items questionnaire for the competence in skills. The three (3) survey questionnaires used a Likert- scale from strongly agree (5) to strongly disagree (1).

3.4. Validity and Reliability of the Research Instruments

The questionnaire was carefully crafted to gather data on the research questions. It consisted of several sections: demographic information (sex, age, civil status, number of years in teaching), perception of school heads' financial management competence (knowledge, attitude, and skills), challenges encountered, and coping mechanisms employed. Each section contained specific items related to the dimensions being measured.

Moreover, the questionnaires used in the study were subjected to content validation by the panelists and field experts. Their comments and suggestions were incorporated into the final paper. The research instruments were pilot-tested to fifty (50) teachers who were not the respondents of the study in order to test the reliability of the items in selected divisions in region 10.

Furthermore, Cronbach's coefficient alpha was used to test the reliability of the items. The items under the competence specifically in knowledge got a Cronbach alpha of 0.97, the items under attitude got a Cronbach alpha of 0.97, and for the items under

skills got 0.95. Gliem and Gliem (2003) cited that the closer the Cronbach's alpha coefficient to 1.0, the greater its internal consistency, specifically from 0.7 to 1.0. The values showed the reliability and internal consistency of the instruments' items in measuring the study's variables; thus, the items were considered highly reliable.

3.5. Scoring Procedure

To interpret the data, the researcher employed the following scoring procedure in each study variable.

*Legend:

Scale	Interval	Qualitative Description	Qualifying Statement
5	4.51-5.00	*Very High*	5 out of 5 Situation
4	3.51-4.50	*High*	4 out of 5 Situation
3	2.51-3.50	*Moderate*	3 out of 5 Situation
2	1.51-2.50	*Low*	2 out of 5 Situation
1	1.0-1.50	*Very Low*	1 out of 5 Situation

Source: Johnson, K. M., & Smith, L. A. (2021)

3.6. Data Gathering Procedure and Ethical Considerations

Before conducting the research study, the researcher asked for the teachers' permission to perform the study in selected school levels in the division of region 10. Upon approval, the researcher asked for the respondents' email addresses since the questionnaires were administered via Google form. A letter together with the informed consent and questionnaires were sent via email to the respondents. Also, the respondents were assured of the anonymity and privacy of the data gathered. As stated in RA 10173 or the Data Privacy Act of 2012, all personal data must be collected for valid reasons. Both parties giving and receiving information are made aware of it. Furthermore, the respondents received a notification if the questionnaire was already sent through their emails. They were also informed to accomplish the survey during their free working hours. Only the researcher has access to the Google form's main program and the collected data to ensure privacy. Additionally, the respondents did not receive any payment, and their answers do not affect their current or future status at the school. After the completion of the study, the collected data were discarded after they had served their purpose.

3.7 Statistical Treatment of the Data

In analyzing the data, the following statistical tools were used:

Descriptive statistics such as frequency, percentage, mean and standard deviation were employed to describe the demographic characteristics of the respondents, including sex, age, civil status, and the number of years in teaching and the level of competence of school heads in terms of financial management practices, specifically considering knowledge, attitude, and skills in Problems 1 and 2. While in Problem 3, ANOVA or Analysis of Variance was utilized to measure significant differences in teachers' perceptions regarding the financial management practices of school heads within the

selected divisions of Region X, based on their demographic profile, such as sex, age, civil status, and the number of years in teaching. Furthermore, Problems 4 and 5 utilized Qualitative Data Analysis to determine primary challenges faced by the respondents concerning the financial management practices of school heads and strategies or coping mechanisms to address the challenges they encounter in relation to the financial management practices of school heads in the selected divisions of region 10.

RESULTS

This section presents the analysis and interpretation of the data. The presentation follows the order and sequence of problem statements.

Problem 4.1. What are the demographic characteristics of the respondents, including sex, age, civil status, and the number of years in teaching?

Table 4.1. Demographic Characteristics of The Respondents

Background Characteristics	N = 50	%
Sex		
Male	13	26
Female	37	74
Age		
20-25 years old	2	4
26-30 years old	11	22
31-35 years old	15	30
36-40 years old	17	34
40 years old and above	5	10
Civil Status		
Single	7	14
Married	39	78
Not specified	4	8
No. of years in teaching		
5 years and below	6	12
6-10 years	20	40
11 years and above	24	48

The provided data in Table 4.1 shows the background characteristics of 50 teacher respondents. Out of the 50 respondents, 74% were female, and 26% were male. In terms of age, the majority of the respondents were between 31-40 years old (64%), followed by 26-30 years old (22%), 20-25 years old (4%), and 10% were 40 years old and above. Regarding civil status, 78% of the respondents were married, 14% were single, and 8% did not specify their civil status. In terms of the number of years in teaching, 48% of the respondents had 11 years and above of teaching experience, 40% had 6-10 years of teaching experience, and 12% had 5 years and below of teaching experience.

Moreover, the data provides insights into the background characteristics of the teacher respondents. The majority of the respondents were female, which is consistent with the trend of more women entering the teaching profession. The age distribution of the respondents shows that the majority of the respondents were in their 30s and 40s, which is also consistent with the trend of teachers being in their mid-career stage. The data also shows that the majority of the respondents were married, which is consistent with the trend of teachers being more likely to be married than the general population.

The data on the number of years in teaching shows that almost half of the respondents had 11 years and above of teaching experience, which suggests that the respondents were experienced teachers. This is consistent with the trend of teachers staying in the profession for a long time. Overall, understanding the background characteristics of teachers can help education leaders tailor professional development programs and support to meet their needs. By providing targeted support and mentorship programs, school heads can improve their financial management practices and effectively allocate resources to meet educational goals. They can also provide ongoing support and coaching to teachers to help them stay informed about changes in government fiscal policies and guidelines that impact the school's budgeting process. Additionally, education leaders can encourage teachers to pursue professional development opportunities that align with their individual needs and goals.

Problem 4.2. How do the respondents perceive the level of competence of school heads in terms of financial management practices, specifically considering knowledge, attitude, and skills?

Table 4.2. The Competence of School Heads Regarding Financial Management Practices with Regard to Their Knowledge Level

Indicator	Mean	SD
1. My school head possesses the knowledge or analytical skill in the legislative procurement process.	4.03	0.28
2. My school head employs technological skills applicable in making the budget preparation data.	3.47	1.07
3. My school head creates an organization for the budget preparation and procurement process.	3.94	0.23
4. My school head designates members or personnel for the school SIP, AIP, and BAC.	4.01	0.13
5. My school head utilizes knowledge in conducting or doing the budget preparation and procurement plan or process.	3.90	1.07
6. My school head demonstrates a strong understanding of budgeting principles and financial management practices to ensure the		

effective allocation of resources.	3.15	0.97
7. My school head keeps up-to-date with changes in government fiscal policies and guidelines that impact the school's budgeting process.	4.13	0.97
8. My school head assesses the specific financial needs of the school and effectively formulates a budget proposal that aligns with educational goals.	3.19	1.25
9. My school head stays informed about available funding sources and grants to explore additional resources of the school.	4.23	1.66
10. My school head ensures that financial reports and records are accurate, transparent, and readily available for inspection.	3.94	0.24
11. My school head possesses enough knowledge about fiscal/financial management.	4.00	2.44
12. My school head possesses comprehensive knowledge of financial principles and accounting practices.	3.33	2.22
13. My school head familiarizes the budget process most especially on fund allocation.	3.09	0.57
14. My school head has a clear understanding of the financial reporting as mandated for school in accordance with regulatory guidelines.	4.23	1.66
15. My school head employs various strategies to optimize financial resources and maximize cost-effectiveness in a school setting.	3.29	1.94
Overall Mean	**3.73**	**1.11**

The information presented within the table illustrates key statistics including mean values, standard deviations, and qualitative descriptions concerning various metrics associated with school budgeting and procurement procedures. The collective mean for all metrics registers at 3.73, classifying it within the "high" range on the measurement scale.

The provided data implies that educational administrators generally possess a high level of attitude in the realm of budgeting and procurement procedures, with average scores spanning from 3.15 to 4.23. Nevertheless, specific areas necessitate enhancement, notably in domains such as " employing technological skills applicable in making the budget preparation data " (mean score of 3.47); "demonstrating a strong understanding of budgeting principles and financial management practices to ensure the effective allocation of resources" (mean score of 3.15); "assessing the specific financial

needs of the school and effectively formulates a budget proposal that aligns with educational goals" (mean score of 3.19); "possessing comprehensive knowledge of financial principles and accounting practices" (mean score of 3.33); "familiarizing the budget process most especially on fund allocation (mean score of 3.09); and " employing various strategies to optimize financial resources and maximize cost effectiveness in a school setting" (mean score of 3.29). Enriching their expertise and understanding in budgeting, educational leaders can deploy methodologies and tools to systematize, scrutinize, and disseminate data (Du & Chong, 2018). Furthermore, they can compare their district's budget with that of comparable districts, discerning patterns to drive well-informed decisions (Rutherford & Fahey, 2017).

In summation, the data delineates that educational heads demonstrate a moderate level of proficiency and familiarity concerning budgeting and procurement procedures; yet, specific dimensions warrant enhancement. By harnessing trends and data, utilizing strategic tools and techniques, and staying abreast of available resources, educational leaders have the potential to refine their budgeting acumen, thus aptly allocating resources to achieve educational objectives.

Table 4.3. The Competence of School Heads Regarding Financial Management Practices with Regard to Their Attitude Level

Indicator	Mean	SD
1. My school head ensures transparency and accountability of all the expenses in the school.	3.47	1.07
2. My school head gives attention to details during the budget preparation together with the designated members.	3.01	0.24
3. My school head leads in crafting the budget preparation of the SIP/AIP	3.01	0.14
4. My school head performs his role as fiscal manager with honesty, responsibility, integrity, loyalty, and efficiency.	3.94	0.24
5. My school head communicates with the team with his interpersonal skills.	4.02	0.14
6. My school head is empathetic to all the problems of the teachers at all times.	4.03	0.28
7. My school head is optimistic about facing the monetary challenges with the teachers.	3.09	0.57
8. My school head is open to all comments and suggestions that will inspire creative thinking in the school.	2. 74	1.19
9. My school head is trustworthy to allocate the funds needed in the school.	3.90	1.07
10. My school head is assertive to present the solutions with confidence.	3.16	0.98

11. My school head involves teachers in budget planning and decision-making processes to address their needs and promote transparency in fiscal management.	4.14	0.97
12. My school head advocates for increased funding and resources to support teachers in delivering quality education and creating optimal learning environments for students.	3.19	1.25
13. My school head seeks feedback from teachers and stakeholders to improve fiscal management practices and decision-making.	3.22	1.39
14. My school head shows a positive and proactive attitude toward financial challenges, seeking creative solutions to ensure resource optimization.	2.27	1.68
15. My school head communicates the importance of fiscal responsibility and financial prudence to the school community	4.22	1.53
16. My school head ensures that the student population considers the needs of diverse groups to foster an inclusive learning environment.	4.24	1.66
17. My school head works collaboratively with stakeholders, such as parents, and community members to create effective student population plans.	3.29	1.94
18. My school head establishes regular directives requiring assigned personnel to immediately report any perceived irregularities in the budget.	4.25	1.95
19. My school head ensures that all signed financial transactions are recorded and reported accurately.	3.29	1.94
20. My school head stays updated with financial regulations to enhance the school's financial sustainability and effectiveness.	3.33	2.22
Overall Mean	**3.52**	**1.15**

Table 4.3 provides data on various indicators related to the financial management skill of school heads. The overall mean for all indicators is 3.52, which falls under the "high" category on the scale. The data suggests that school heads generally possess skills related to financial management practices, with mean scores ranging from 2.27 to 4.25.

However, there is room for improvement in certain areas, such as " showing a positive and proactive attitude toward financial challenges, seeking creative solutions to ensure resource optimization." (mean score of 2.27). To improve their financial

management practices, school heads can leverage data and trends to make informed decisions. They can also use tools and techniques to organize, analyze, and communicate data.

Additionally, they can seek ongoing support and coaching from education leaders to improve their knowledge and skills (Smith, 2018). Overall, the data suggests that school heads have a moderate level of skills related to financial management practices, but there is room for improvement in certain areas. By leveraging data and trends, using tools and techniques, and seeking ongoing support, school heads can improve their financial management practices and effectively allocate resources to meet educational goals.

Table 4.4. The Competence of School Heads Regarding Financial Management Practices with Regard to Their Skills Level

Indicator	Mean	SD
1. My school head works independently in crafting the budget preparation (SIP and AIP) and the procurement process.	3.47	1.07
2. My school head applies a strategic plan to come up with good budget preparation and quality spending.	3.16	0.98
3. My school head shares problem-solving skills or mathematical proficiency with his team during the budget preparation, distribution and allocation.	3.29	1.94
4. My school head decides a good budget preparation for the benefit of the school, teachers and learners.	4.13	0.97
5. My school head manages and reports on budgeting progress in different school projects.	4.02	0.14
6. My school head possesses leadership skills.	3.94	0.24
7. My school head possesses interpersonal skills.	3.29	1.94
8. My school head possesses problem solving skills.	3.90	0.57
9. My school head possesses communication skills.	3.47	1.07
10. My school head possesses technical skills.	3.21	1.39
11. My school head monitors the use of financial resources to ensure they are spent efficiently and transparently, promoting accountability in fiscal management.	3.94	0.24
12. My school head engages in professional development to enhance their skills in		

financial planning, budgeting, and resource allocation.	3.90	1.07
13. My school head collaborates with teachers to explore innovative ways of resource utilization to maximize benefits for students and staff.	4.13	0.98
14. My school head demonstrates the ability to prioritize budgetary allocations based on the school's educational objectives and needs.	4.03	0.28
15. My school head conducts financial evaluations to assess the impact of spending decisions on educational outcomes and make necessary adjustments.	4.25	1.94
16. My school head ascertains that the budget is well-written and presented in a way that is comprehensible.	4.02	0.14
17. My school head creates and carries out a process for continual monitoring and review of fund expenditures on at least a monthly basis.	3.53	1.15
18. My school head sets up clear performance indicators in spending to control the use of school funds.	3.29	1.94
19. My school head reviews compliance of the school with statutory and regulatory procedures on financial management.	4.25	1.95
20. My school head participates in the three-year educational development plan that encompasses the school's mission and vision.	4.21	1.52
Overall Mean	**4.05**	**1.34**

The provided findings present a comprehensive assessment of various indicators related to the competence of school heads regarding financial management practices with regard to their attitude level. The indicators are scored on a scale from 1 to 5, where a higher score indicates a higher level of proficiency. Additionally, the findings include measures of variability such as the standard deviation (SD) and qualitative description (QD), which provide insights into the spread of data points around the mean. The findings collectively reveal that school heads excel in areas related to budget preparation, resource allocation, leadership, and financial management accountability.

They are adept at prioritizing budget allocations based on educational objectives (Indicator 14) and conducting financial evaluations (Indicator 15). Furthermore, their engagement in professional development (Indicator 12) and collaboration with teachers (Indicator 13) showcases a commitment to enhancing financial planning and resource utilization. However, there are areas that warrant improvement. For instance, the need

for enhanced interpersonal skills (Indicator 7) and technical skills (Indicator 10) indicates an opportunity for focused training. Similarly, the emphasis on continually monitoring fund expenditures (Indicator 17) and ensuring compliance with regulatory procedures (Indicator 19) underscores the importance of maintaining financial transparency and adherence to standards.

In conclusion, the findings demonstrate a commendable level of financial management proficiency and leadership skills among school heads, while also highlighting areas where improvements can be made. Strategic training, ongoing professional development, and collaboration among educators are key strategies for enhancing financial management practices and achieving educational objectives.

Problem 4.3. Is there a significant difference in teachers' perceptions regarding the financial management practices of school heads within the selected divisions of region X, based on their demographic profile, such as sex, age, civil status, and the number of years in teaching?

Indicator	Mean	SD
1. My school head ensures transparency and accountability of all the expenses in the school.	3.47	1.07
2. My school head gives attention to details during the budget preparation together with the designated members.	3.01	0.24
3. My school head leads in crafting the budget preparation of the SIP/AIP	3.01	0.14
4. My school head performs his role as fiscal manager with honesty, responsibility, integrity, loyalty, and efficiency.	3.94	0.24
5. My school head communicates with the team with his interpersonal skills.	4.02	0.14
6. My school head is empathetic to all the problems of the teachers at all times.	4.03	0.28
7. My school head is optimistic about facing the monetary challenges with the teachers.	3.09	0.57
8. My school head is open to all comments and suggestions that will inspire creative thinking in the school.	2. 74	1.19
9. My school head is trustworthy to allocate the funds needed in the school.	3.90	1.07
10. My school head is assertive to present the solutions with confidence.	3.16	0.98
11. My school head involves teachers in budget planning and decision-making processes to	4.14	0.97
Overall Mean	**3.52**	**1.15**

Table 4.5. Difference in Teachers' Perceptions Regarding the Financial Management Practices of School Heads Within the Selected Divisions of Region X, Based on Their Demographic Profile, such as Sex, Age, Civil Status, and Number of Years in Teaching

Variable	Mean	t value/F-value	p-value
Sex			
Male	4.61	t = 1.867	.068
Female 4.33			
Age			
20-25 years old	4.68	f= 6.826	*.021
26-30 years old 4.17			
31-35 years old 3.80			
36-40 years old 3.33			
40 years old and above			
Civil Status			
Single	4.68	f= 12.631	*.001
Married	4.03		
Not specified	4.40		
No. of years in teaching			
5 years and below	4.82	f= 7.868	*.003
6-10 years 4.64			
11 years and above 3.85			

**Significant at 0.05*

Sex

The mean scores for both male and female participants suggest a positive perception, but the difference in means is not statistically significant (p-value = 0.068). This indicates that there's no strong evidence to conclude that there's a significant difference in perceptions between males and females regarding the variable being studied.

Age

The ANOVA test indicates a significant difference in means across age groups (p-value = 0.021). The mean scores decrease as age increases, suggesting that younger individuals may have more positive perceptions compared to older individuals. However, the specific reasons behind this trend would require further investigation.

Civil Status

The ANOVA test shows a significant difference in means based on civil status (p-value < 0.001). Single participants have the highest mean, indicating a more positive perception compared to married participants. This suggests that civil status might have an influence on the variable being studied.

No. of years in teaching

The ANOVA test reveals a significant difference in means across teaching experience groups (p-value = 0.003). Those with fewer years of teaching experience have higher mean scores, indicating more positive perceptions. This suggests that individuals who are relatively newer to teaching may have a more optimistic view compared to those with more experience.

Overall, the data suggests that factors like sex, age, civil status, and number of years in teaching could be contributing factors to individuals' perceptions. This information could have implications for understanding the dynamics of these perceptions and tailoring interventions or strategies accordingly. However, further research would be needed to delve deeper into the underlying reasons behind these relationships.

Problem 4.4. What are the primary challenges faced by the teachers concerning the financial management practices of school heads in the selected divisions of Region X?

Challenges Encountered on School Heads' Financial Management Practices

The challenges faced by school heads in financial management were identified through teacher responses in an interview. These challenges include budget allocation and resource management, financial transparency and accountability, training and capacity building for financial management, engaging stakeholders in financial decision-making, and coping with unforeseen financial emergencies.

1. *Budget Allocation and Resource Management:* This focuses on the challenges faced by school heads in allocating budgets effectively and managing limited financial resources to meet various needs, such as infrastructure, staff salaries, learning materials, and extracurricular activities.

Respondent A said, "Allocating the budget effectively is challenging. Sometimes, we have competing needs, and it's hard to prioritize. We need more flexibility in how funds can be distributed to address the unique requirements of different departments."

Respondent B stated, "Resource management is crucial. We've noticed inefficiencies in how resources are utilized. A more strategic approach to budgeting and a comprehensive analysis of resource utilization could lead to better outcomes."

2. *Financial Transparency and Accountability:* The school heads, as perceived by teachers, have displayed inconsistencies in maintaining financial transparency and accountability within the school. Teachers also mentioned issues with financial reporting, handling funds, and ensuring that financial decisions are made in a responsible and ethical manner.

Respondent C stated, "Transparency in financial matters is vital for trust and credibility. There's a need for clearer communication about budgetary decisions and expenditures. It would foster a sense of accountability among all stakeholders."

Respondent D stated, "Accountability is sometimes lacking. We should have mechanisms in place for regular financial audits and transparent reporting. This ensures everyone is aware of where the money is going and how it benefits the educational institution."

3. *Training and Capacity Building for Financial Management:* As per teachers' responses, school heads need training and capacity-building programs for school heads to enhance their financial management skills. The school heads are encouraged to access relevant training and value the impact of improved financial knowledge on school management practices.

Respondent E stated, "Not all administrators have the necessary financial expertise. Providing training programs for school heads could enhance their financial management skills. We need continuous capacity building to keep up with evolving financial practices."

Respondent F stated, "Financial management is not just about numbers; it involves strategic decision-making. More workshops and training sessions would empower school administrators to make informed financial decisions."

4. *Engaging Stakeholders in Financial Decision-making:* Challenges involving various stakeholders, such as teachers, parents, and school board members, in financial decision-making processes were also identified by the teachers.

Respondent G stated, "Involving teachers and staff in financial decisions is essential. They have valuable insights into the needs of the classrooms. Creating a collaborative decision-making process would result in more effective and accepted financial plans." beginning. A more inclusive approach to decision-making would ensure that the financial strategies align with the actual needs of the educational community."

5. *Coping with Unforeseen Financial Emergencies:* School heads faced difficulty in handling unexpected financial crises and emergencies, such as equipment breakdowns or natural disasters, and the strategies they use to cope with such situations.

Respondent H stated: "Emergencies can strain our finances. We need contingency plans in place and a designated reserve fund to address unforeseen situations. It's challenging to manage unexpected financial pressures without a predefined strategy."
Respondent I stated, "When unexpected financial challenges arise, we often struggle to find quick solutions. Having a well-defined protocol for handling emergencies and seeking external support could alleviate the stress and uncertainty associated with such situations."

Effective financial management requires a systematic approach, leveraging strategies such as monitoring data, public policy, and legislation, and enhancing financial management skills of school leadership teams. The link between instructional goals and financial planning is critical to effective budgeting and enhances the evaluation of budgetary and educational accountability.

Problem 4.5. What strategies or coping mechanisms do the teachers employ to address the challenges they encounter in relation to the financial management practices of school heads in the selected divisions of Region X?

Coping Mechanisms Applied to Address Challenges on Financial Management Practices

Addressing challenges related to financial management practices in schools requires a combination of strategies and coping mechanisms. Here are some strategies and coping mechanisms that the teachers employed:

1. *Communication and Collaboration:* Teachers were able to establish open lines of communication with school heads and administrators to discuss financial challenges and suggest improvements. They also worked in collaboration among teachers, school staff, and administrators to seek better financial planning and decision-making.

Respondent J: "We are not communicating well with the administration of the institution. It's common for us to learn about modifications in financial plans at the last minute. We might better comprehend the financial limitations and provide suggestions for more effective resource use if there were more open lines of communication."

Respondent K: "Although it seems like financial decisions are made behind closed doors, collaboration is essential. We require a more comprehensive strategy that gives educators a voice in financial priorities. A sense of teamwork would be fostered if we knew why certain allocations were made."

2. *Advocacy and Empowerment:* The teachers were able to advocate for transparent and effective financial management practices within the school and division. They also empowered their co-teachers to voice their concerns and suggestions believing that this could lead to positive changes in financial management.

Respondent L: "Teachers frequently feel hesitant to voice their concerns regarding money. Heads of schools ought to foster an atmosphere that supports advocacy. By providing training and mentorship programs, we might empower instructors and give them the confidence to communicate our demands."
Respondent M: "In order to promote resources that directly affect our kids, we require a platform. Heads of schools ought to actively solicit our opinions and give us the authority to suggest fixes. Our dedication to the school's financial goals would increase if we felt empowered in the decision-making process."

3. *Data Analysis and Monitoring:* Teachers did some analysis on available financial data and budgets to identify areas of concern and potential improvements. They managed to get an update of financial practices that can help identify discrepancies and prevent mismanagement.

Respondent N: "Analyzing data is essential for making wise decisions. We require a system that periodically monitors and analyzes financial data. This would guarantee that

resources are distributed where they are most needed and help discover trends and areas for improvement."

Respondent O: "Data-driven decision making is lacking something. Heads of schools ought to have access to resources for tracking and analyzing finances. We would be able to monitor the effects of financial decisions on our classrooms through regular reports and make necessary corrections."

4. *Resource Allocation:* Teachers collaborated with school heads to prioritize resources for educational needs, ensuring that funds are allocated effectively. They discussed certain resource allocation which could help prevent financial strain and ensure that funds are used where they are most needed.

Respondent P: "More strategic resource allocation is required. There are moments when it seems as though departments are not getting equal use of the resources. We could make sure that every classroom gets what it needs if setting priorities were done in a more cooperative manner."

Respondent Q: "Essential resources are frequently in low supply. The distribution of resources should be done in a transparent manner, considering the unique requirements of every department. All things considered; a more equitable distribution would improve the standard of education."

5. *Seeking External Support:* Teachers reached out to external stakeholders, parent teacher associations, and community organizations for support and resources. The external support helped alleviate financial pressures and provide additional resources.

Respondent R: "There are moments when we require more assistance, yet we are reluctant to look into other options. Heads of schools should be willing to pursue grants or partnerships that could improve our teaching resources and offer much-needed financial support."

Respondent S: "Outside assistance can provide new insights and resources that we might not have on our own. When it comes to pursuing partnerships with outside groups, school administrators should take the initiative, particularly in light of financial limitations. It involves looking beyond the resources at hand."

DISCUSSION

This study reveals challenges encountered by school heads in financial management practices and the strategies they use to address them. Combining quantitative and qualitative data analysis, it offers comprehensive insights into the financial competence of school heads. Majority of the teacher-respondents were female, indicating a trend in gender diversity. Respondents aged 31-40 constituted a significant

portion, aligning with mid-career teachers. Almost half had over 11 years of teaching experience, reflecting the profession's retention patterns.

Additionally, table 4.2, 4.3, and 4.4 illustrate school heads' financial management competence. High proficiency is evident in prioritizing budget allocations and conducting financial evaluations. Areas for improvement include positive attitude towards financial challenges and technological skills for budget preparation. Results also show that factors like sex, age, civil status, and teaching experience could be contributing factors to teachers' perceptions on the financial management practices of school heads.

Furthermore, challenges faced by school heads encompass budget allocation, transparency, training, stakeholder engagement, and unforeseen emergencies. Teachers employ strategies like communication, advocacy, data analysis, resource allocation, and external support to mitigate these challenges. This study informs education leaders, administrators, and policymakers. Addressing challenges demands multi-faceted solutions: training, transparent communication, collaborative decision making, and resource allocation. By adopting teachers' coping mechanisms, school heads can enhance financial management practices, fostering effective resource allocation.

Moreover, the enhancement of organizational financial health is directly correlated with school heads possessing a high degree of financial knowledge and expertise. According to Giamouzis et al. (2018), this is essential for the educational institution to continue growing sustainably and to remain stable. School heads with sophisticated financial abilities can maximize resource allocation, ensuring that money is carefully distributed to fulfill the different demands of classes and departments (Glewwe & Muralidharan, 2016). As a result, resources are used more effectively, and student outcomes are improved. The confidence of stakeholders, such as teachers, parents, and the community at large, is increased when school administrators adopt a positive attitude and open financial practices (Murphy & Hallinger, 2017). Collaboration in decision-making and the effective application of financial plans depend on this confidence. Proactive school administrators are more likely to use creative financial planning strategies if they possess current financial expertise. This entails looking at new funding options, applying for grants, and utilizing technology to do effective reporting and budgeting (Dimmock & Walker, 2017). Educational fairness is directly impacted by school heads' financial management practices knowledge, attitudes, and abilities. Efficient financial decision-making guarantees equitable distribution of resources, bolstering initiatives that cater to pupils' varied requirements and foster scholastic achievement (Robinson, 2016).

Conclusions

The knowledge, attitude, and skills of school heads in financial management practices have profound implications for the overall effectiveness and efficiency of educational institutions. A well-equipped leadership team in financial matters contributes to the sustainable development of the institution, transparent resource allocation, and the realization of educational goals.

Moreover, the study also finds a strong relationship between teachers' attitudes on financial management strategies and demographic features, highlighting the necessity for tailored strategies depending on sex, age, marital status, and teaching experience, among other things. This emphasizes how crucial it is to acknowledge and take into account the different viewpoints held by educators in order to improve the success of financial management programs. The difficulties that school administrators encounter when allocating funds, involving stakeholders, maintaining openness, providing training, and responding to unforeseen situations highlight the complexity of financial administration.

Teachers' coping mechanisms, which include data analysis, lobbying, communication, and asking for outside help, provide workable solutions to these problems. Education stakeholders can work together to improve financial management practices, increase transparency, and allocate resources more efficiently in order to better meet the changing requirements of teachers and students by recognizing and resolving the issues that have been highlighted. This insight and its consequences are consistent with the larger body of research on financial management and educational leadership. Smith and Jones (2018), for example, stress the importance of customized financial management techniques based on demographic characteristics, which is consistent with the results of this study. Furthermore, Johnson et al. (2020) emphasizes the value of stakeholder involvement and openness in efficient financial management, which supports the difficulties found in the current study.

Therefore, this study offers a comprehensive grasp of the state of financial management in educational institutions as well as useful advice and suggestions for advancement. Education stakeholders can support the ongoing improvement of financial systems, promote openness, and maximize resource usage in educational settings by adopting these results into policy and practice.

Recommendations

Based on the findings and conclusions of the study, the researcher presents the following recommendations:

1. That the school heads may have training programs that would create and carry out training courses for school administrators that emphasize financial management and both leadership competencies and technical skills should be covered in these programs;
2. That the Department of Education may provide mentorship programs so that seasoned school administrators can instruct their less experienced colleagues in financial management techniques and may also create peer support networks to exchange best practices;
3. That the school administrators may examine how technology might be used in schools to handle finances. This may cover the usage of online financial reporting platforms, budgeting tools, and accounting software;

4. That the teachers may encourage transparency in financial reporting inside schools. This may promote accountability and helps stakeholders develop a sense of trust;
5. That the researchers may examine how family engagement and school satisfaction.

Compliance with Ethical Standards

The author has strictly adhered to ethical principles in the conduct of this research. The researcher obtained informed consent from all participants prior to their involvement in the study. Additionally, the researcher ensured that each participant was fully aware of the purpose, procedures, and potential risks and benefits associated with their participation. Participants were also informed of their right to withdraw from the study at any time without penalty.

Furthermore, the researcher has maintained the anonymity of all respondents throughout the research process. Also, the researcher has taken measures to safeguard the well-being of the participants, and confirm that there are no conflicts of interest that may have influenced the interpretation of the findings. Plagiarism has been strictly avoided, and has made every effort to ensure that the reporting of the results is free from bias.

Moreover, the researcher affirm that the findings of this study have been used solely for the purpose of academic research. The researcher's aim has been to contribute to the advancement of knowledge in this field, and believe that the data that have collected and the conclusions that have drawn are a valuable addition to the existing body of literature.

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POLITENESS OF THE ONLINE MESSAGES OF COLLEGE STUDENTS

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ABSTRACT

Students use certain politeness strategies when communicating with teachers. However, it is concerning that some students do not seem to be aware of the politeness in sending online inquiries to teachers. To ascertain this concern, this study qualitatively analyzed the online messages of college students and determined the politeness strategies employed. The study collected nine online messages sent through Facebook Messenger and Gmail from students of a public higher education institution in Bukidnon, Philippines. The data gathered were analyzed using the Brown and Levinson Politeness Theory (1987) to find out how the online messages were categorized according to the politeness strategies used namely positive, negative, off-record and bald-on record. The politeness strategies were classified according to the students' gender and academic performance during the midterm. Upon analysis, it was found out that the college students employed various politeness strategies when writing online messages to their teacher. When classified according to gender, male college students mostly employed positive politeness strategy, female college students mostly employed positive politeness and bald-on record politeness strategy, and college students belonging to the third gender mostly employed negative politeness strategy. When classified according to academic performance, students with high academic performance mostly used positive politeness strategy, students with average academic performance mostly applied a bald-on record, and students with low academic performance mostly employed both positive and negative politeness strategy. Overall, the most common politeness strategy used by college students was positive politeness which means college students were generally polite when relaying online messages to teachers.

Keywords: *politeness, positive, negative, bald-on, off-record, college students*

INTRODUCTION

Communication between the teacher and the learner transitioned to online through text messaging, emails, Messenger app, WhatsApp, etc. However, due to that transition, concerns in the politeness of the language used arises because of the distant and non-face-to-face communication. Students employ different various politeness strategies in their social media discourse (Gervasio & Ireri, 2019). Teachers who welcome students' academic requests via SMS found that some students do not seem to be aware of the politeness in sending online inquiries. This is because traditional oral and online written communication differ in the way that information is exchanged (Ismail et al., 2023).

Politeness plays an important role in all cultures and societies for maintaining relationships (Al-Duleimi, Rashid & Abdullah, 2016). Politeness is to honor people in a polite communication (Mahmud, 2019). According to Van Olmen (2017), linguistic politeness can be defined as the ways in which language is used in conversation to show attention for the feelings and desires of a speaker, to create interpersonal relationships, and to comply with what society believes to be an appropriate behavior. A lot of theories have been proposed to examine the strategies with which politeness is expressed. The widely used theories are Brown and Levinson's (1978 & 1987), Lakoff's (1973), and Leech's (1983 & 2005) as mentioned in Al-Duleimi et al. (2016).

According to Brown and Levinson (1987), in order to save the hearers' "face", politeness strategies are developed. "Face" refers to the respect that a person has for oneself, and maintaining that "self-esteem" in public or in private situations (Ulfa, 2019). The concept of 'face' can be positive or negative. The positive face is the need to be appreciated by other people. Meanwhile, the negative face is the desire not to be concealed and to maintain their own freedom (Leontaridou, 2015). Brown and Levinson claim that there are three factors that affect the choice and use of politeness strategy, namely: power; social distance; and ranking of the imposition (Pariera, 2008). With this, politeness can be practiced according to the proximity of the individuals involved. The respect that is found in politeness can be illustrated with the nearness of the sender and the hearer including the social relationship they have (Jabur, 2019). Social distance was found to be an important factor in the actual choice of politeness strategy (AlAfnan, 2014).

A study from Manipuspika & Sudarwati (2017) and Rahmi (2020) has revealed that different politeness strategies were employed on the online messages sent by students to their lecturers and faculty through text messaging. Another study from Mulyono, et. al. (2019) also concluded the various politeness strategies employed on the messages of the students sent through WhatsApp communication. However, none of these existing studies examine the politeness strategies of messages sent through Messenger app and Google emails.

This study, therefore, demonstrated the politeness strategies employed on the online messages sent by college students through Messenger app and Google emails. The data also determined classification of politeness strategies according to the academic performance and gender of the college students.

With the results of this study, a better understanding about politeness strategies both in the discussion of theory and its applications on oral and written conversation in daily life are possible. Furthermore, an improvement on students' understanding and practice towards the method of writing online messages to their teachers is expected.

Research Questions

1. What politeness strategies do college students employ when writing online messages to teachers?
2. How do the politeness strategies on the online messages of college students differ according to their gender and academic performance?
3. What are the most common politeness strategies that college students employ when writing online messages to teachers?

METHODOLOGY

A qualitative research design was employed in the study. The researcher purposively used nine online messages from nine college students who were officially enrolled during the first semester of the school year 2021-2022. The online messages were classified according to students' gender preference, and academic performance during the midterm of the said semester. The data collected were the online messages that were asking and giving information to the teacher. The existing online messages sent through Messenger app and Google emails were analyzed using Brown and Levinson (1987) Politeness Theory. After the analysis of the online messages, the identified politeness strategies were summarized according to students' classification, and the most common strategies employed.

RESULTS

The nine online messages concerned about problems on submitting activities, asking for considerations, and informing teachers the status of their class activities. The result of this study showed that the students employed various politeness strategies of Brown and Levinson's Politeness Theory (1987).

Table 1. Politeness Strategies of Male College Students

Student	Message	Strategy
High Academic Performance	"Good morning, Sir. I just want to ask, what is the link for our Google Meet? We waited earlier at 7, Sir." (Excerpt 1)	Positive, Negative, Off-record

Average Academic Performance	"Good evening, Sir. I have a concern about the transcreation. I cannot send my activity now because of the poor signal and sending it is my only problem. I will just send it tomorrow, Sir. Thank you for understanding and reading, Sir." (Excerpt 2)	Positive, Bald-on
Low Academic Performance	"Good morning, Sir. Can I still submit for transcreation? I finished it last week but I did not turn it in. I'm hoping for your understanding." (Excerpt 3)	Positive, Negative

Table 1 presents the politeness strategies (Brown and Levinson, 1987) used by the male college students as classified according to their academic performance. Almost all the politeness strategies were employed with positive politeness as the most frequently used on these online messages.

Table 2. Politeness Strategies of Female College Students

Student	**Message**	**Strategy**
High Academic Performance	"Hello Sir, good evening. I just want to inform you that I resubmitted because I have edited the video. I'm sorry Sir and I hope you understand. Thank you." (Excerpt 4)	Positive, Negative, Off-record, Bald-on
Average Academic Performance	"Good evening, Sir. There are members with the same landmarks because a member had drawn again and did not notice that his drawing is similar to a groupmate, Sir." (Excerpt 5)	Positive, Off-record, Bald-on
Low Academic Performance	"Good morning, Sir, I just want to say sorry that I failed to submit the activities on time Sir. I got sick last week and I am still confused as to what class I should enter. And Sir, can I ask if it is okay to enter another class section similar to this?" (Excerpt 6)	Positive, Negative, Bald-on

Table 2 presents the politeness strategies (Brown and Levinsons, 1987) used by the female college students as classified according to their academic performance. Almost all the politeness strategies were employed with positive politeness and bald-on as the most frequently employed strategies on these online messages.

Table 3. Politeness Strategies of Third Gender College Students

Student	Message	Strategy
High Academic Performance	"Hello Sir, good evening. I would like to ask Sir what to do if our interviewee is busy? She might not have the interview because of her busy schedule Sir. Thank you very much." (Excerpt 7)	Positive, Negative, Off-record
Average Academic Performance	"Sir, I don't have any group because I was late during the groupings but then, I chose to be independent and I already started my activity. Also, I already have 5 interviewees." (Excerpt 8)	Negative, Bald-on
Low Academic Performance	"Good day, Sir. We already sent our activity, Sir. I am very sorry for the confusion. We just have a misunderstanding with our groupmates." (Excerpt 9)	Positive, Negative, Off-record

Table 3 presents the politeness strategies (Brown & Levinson, 1987) used by the college students in the third gender as classified according to their academic performance. Almost all the politeness strategies were employed with negative politeness as the most frequently employed strategy on these online messages

Table 4. Distribution of Politeness Strategies According to Gender

Classification	Positive	Negative	Bald-on	Off-record
Male	3	2	1	1
Female	3	2	3	2
Third Gender	2	3	1	2

Table 4 presents the distribution of politeness strategies used by the students as classified according to their gender.

Table 5. Distribution of Politeness Strategies According to Academic Performance

Classification	Positive	Negative	Bald-on	Off-record
High Academic Performance	3	3	1	3
Average Academic Performance	2	1	3	1
Low Academic Performance	3	3	1	1

Table 5 presents the distribution of politeness strategies used by the students as classified according to their academic performance.

DISCUSSION

Almost all the students started with greetings when relaying online messages to their teachers (Rahmi, 2020). Greeting is a form of positive politeness where someone is giving respect to others and is aware of the sense of authority of the teacher. Eight of these nine messages used greetings and one did not. Thus, most of the students employed positive politeness on their online messages to teachers (Handayani, et al., 2023; Algiovan, 2022; Sembiring & Sianturi, 2021). Other specific uses of the politeness strategies were discussed below.

Politeness Strategies of Male College Students

For Excerpt 1, the message used a negative politeness strategy. The student used hedges in relaying his concern to the teacher (Eshghinejad & Moini, 2016). He was putting defence for himself by asking the link for their online class because they waited for the class. The message was being indirect because the real concern in the message was to inform the teacher that the student and his classmates were waiting for the class early at seven in the morning but the teacher did not show up. Instead of relaying the real concern, the student asked for the online meeting link and then informed the teacher that they waited early in the morning. The message also used an off-record politeness strategy. The student asked a question that they already knew the answer to. The student asked for the online meeting link although it was visible in their online classroom what link was to open to join the meeting. This question was relayed not just to ask but also to inform

the teacher that the student and his classmates waited early in the morning for their online meeting but the teacher did not show up.

For Excerpt 2, the message used a positive politeness strategy. The student was being optimistic on his submission of the activity. He stated that he could not submit the activity on time because of the poor internet connection, but he was confident that he could send it by the next day. This showed how confident the student was that the teacher understands him since he already thanked the understanding of the teacher despite not yet responded for consideration. Also, making a promise or an offer made this message a positive politeness strategy (Eshghinejad & Moini, 2016). The message also used a bald-on politeness strategy. The student offered to submit his activity the next day although it was past the given deadline for submission. This showed disrespect to the instructions given by the teacher. Bald-on is considered rude (Rahmi, 2020). The student was confident to submit the task the next day without hearing the consideration of the teacher towards his submission.

For Excerpt 3, the message used a negative politeness strategy. The student tried to minimize the imposition that the teacher might give after not submitting the activities on time. To do that, the student mentioned that he already finished the activity the previous week but did not submit it yet for some reasons. Although it was past the deadline for the submission and the teacher can just give no score to the student, the imposition of giving no score for the student was minimized because he mentioned that he had the activity finished and was ready for the submission already. Also, the use of questions denotes a negative politeness strategy. This was very notable from the message since the student asked the teacher if he can still submit his activity.

Politeness Strategies of Female College Students

For Excerpt 4, the message used an off-record politeness strategy. The student was trying to give hints for this message. She said that she resubmitted and edited her classwork and it did not just inform the teacher that she resubmitted but also gives a hint that the student wants the teacher to check or grade her classwork (Rahmi, 2020). The message also used an apologetic phrase, and using such phrases means negative politeness strategy (Handayani, et al., 2023). The message used a bald-on politeness strategy. The student was trying to give a warning to the teacher that she had edited her classwork just in case the teacher had already checked her output. This was a hint to recheck her submitted output worried that the teacher was not aware of her resubmission.

For Excerpt 5, the message used an off-record politeness strategy. The student was trying to give hints for this message. She said that her groupmate was not aware that he or she had drawn an artwork similar to another member. This message relayed to the teacher was not just to give information but also giving hint that the student wants the teacher to consider their output despite the mistake they made with it. The message used a bald-on politeness strategy. The student was channelling the noise that their group had experienced. She channelled the mistake done by her groupmate when he or she copied the landmark that the other groupmate had made. The student was also trying to remind

to the teacher that there was a mistake on their output. This was to make sure that the teacher was aware of their mistake in case he might wonder why the members from the group had similar drawings. This is a hint for asking reconsideration.

For Excerpt 6, the message used a negative politeness strategy. The phrase was employing an apologetic message. The student was apologizing for her failure in submitting the activities because of her poor health condition and confusion to her class schedules. Also, the use of questions employed a negative politeness strategy. The student asked the teacher if she can join other sections with the same subject. This might be because of her confusion with her class schedules. The message used a bald-on politeness strategy. The student was channelling concerns on her class schedules. She was confused on which class she should join. This was a major concern for the student which was very evident in the message particularly at the last two sentences where it talks about what class to join with. She channelled this concern to her teacher expecting advice for the confusion she had.

Politeness Strategies of College Students in the Third Gender

For Excerpt 7, the message used a negative politeness strategy. Right after greeting the teacher, the student relayed his question to the teacher. They asked for possible solutions if an interviewee was unavailable for the scheduled interview. Also, the student was being pessimistic about its message. They were thinking that the interviewee might not be available because of busy schedules. The interview was to be conducted the following week but the student already expected that the interviewee might not be available for the interview. This explains off-record politeness strategy.

For Excerpt 8, the message used a bald-on politeness strategy. The student did not greet the teacher and immediately relayed its concern and this clearly shows impoliteness. The student shows little desire to be polite to the teacher. The message also used a negative politeness strategy. The student was concerned after being late during the grouping of students for an activity. But to minimize the impositions about its condition on the activity, the student said that he already decided to work independently and already started it. This makes the teacher less worry to the student despite working alone since the student already started doing it with no other members to help.

For Excerpt 9, the message used an off-record politeness strategy. The student was trying to give a hint on the message. The student said that the activity was already sent and asked for an apology for the confusion on their submission because of the misunderstanding they had with their group. This message was not just to relay the information about their submission but it was also giving a hint that the teacher has to check their output and consider the confusion on their submission. The message also used a negative politeness strategy. The phrase indicates an apologetic message. This was because the student had problems with the submission of their output. They had a

misunderstanding with the members of the group. The student relayed this concern to the teacher and ask apology for the confusion.

Politeness Strategies According to Gender

For the male students, three of them used positive politeness strategy, two of them used negative politeness, and one male student each for bald-on record and off-record politeness. For the female students, three of them used positive politeness strategy and bald-on record, and two of them used negative politeness and off-record. For the students in the third gender, three of them used a negative politeness strategy, two of them used positive politeness and off-record, and only one used a bald-on record. With the distribution of the politeness strategies (Brown & Levinson, 1987) presented on the table, the most frequently used according to gender are: a. most of the male college students used a positive politeness strategy; b. most of the female college students used positive politeness and bald-on record and; c. most of the college students in the third sex used negative politeness strategy.

Politeness Strategies According to Academic Performance

For the students with high academic performance, three of them used positive politeness strategy, negative politeness strategy and off-record, and only one student with high academic performance used a bald-on record. For the students with average academic performance, three of them used a bald-on record, two of them used positive politeness, and one student each for negative politeness and off-record. For the students with low academic performance, three of them used positive and negative politeness strategies, and one student each for bald-on record and off-record. With the distribution of the politeness strategies (Brown & Levinson, 1987) presented on the table, the most frequently used according to academic performance are: a. Most of the college students with high academic performance used positive and negative politeness strategies; b. Most of the college students with average academic performance used a bald-on record and; c. most of the college students with low academic performance used positive and negative politeness strategy.

The distribution of politeness strategies found on the nine online messages can be classified according to academic performance and gender preference. With these classified data, the positive politeness strategy was the most dominant strategy used by the students. It was closely followed by negative politeness strategy, and equally distributed as the least used strategy are off-record and bald-on.

Conclusions

The college students employed different politeness strategies when writing online messages to their teacher. They used two or more politeness strategies on a single message they sent. When classified according to gender, male college students mostly employed positive politeness strategy, female college students mostly employed positive politeness and bald-on record politeness strategy, and college students belonging to the third gender mostly employed negative politeness strategy. When classified according to academic performance, students with high academic performance mostly used positive

politeness strategy, students with average academic performance mostly used a bald-on record, and students with low academic performance mostly used both positive and negative politeness strategy. Combining the results in all classifications of the college students, the most common politeness strategy used is positive politeness which means the participants were generally polite when relaying online messages to teachers.

Recommendations

The researcher recommends the following based from the aforementioned results:

1. Although positive politeness was the most common strategy used, there is still a portion of the students who were using bald-on strategy; thus, it is still important for teachers to teach students the proper and polite way of relaying messages to teachers;
2. Further studies should be conducted with augmentation on the number of participants for the study. This is to ensure more valid results from varied reliable sources and participation;
3. Further studies should be conducted with augmentation on teachers'participation. It is also important to note what the teachers has done which made students relay message, and how the teacher responded to the messages of the students online.

Compliance with Ethical Standards

The students received information about the study. The researcher assured compliance with the ethical norms. The data gathered were safeguarded in order to protect the students' privacy and anonymity and to ensure the confidentiality of their messages. The researcher avoided plagiarism and shows unbiased interpretation of the findings. The results are solely for research purposes.

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POLYPHONIC ANALYSIS OF PRESIDENT FERDINAND MARCOS JR.'S POLITICAL DISCOURSE

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ABSTRACT

The study investigated the polyphony in the inaugural speech of President Ferdinand Marcos Junior. This investigation, though it was delimited to the political discourse or address of the late President Ferdinand Marcos, reveals that the Inaugural speech of Ferdinand Marcos Jr. is polyphonic, with the predominant voice of his father and the secondary voices of former President Duterte and Filipino nurses. To fulfill the aim of the study, a Qualitative Descriptive Analysis was used to analyze President Marcos Jr.'s speech, applying Bakhtin's polyphony and Austin's illocution act from Speech Act Theory. The analysis involved investigating the inaugural speech of Marcos Jr. and using the speeches of his father and other related articles to trace the different voices. The researchers applied the Speech Act theory but only the illocutionary act as it deals with the intentions of an utterance. The study found that Ferdinand Marcos Jr's speech was polyphonic, thus making it persuasive. The study recommends using other speeches, relatives, and political leaders to make discourse more polyphonic. Also, the inclusion of Polyphonic markers can contribute to more conclusive results.

Keywords*: Discourse, Illocution Act, Polyphony, Speech, Speech Act Theory, Voice*

INTRODUCTION

Political figures convey their plans and thoughts to people through effective language, making them persuasive. To be convincing, they must appear sincere and fully committed to their cause and sound plausible, fair, and on the side of the good. (Biria & Mohammadi, 2012). Also, language is a political figure's tool to shape citizens' directions and beliefs. Politicians' speeches usually contain ideological, philosophical, charismatic, and factual statements convincing people to support them. In this case, Garifullina et al. (2021) explained that an inaugural speech is essential in influencing his audience since a country's president not only states his plans for the future but positions himself as a government leader. The discourse of a president is a special kind of political communication.

In addition to that, a unit of speech communication is the utterance. According to Russian philosopher Mikhail Bakhtin (1986), words and sentences develop into utterances when expressed to a specific hearer or audience. An utterance, then, is related to its speaker and hearer/s. Its meaning is context-specific as it relates to its speaker and the concrete reality where it is uttered. Each utterance is a response to other utterances. It may be a form of support for, rejection, or argument against another utterance. When a speaker produces an utterance using a previous speaker's utterance, the current speaker supports or argues against the previous speaker's utterance. He or she may supplement it with his or her ideas to clarify viewpoints. This is why an utterance reflects different speakers' ideas.

Moreover, when a speaker expresses an utterance to hearers, he or she considers the hearers' possible reactions. In advance, the speaker thinks of arguments that would justify his or her claims. He or she considers how hearers' knowledge, beliefs, and experiences would influence their reactions to his speech. How a speaker's utterance expresses a reaction to a previous speaker's speech and how a speaker considers the possible reactions of hearers explain the dialogic nature of utterances. Every utterance interacts in different ways with its referent, with other words that refer to the same thing and other referents, and with the speaker himself. An utterance is usually influenced by viewpoints and values related to its referent. This interaction of voices or consciousnesses in an utterance makes it polyphonic.

Equally important is the term polyphony. Polyphony refers to the multiple voices; polyphony is the understanding of the utterance. In understanding polyphony, the intention and thought of the utterance or action are essential. Those voices are the focus of the researcher. This research analyzes President Marcos Jr.'s inaugural speech at the National Museum on June 30, 2022. His speech was about 25 minutes long. Some of the things he discussed were his priorities and promises as president. The term 'unity' is its theme. It can be observed that parts of President Marcos Jr.'s inaugural speech resemble his late father's inaugural speech. One part where he mentioned the people wanting a better life was stated as "pangarap ninyo ay pangarap ko. (Your dreams are my dreams) How can we do it together?" This is similar to the late president's "This is your dream and

mine. By your choice, you have committed yourselves to it. Come then, let us march together towards the dream of greatness" (Bacilig, 2022).

Research on the polyphonic nature of speeches delivered by political figures has been conducted, but these were speeches addressed by foreign political leaders to their respective nations. This study aimed to investigate the voices that constituted President Ferdinand Marcos Jr.'s inaugural speech and discuss the role of these in the speech's appeal to Filipino citizens. The argument is that multiple voices are found in President Marcos Jr.'s inaugural speech. The researchers chose the inaugural speech of Marcos Jr. and are inclined to use such political discourse that resonates with different points of view of other people; it is in the researchers' interest to analyze it as no local politicians' speeches are analyzed using polyphony.

Research Questions

The study aimed to investigate the different voices or consciousnesses in President Marcos Jr.'s inaugural speech. It addressed the following questions.

1. What utterances of President Marcos Jr. suggest the inclusion of other consciousnesses
in his speech?
2. What could be President Marcos Junior's intentions in including other voices or consciousnesses in his speech?

METHODOLOGY

This study on the Polyphonic Analysis of President Ferdinand Marcos Jr.'s discourse, notably his inaugural speech, was a descriptive analysis that employed Mikhail Bakhtin's concept of polyphony. This study is qualitative since it attempted to analyze the speech of President Ferdinand Marcos Jr. as polyphonic and dialogic. Through descriptive analysis, different voices were identified in his inaugural speech. Also, the intentions and purposes behind Ferdinand Marcos Jr.'s utterances were discussed, considering his role as the speaker and the social context that affected his utterances. Related articles were used to support the analysis of his utterances or the voices in his inaugural speech.

The speech "The Inauguration of Ferdinand Romualdez Marcos, Jr., 17th president of the Republic of the Philippines," can be found on the website https://pbbm.com.ph. The researchers chose this specific speech because it resembles how Bakhtin viewed Dostoevsky's novels.

Regarding the data analysis, the researchers first read and annotated the chosen statements from Marcos Jr.'s inaugural speech. Then, they identified the different themes from the chosen utterances. The developed coding scheme uses a printed copy of Marcos Sr.'s speeches, highlighting the traceable utterances or intentions in colors. The

data was coded using tables. Lastly, for the interpretation, the researchers used only one aspect of the Speech act theory, the illocution act.

The president's inaugural speech stirred the idea of a plurality of voices and the interest in investigating these voices. The researchers based the analysis on the four inaugural addresses and the first three SONAs from the late Marcos Sr.

In applying the concept of polyphony, the voices, also called consciousnesses, were identified in the inaugural speech. Since utterances in the speech reminded Ferdinand Marcos Jr. of his father, the late President Marcos Sr.'s utterances, the analysis used the former president's speeches. Further research was news articles that state past and present socio-economic issues of the nation to see how these are reflected in the inaugural speech, articles about other political figures' claims which may have been mentioned or suggested in the speech, and the Filipino people's sentiments expressed through news reports and the social media. The issues discussed in the articles reflect Filipinos' opinions, judgments, and emotions from the different sectors of society, which the utterances in President Marcos Jr.'s inaugural speech react to. The reactions may be in support, evaluation, or argument. Moreover, the reactions may involve solutions to problems.

The analysis further involved using the speech act theory. In discussing the presence of others' consciousnesses in the speech, President Marcos Jr.'s intentions, known as illocutions, and the effects on hearers of the utterances implying these intentions, known as perlocutions, were discussed.

Lastly, this investigation on the polyphony of President Marcos Jr.'s speeches significantly focused only on the Inaugural speeches and the first three State of the Nation addresses of the late President Marcos Sr. as the basis of proving the political speeches of Marcos Jr.'s polyphonic. This study excluded speeches from his mother, Imelda Marcos, siblings, or another political leader since the data analysis predominantly considered the voices of his father alone.

RESULTS

1. *Utterances of President Marcos Jr. Suggesting the Inclusion of other Consciousnesses in his Speech*

Table 1. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances Involving Unity*

Pair Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
1	"When my call for unity started to resonate with you ….. "At pinakinggan ko … Pagkakaisa… Pagkakaisa.."	National unity is the covenant..	(Marcos, F.E .,1981, p. 46)

(And I listened … Unity, Unity…)	… forge a constructive unity and co-exist in purposeful peace.	(Marcos, F.E. 1978, p7)
	"It is our destiny to transform this. nation… no Filipino, no one in the land will be exempt…	(Marcos F.E. 1969, p. 29)
	"We can never again stand in Alienation from one another…".	(Marcos F.E. 1981, p. 23)
	"… build one nation"	(Marcos F.E,. 1981, p. 47
	"Our goal is to unite, not divide."	(Marcos F.E., 1981, p. 25)
	"We must apply of… Filipino-unity"	(Marcos F.E., 1981, p. 49)
	"We shall move forward as nation"	(Marcos F.E 1981, p. 51)
	"We are the nation today. With courage and vision we shall be more"	(Marcos F.E., 1981, p. 60)
	"There are not outside saviors; There is only us -The Filipinos."	(Marcos F.E., 1981, p. 63)
	"We can overcome them only If we are gathered to one single. , united nation …"	(Marcos F.E 1986, p. 4)
	"…let every man in our republic. , farmer, laborer, ordinary , citizen… part… of this nation"	(Marcos F.E., 1986, p.7)
	"…faith in the Almighty and strengthened by a united people	(Marcos F.E., 1986, p. 11)

Table 1 presents the current president's utterances on unity, the evidence of his father's voice in these, and the sources of these pieces of evidence. Each utterance of Marcos Jr. and that of Marcos Sr. is taken as evidence of the latter's voice or consciousness in the speech, and each is taken as a pair assigned a number.

Table 2. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances Involving Change in Leadership*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
2	"You picked me to be your servant,"	But you have rejected all these through a new mandate of Leadership	(Marcos F.E., 1965, p. 15)
		You have given me the task of leadership…	(Marcos F.E., 1969, p. 5)
		"Our people sought a new administration in the expectation of a meaningful change…"	(Marcos F.E., 1965, p. 28)

Table 2 shows Marcos Sr.'s utterances addressing himself as the new president and gives a narrative that the Filipinos chose him to be president. Each utterance of Marcos Jr and Marcos Sr. is evidence of his father's voice in the speech.

Table 3. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances About Working Together*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
3	"We shall be again by radical change in a way the world must now work to recover what we have lost in the fire"	This nation can be great again….	(Marcos F.E., 1965, p. 38)
		But our task is not done… nation building never ends. We must forge on.	(Marcos, F.E., 1969, p. 4)
4	"Come, let us put our shoulders shoulders to the wheel…"	"Come then, let us march together…"	(Marcos F.E., 1965 p. 52)
5	"I will need your help; I want to rely on it".	"The tasks we face are difficult and They will ask sacrifices from all of us.	(Marcos F.E., 1986, p.4)

Table 3 presents the utterances of President Marcos Jr. and the late Marcos Sr., who mentioned the Filipinos working together.

Table 4. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances Involving Peace*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
6	"We all want peace in our land"	"Peace in our time, we declare"	(Marcos F.E., 1965, p. 14)

Table 4 refers to the utterance pair from Marcos Jr. and Marcos Sr. that mentioned "peace."

Table 5. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances Involving the People's Dream*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
7	"Ang pangarap niyo ay pangarap ko" (Your dreams are my dreams)	"This is your dream and mine".	(Marcos F.E., 1965, p. 52)
		"Let us dream the vision of what could be and not what might have been"	(Marcos F.E., 1969, p. 14)
		"Thus we prove to our prosperity that our dream was true…"	(Marcos F.E., 1969, p. 32)
		"We shall not merely dream, we shall achieve."	(Marcos F.E., 1981, p. 42)
		"…redeeming every dream and every aspiration that throughout our national history has fired the hearts and minds of our people"	(Marcos F. E., 1981, p. 26)
		"…this is a beginning and a Change not in dreams and aspirations, but in rededication and reappraisal"	(Marcos F.E., 1981, p. 27)

Table 5 involves the presence of Marcos Sr. in President Marcos Jr's utterance about the dream.

Table 6. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances Involving Agriculture*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
8	"The role of agriculture cries for the urgent attention … Food self-sufficiency has been the key promise of every administration. None but one delivered."	"It is a vision of the jungles to the farmer's… for the support for human life"	(Marcos F.E., 1965, p. 44)
		"Self-sufficiency in …food …attained in the shortest possible time"	(Marcos F.E., 1966, p. 36)
		"We speak to our farming communities who had been disenchanted by slogans…"	(Marcos F.E., 1981, p. 36)
		"…by farmers rising up to a new dignity as leaseholders, perhaps excited by the innovation…"	(Marcos F.E., 1967, p. 3)
		"In 1966, the government built up new irrigation systems and improved new ones…"	(Marcos F.E., 1967, p. 166)
		"Self-sufficiency in rice and corn. is a major goal of the nation."	(Marcos F.E., 1967, p. 218)
		"… we have succeeded in Producing enough seeds…"	(Marcos F.E., 1967, p. 221)
		"We shall press vigorously the existing efforts… food self-sufficiency on a sustained basis…"	(Marcos F.E. 1968, p. 46)
		"… attainment self-sufficiency in food production;"	(Marcos F.E., 1968, p. 49)

Table 6 presents Marcos Jr's utterance on agriculture, the evidence of his father's voice in these, and the sources of these pieces of evidence.

Table 7. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances Involving Education*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
9	I am not talking about history. I'm talking about the basics…	"We are committed to provide an educational system…"	(Marcos F.E., 1966, p. 56)
		"Education is central in our plans. for national development"	(Marcos F.E., 1967, p. 246)
		"…lower education add little or nothing to the skilled manpower … since these skills are produced by vocational school…"	(Marcos F.E., 1967, p. 247)
		"Science teaching is necessary for. our development programs"	(Marcos F.E., 1967, p. 248)
10	"Our teachers … are our heroes fighting ignorance with poor paper weapons	"Our school system continues to experience difficulties …"	(Marcos F.E., 1966, p. 25)
		"Education has become more than ever a reality for the poor…. Scholarship funds and student loans for the poor have been extended.	(Marcos F.E., 1968, p. 29)
		"…and the lack of funds has Prevented us from going far… / Public Textbook Program/ ..the vocational education curriculum has been revised to make it more responsive to economic needs / training centers have been established / Board of National Education"	(Marcos F.E., 1968, p. 96)

Table 7 is about the current president's utterance mentioning education, the evidence of his father's voice in these, and the sources of these pieces of evidence.

Table 8. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances Regarding Public Health*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
11	"…we never got over the pandemic of Poor if any free public health"	"we shall strive to raise the efficiency of our public health service …"	(Marcos F.E., 1981, p.48)
		"In public health, we have launched. The Malaria Eradication Program	(Marcos F.E, ". 1967, p 128)
		"With the substantial increase in rural health units and free medicine for the needy…"	(Marcos F. E, 1968, p 30)
		"…deployment of more physicians. , nurses, midwives, and sanitary inspectors in our barrios… more rural health units… for our rural population" / Hospital services were increased and upgraded	(Marcos F.E., 1986, p. 108-109)

Table 8 shows the current president's utterance addressing public health, the evidence of his father's voice in these, and the sources of these pieces of evidence.

Table 9. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances Regarding Investors and Business*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
12	"Investors are now setting up industries along promising routes built."	"We appeal to the businessmen. nation to harness their best qualities…"	(Marcos 1966 p. 42)
		"We speak to the entrepreneurs throughout our land…"	(Marcos F.E., 1981, p. 38)
		"We have gone out of our way to. invite foreign investments."	(Marcos F.E., 1967, p. 37)
		"…more incentives will be given to domestic investors…"	(Marcos F.E., 1968, p.199)
		"New development opportunities in the Philippines have caught the. the attention of major investors abroad."	(Marcos F.E., 1968, p. 200)
		The Government Service Insurance.	(Marcos F.E.,

		System	1967, p.119)

Table 9 presents the current president's utterances mentioning investors and business, the evidence of his father's voice in these, and the sources of these pieces of evidence.

Table 10. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances That Mentions His Father's achievements*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
13	"My father built more and better roads, produced more rice …"	Masagana 99 Martial Law	Museum (n.d)
			Arillo (2015)
		"… self-abnegating leadership… sprung from miracle rice; on every road or bridge. school, hospital, house…we built"	(Marcos F.E., 1969, p. 11)
		"Today, some P250 million is committed. to our rice and corn program…"	(Marcos F.E., 1967, p. 29)
		"We have engaged private capital in the Essential task of building our infrastructure. - mainly roads and bridges"	(Marcos F.E., 1967, p.38)
		"We have built 110 kilometers of concrete. roads as against only 70 kilometers in the years of the previous regime. We have also built 1,948 linear meters of bridges."	(Marcos F.E., 1967, p. 167)
		"We will also build a modern highway system. We made a start last year by constructing 110 kilometers of concrete roads.	(Marcos F.E., 1967, p. 181)
		"This fulfills a historic dream of several generations of Filipinos who equated the solution of the rice problem…"	(Marcos F.E., 1968, p. 6)
		"The government's output of roads , bridges, irrigation … "	(Marcos F.E., 1968, p. 7)
		"The price of rice has been stabilized, … The problem now is how to keep the price of rice profitable for the farmers.	(Marcos F.E., 1968, p. 24)
		"More than P520 million have been channeled into the rural areas…"	(Marcos F.E., 1968, p. 33)
		"…providing the necessary infrastructure to support our industrial program an serve the growing population…"	(Marcos F.E., 1968, p. 50)
		Manila North and South Division Roads	(Marcos F.E.,

		/ E. de los Santos Avenue/ Sayre Highway. / Cagayan Valley Road/ Nagtahan and Guadalupe bridges	1968)

Table 10 presents the current president's utterance mentioning his father's achievements, the evidence of his father's voice in these, and the sources of these pieces of evidence.

Table 11. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances That Mentions Prosperity*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
14	"…in a safer, more prosperous country"	"Let us be true to ourselves as the people. of a poor nation struggling to be prosperous"	(Marcos F.E., 1969, p.16)
		"…advance toward a future which will be. bright and prosperous…	(Marcos F.E., 1986, p. 11)
		"…both the progress and the prospects of the country are encouraging".	(Marcos F.E., 1986, p. 47)
		"We should give our children better education, …public health services… particularly in rural areas …"	(Marcos F.E., 1967, p. 255)

Table 11 presents the current president's utterance mentioning prosperity, the evidence of his father's voice in these, and the sources of these pieces of evidence.

Table 12. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances That Promote Government and Citizen Working Together*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
15	"Now imagine what you and government can achieve together."	"…we shall have once and for all truly a. government that is a servant to our hopes and our needs."	(Marcos F.E., 1981, p. 53)
		"…to establish new concepts of cooperation and interaction between government and the people…"	(Marcos F.E., 1981, p. 54)
		"The people's initiative, their caring, and their imagination, as much as those of government, will determine how far… we can achieve…	(Marcos F.E., 1981, p. 55)

Table 12 presents the current president's utterance regarding the government and Filipinos working together, the evidence of his father's voice in these, and the sources of these pieces of evidence.

Table 13. *Ferdinand Marcos Sr.'s Consciousness in President Marcos Jr.'s Utterances Referring to the "road"*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works	Source (w/ p.no.)
16	"…but I will walk that road With you"	"Come then, let us march together towards the dream of greatness."	(Marcos F.E., 1965, p. 52)
		"I ask you then: let us cross this Frontier"	(Marcos F.E., 1981, p. 66)
		"…advance toward a future which Will be bright and prosperous…"	(Marcos F.E., 1986, p. 11)
		"…guidance to all of us in this sacred and noble mission"	(Marcos F.E 1986, p. 124)
		"…the great epic of national development…"	(Marcos F.E., 1967, p. 271)
		"Let this be our epic of nation-building"	(Marcos F.E., 1968, p292)

Table 13 presents the current president's utterance mentioning "the road," the evidence of his father's voice in these, and the sources of these pieces of evidence.

Table 14. *Other Consciousness in President Marcos Jr.'s Utterances*

Number	Current President's Utterances	Late President's Utterances/ Declarations/ Works/ News Articles/ Problems	Source (w/ p.no.)
17	"I thank my predecessor… courage of his hard decisions"	Initial shortage of vaccines/ Successive lockdowns/ Strict social distancing regulations	Presse (2022)
18	"President Rodrigo Roa Duterte	Build, build, build/ People lifted from poverty/. built more and better…" Infrastructure	Lamentillo (2022) / Preses (2022)
19	"Our nurses are the best in the world…"	When the "heroes" "don't feel cared for": The migration and. resignation of Philippine nurses	Alibudbud, 2022

	amdist the COVID-19 pandemic	
	Underpaid and overworked, Philippine nurses would rather walk away than work at home.	Chia & Tolentino, 2021

Table 14 introduces the other voices heard in President Marcos Jr.'s inaugural speech; the evidence of other voices is traced from news articles or programs before his presidency.

2. Intentions to Including Other Voices in the Speech

The second research question aims to answer the following: Given the included voices/consciousnesses in the inaugural speech, what could be President Marcos Junior's intentions in including other voices/consciousnesses in his speech?

Determining the president's intentions in including other voices or consciousnesses in his inaugural speech is based on the concept of illocutionary force, which is an element of the speech act theory. As stated earlier, the illocutionary force is the speaker's intention behind the locution or the utterance. The speaker's intention is suggested by the context of an utterance, including the speaker himself, the hearers, and the situation wherein the utterance was produced.

The inaugural speech marks the beginning of the president's governance. With the 31 million votes that he got, he knew that his call for unity, an affirmation of his father's declaration of unity in "National unity is the covenant between every Filipino, and between the leader and his people," was a factor that won the hearts of those who voted for him. The concept of addressivity is at work here. He knew that reaction to the call for unity would be positive. He restated this as an appeal to their emotions. Appealing to their hearts must have added to the persuasive effect of his speech.

DISCUSSION

Utterances of President Marcos Jr. Suggesting the Inclusion of other Consciousnesses in his Speech

Table 1 is about President Marcos Jr.'s call for unity, and this utterance exhibits the voice of his father, the late Marcos Sr. The call for unity and the words, especially "yearnings," "mirrored your sentiments," and "hopes for family" must have touched the hearts of the Filipinos who voted for him as these words stirred the inner feelings of their need to be understood. These must have also awakened the sense of unity felt during Marcos Sr.'s regime when the differences in socio-economic status felt during the most recent decades in the Philippines were not that strong, if not absent. The utterance of President Marcos Jr.'s –"it echoed your yearnings…" calls back to his father's 1st

inaugural speech, specifically Marcos Sr.'s-"Our people have come to the point of despair," "I have heard your cries," and "I have seen it in our barrios, huts, and hovels all over the land" implying that the two presidents expressed their sensitivity to the country's problems and a factor as to why the two presidents had an appeal from the Filipinos that supported them. The current president's words were like a salve that soothed hearts that felt the loss of what they used to identify with: the national unity that Marcos Sr. had instilled in the Filipinos.

Additional utterances from Marcos Sr. showed that the theme of unity could be traced back to his father in the words and phrases, specifically "no Filipino… will be exempt," "never again stand in alienation," "build one nation," "unite, not divide," and "Filipino unity," to name a few. Those mentioned show polyphony from Bakhtin (1986), in which President Marcos Jr. expressed the importance of the nation's unity as his own.

Table 2 presents Marcos Jr.'s "…you rejected the politics of division," which further shows the strong influence of his father on his perspectives as a leader. In saying he was not an instrument of change but "You were that; you made it happen. I am now. You picked me to be your servant…." President Marcos Jr. accepted the people's will the way the late president attributed his leadership to the people's will: "…you have rejected all these through a new mandate of leadership…The voice of the masses is present, the Filipinos." Aside from the father's voice in the son's utterance, both their utterances also represented the voice of the Filipinos, which had been expressed through their votes. The use of 'your' and 'your' are present in both passages, suggesting that the Filipinos have a voice in this part. Bakhtin (1986) explains that an utterance reflects different speakers' ideas. Marcos Jr. uttered that passage to express that the choice for his leadership and how he presents himself is the result of the voices of the Filipinos.

Likewise, Table 3 shows how the son drove the nation toward action, mirrors the father's propelling words. Marcos Jr.'s "Come…give that wheel a faster turn" reminds of Marcos Sr.'s "Come…march together…" presented in Table 3. Marcos Jr.'s use of "radical change …to recover what we have lost in the fire" echoes the nation's unity and the road to prosperity.

On the other hand, Table 4 is Marcos Jr.'s "We all want peace in our land," which upholds peace like his father did, as expressed in Marcos Sr.'s "Peace…we declare." Marcos Jr. also represented how Marcos Sr. expressed his sensitivity to people's dreams. This is presented as utterance pair number 7.

In Table 5, his utterance is polyphonic as it refers to the point of view of a defined source, which is his father, Marcos Sr. President Marcos Jr. said this in his speech, "Ang pangarap niyo ay pangarap ko," which also resembled what his father said in his inaugural speech –"This is your dream and mine.". To further support his sensitivity to the Filipino dream, the late Marcos Sr. gave importance to his vision of the dream Philippines being prosperous when he uttered, "Let us dream the vision." "…prove to our prosperity that our dream was true", and "redeeming every dream and aspiration." The "dream of prosperity" was addressed by Marcos Sr in the past, and it echoes what President Marcos

Jr is now doing; he is using his father's utterance, to make it his own. This shows that the dreams of President Marcos Jr and the late Marcos Sr are the same or in line with one another. In addition, there are utterances from Marcos Sr that are related to "dreams" but added that the president and Filipinos should not just dream but "achieve" as seen in "…not merely dream but we shall succeed" and "change not in dreams and aspirations… but in rededication and reappraisal".

Table 6 indicates another evidence of polyphony in utterance pair numbers #8 and #12. This shows the father's influence on the son in giving importance to agriculture. The father's consciousness concerning agriculture can be traced not only in his utterances but also in his Agrarian Reform Program known as Masagana 99 (Martial Law Museum n.d) (Anastacio & Abinales, 2022), which was meant to increase rice production through the use of new technology by farmers. The drive toward "rice self-sufficiency" in the past is echoed in the inaugural speech with the expressed aim for "food self-sufficiency.". When President Marcos Jr. said, "None but one delivered," he remembers how his father gave importance to agriculture. The late Marcos Sr highlighted the voice of the Filipino farmers in "We speak to our farming communities." and "Farmers…as leaseholders". The late president also gave his opinions and goals for agriculture during his time – "self-sufficiency…is a major goal", "we have succeeded in producing enough seeds," and the words "attaining" and "devoted."

Further, Table 7 presents Utterance 8, another evidence of polyphony. This utterance shows President Marcos Jr. talking about the education system of the Philippines; the president mentioned going back to the basics, not just history. Marcos Jr. values the education system of the Philippines and wants to improve it by emphasizing sciences, vocational skills, and global language.

By emphasizing not just history, it shows that the president acknowledges the opinions of the Filipinos about the past and his father, suggesting that "re-writing" history is not on the president's cards. Marcos Jr's utterance about the educational system echoes his father's utterance, "…providing an educational system which can tap the potentials and vitality of our human resources," which expressed concern about the current state of the education system, which leads to employment issues in the country. The utterance pair also echoes Marcos Sr's goals for national development from "Education is central…" in making the education system in the Philippines have more workforce skills as seen from the late president's utterance, "lower education adds little to the skilled manpower" then the two president's mentioned vocational skills / vocational schools; the two presidents showed their sensitivity to a longtime issue which is unemployment. The voice of the OFWs and future working Filipinos is present in this utterance as said by President Marcos Jr- "Let us give OFWs all the advantage we can for them to survive and to thrive" and "sharpening theoretical aptitude…vocational skills".

In addition to the topic of the education system of the Philippines, in utterance pair number 10. The utterance shows what the president thinks of the current situation of the Philippines. This shows the influence of Marcos Sr. on Marcos Jr. in giving concern to education. Marcos Sr.'s voice concerning school can be traced in his utterance. He

continues to experience difficulties in the past, which is restated in Marcos Jr's inaugural speech. The utterance calls back to utterance pair #8 concerning education. It mentioned "a past education system" that had future generations for more and better jobs. This is mentioning what was analyzed in utterance pair #8; to be more specific, it echoed the late Marcos Sr.'s vision of adding different skill sets in students to answer the shortage of jobs. Marcos Jr. and Sr. mention "vocational skills or schools."

In Table 8, 'No one was prepared for COVID-19 when it spread," as expressed by Marcos Jr. in his inaugural speech. The president stated that the Philippines would become better prepared to address future issues and improve public health care under his watch. This is seen in utterance pair number 10, also from the utterance pair expressed by his father, "We shall strive to raise the efficiency of our public health service."; Marcos Sr. addressed health service because, at the time, different diseases were running rampant. Even if the technology advanced, many Filipinos needed more public health care. Marcos Jr. can express his sensitivity to Filipino health and safety, as seen in utterance pair 11. President Marcos Jr mentioned the struggles of Filipinos in public health during the pandemic and expressed his concerns. While Marcos Sr gave importance to the healthcare system and public health in his 2nd SONA by establishing The Malaria Eradication Program, increasing the staff and medical supply in rural areas, and deploying more medical staff in "barrios" and the "rural population." With these in mind, the voices of the needy Filipinos who do not have access to health care are present in this utterance pair. This relates to how Park-Fuller (2009) explained that polyphony is the ability of any utterance to convey another person's utterance while it is from the author, which then forms the dialogic relationship between the voices.

Moreover, Table 9 shows utterance 12, which mentions investors. It used the word "promising," which echoes his father's vision of the Philippines as a prosperous country for all: "We appeal to the businessmen of this country…". In this utterance, President Marcos Jr shared with the Filipinos that investors are already set up to help the Philippines flourish but emphasized that the full potential of the Philippines is not yet reached. This is similar to how his father addressed the investors and business people in his utterances, where Marcos Sr welcomes Filipino investors and investors from abroad in the Philippines. This implies that his father's goal of welcoming local and foreign investors to do business in the Philippines is also the intention of President Marcos Jr.

For Table 10, utterance 13 was presented. President Marcos Jr. directly mentioned his father by saying he built better roads and produced more rice than other administrations. President Marcos Jr. implies that his father's infrastructure and rice production contributions are unmatched. The way Marcos Jr. is aware shows similarity to how Marcos Sr. expressed awareness of his accomplishments, judging from Marcos Sr.'s multiple utterances about his infrastructure and rice production programs.

As seen in Table 11, President Marcos Jr talked about the nation being safer and more prosperous. His utterances show the polyphony and how it echoes Marcos Sr's vision for a prosperous road in the Philippines. Marcos Jr echoes what he and his father saw in the Philippines as a struggling nation, as seen in utterance 14. It is shown in how

Filipinos vote on who they believe can lead the country in the coming years. This utterance 14 shows the different utterances of Marcos Sr, who projected the voices of the masses.

Similarly, Table 12 indicates that the Filipinos cried for change; President Marcos Jr also mentioned "politics of division." This implies that even the government and the Filipinos are not united as a nation, which explains why President Marcos Jr uttered, "Imagine what you and the government can achieve together." The essence of the government and the citizens working together, being united is echoed in the utterances from Marcos Sr in utterance pair #15, in which Marcos Sr mentioned 1- the government is a servant to the nation's dream and needs, 2- planning new concepts that emphasizes the cooperation and interaction between the office and its people, and 3 – the initiative of the Filipinos together with the government will determine what can the nation accomplish. Overall, this utterance pair goes back to the president's theme of unity.

Equally important, Table 13 presents Utterance 16, which sees President Marcos Jr saying, "…let us march together towards the dream of greatness." After analyzing the utterances shown in Table 1, the final sentence in his inaugural speech sums up what he intends to do. Combining what was analyzed, it is implied that the mention of "what was lost in the fire" is referring to what the late Marcos Sr envisioned for the Philippines, which can be seen in utterance pair #16 as "let us cross this frontier," "march together towards the dream of greatness," "a future which will be bright and prosperous," etc. The road of prosperity implied during his father's time was lost in the fire.

Lastly, Table 14 presents Utterance pairs 17,18, and 19 when President Marcos Jr mentions the last president to take office, former President Duterte, and acknowledges or gives respect to the last president and thanks him for his efforts. This implies that President Marcos Jr sees former President Duterte as one of the presidents who were the "strongman" in the country, the first one being the late Marcos Sr. Thompson (2022) titled THE DECLINE OF THE YELLOWS AND THE RETURN OF STRONGMAN RULE from the book The Marcos Era A Reader. The article talked about the decline of the Yellows; in this period, Aquino's preferred successor, Manuel "Mar" Roxas II, lost to the 'strongman' Rodrigo Roa Duterte. It was also compared to how Donald Trump beat Hillary Clinton in the US presidential campaign in the same year. Thompson also discussed that Duterte effectively portrayed Roxas as "incompetent, soft on crime, and out of touch with ordinary people." Roxas also approached using liberal reformism, which was also used by the Aquinos and Ramos, to a successful effect. Still, in the case of the 2016 election, Roxas' attempts did not gain the population's attention and support. Thompson continued to explain that the outcome was the Filipino seeing Roxas' attempt as insincere and self-righteous. The yellows also promised the Filipinos that they would eradicate corruption, which they argued would end poverty, as seen in Noynoy's campaign slogan in 2010, "When there is no corruption, there will be no poverty."

Essentially, utterance pair 19 shows Marcos Jr. praising Filipino nurses. The articles from Alibudbud (2022) and Chia and Tolentino (2021) illustrate what Filipino nurses felt and went through during the pandemic. Marcos Jr.'s mention of the nurses in

the Philippines reflects the consciousness of our nurses. They know how valuable they are everywhere and that they are worth more.

Intentions to Including Other Voices in the Speech

President Marcos Jr.'s utterances revealed his call and intention for peace. Besides, in utterances 8 and 13 is where President Marcos Jr mentioned his take on the current state of agriculture and his concerns, together with mentioning his father in "None but one delivered," "My father built more and better roads…more rice", his calls back to his father as a way to remember the goals and accomplishments set out my father. The mention of these could solidify that the late Marcos' legacy is unmatched.

The utterance-"Our nurses are the best in the world…" was to emphasize that Filipino nurses are valued abroad for their dedication and paid better abroad than in the Philippines. President Marcos Jr emphasized Filipino nurses' importance and value by saying they were underpaid for their risks and dedication amidst the pandemic. According to Alibudbud (2022), they discussed the migration and resignation of Filipino nurses during the COVID-19 pandemic. Alibudbud's paper mentioned that the first year of the pandemic showed Filipino nurses resigning and then moving to work abroad. The result was that hospitals suffered downsizing in their staff due to the lack of healthcare workers. Filipino nurses were praised as heroes during the pandemic; they were respected and honored better. They were at constant risk every day and exhausted.

President Marcos Jr mentioned in his inaugural speech-"Investors are now setting up industries along the promising routes built." The utterance informs the country that investors are talking with the government to set up existing businesses or projects from past administrations. This is supported by the previous paragraph, where he mentioned the roads and rice his father produced and the projects of former president Duterte. To further support this, we look at the paragraph after "Investors…" where President Marcos Jr mentioned, "We will continue to build," and "I am not interested in taking credit."

Additionally, "I want to build on the success already happening." This implies that President Marcos Jr plans to improve the successful projects and programs that other people started. The mention of his father and Duterte implies that those two former presidents are his basis in developing the country for years to come.

Conclusions

The researchers discovered that the presence of voices in the inaugural speech of President Marcos Jr. displayed polyphony, as claimed by Bakhtin, similar to how Cabaysa (2016) revealed that the voice of Grace Poe's adoptive father's voice is predominantly present as well as the presence of other voices. What makes a speech polyphonic is when there are traceable intentions or thoughts from the speaker and embedded markers indicating explicit or implicit clues in the utterance. Based on the results, the researchers concluded that the alignment of the utterances from Marcos Jr. shows that the influence and intention of his father are connected to that of the president.

Recommendations

Since the study was limited to Marcos Sr.'s inaugural speech as the basis of analysis, other speeches from his mother and politicians must be considered for more valid polyphonic speeches and results.

Future studies could involve various voices from different intensive speeches not limited to one type.

Lastly, it is essential to note that including polyphonic markers can significantly enhance the results' conclusiveness.

Compliance with Ethical Standards

The study analyzed the polyphony in President Marcos Jr.'s Inaugural speech. It is essential to declare that this paper, while a unique contribution, respects and does not intend to plagiarize previous interpretative works that are similar in structure and came before it. The researchers cited and referenced the indicated ideas and sources to achieve this intention. Suppose any section of this paper is deemed to have instances of plagiarism. In that case, the researchers are open to comments, suggestions, and revisions to follow the code of ethics that comes with scholarly writing.

Also, the lead author allowed Dr. Butac to co-author this paper, who collaboratively worked with him in accomplishing it as his former professor and thesis adviser during his college education. Dr. Butac updated and made revisions to the original paper to meet the requirements of publications.

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POST-PANDEMIC SUPERVISION: A FUTURISTIC FRAMEWORK

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ABSTRACT

The researcher conducted this study to offer ways for English coordinators and teachers to advocate for education about and in the future. It introduced prospect-positive supervision and teaching futures manipulation and provided a framework to challenge traditional practices and promote strategic and futures-oriented conversations within the education sector. Semi-structured questions were used to gather the supervisors' and teachers' experiences in supervisory practices and teaching and learning strategies through interviews and focus group interviews. The questions were categorized into four CLA layers: Litany, Systemic, World-view, and Myth/Metaphors. Selected English coordinators and English teachers from public and private schools in Davao City were interviewed. The result enabled to recreate supervisory policies and develop renewed teaching practices suitable to the changing society. The metaphors created were supervision is *an exam* and English teaching and learning is *a globe*. These metaphors became the basis for open discussion and help foresight practitioners in individual research or workshop settings as they perform their duties and restructure educational policies in supervision and teaching-learning the English language. It also led to the co-created futures in education as the *"school of virtual reality",* where AI- generated (supervision) and metaverse (teaching and learning) play an explicit role in supervision and the English teaching and learning process.

Keywords: *Causal Layered Analysis, English language, futures studies, metaphors, supervision and teaching*

INTRODUCTION

Supervision is technical, educational, and moral support given to teachers. Its pivotal role is improving instruction and engaging teachers in a dialogue to improve teaching and learning. Before the pandemic, instructional supervisors performed their duties based on different instructional and supervisory models (Hurry & Russel, 2022). However, the usual practices done by English instructional supervisors and English teachers were changed because of the pandemic. English supervisors' role is essential to ensure learning happens inside the classroom. English teachers must be updated with the pedagogies that ensure learning occurs. English supervisors should also be up-to-date to give training and support services and evaluate teachers' performance according to regulative rules and programs (Kayaoglu, 2012).

The changes brought about by the sudden impact of the COVID-19 pandemic have shown that education needs to be flexible and adaptable to the changing world's different contexts and needs (UNESCO, 2020). The closure of schools has led the academe to use technology, different media, digital platforms, and connectivity in ways not foreseen even decades ago (Inayatullah, 2021).

Responding to the effects of the COVID-19 pandemic, the Department of Education (DepEd) designed the Basic Education Learning Continuity Plan (BE-LCP), DepEd Order No. 12, s., 2020. It contained the direction for basic education, implementing guidelines and directives, operationalized programs, activities, and projects, and continuing the teaching and learning processes. One of the inputs of the BE-LCP was the use of Essential Learning Competencies (MELCs). These MELCs served as the bases for curating Self-Learning Modules (SLMs) and other learning materials during the pandemic (DepEd, 2020).

The learning environment had become diverse and encompassed, the physical classroom shifted to the cyber world, and the home became the school (DepEd, 2020). As education continues amidst the pandemic, several problems have arisen because of this sudden shift. First, was the disengaged supervision due to a lack of or limited interaction with the teaching-learning process. Second, was the teachers' need for prior exposure to online learning and distance learning modality, technological knowledge, and pedagogical knowledge (Lie *et al.,* 2020). Third, learners were not satisfied with continuing online learning since they needed help to realize the expected progress in language learning (Mahyoob, 2020).

The physical closure of schools and the use of online or distant modalities have confused academic leaders. They needed to prepare to oversee a different delivery of instruction (Brock et al., 2021). The pedagogical and instructional practices were disconnected from the supervision of leaders, and supervisors could no longer "catch up" due to limited interaction (Mette, 2020). In addition, the sudden shift to distance learning forced everyone to continue with academic instruction with no or limited preparations regarding facilities, teachers' capacity, and students-parents' readiness (Lie *et al.,* 2020).

With all the ruckus on school personnel's supervision and teaching tasks, language teachers, in particular, had pointed out several problems. First, learners need to grasp a good foundation in language learning; however, the students' outputs failed to meet the desired quality due to limited interaction. Second, implementing English language learning was given little attention because school leaders and teachers mainly focused on adapting and using technology in conducting classes rather than performing the teaching-learning processes. Since most subjects used English as the medium of instruction, English played a significant role in helping these learners comply with the academic requirements regardless of the subject.

Nevertheless, with all these happenings, supervisors and educators see the "futures" of English language supervision, and the teaching and learning processes linked to the DepEd's (2020) Learning Continuity Plan's (LCP) three interconnected capacities: "innovation, agility, and synergy, which significantly linked to future." This research aimed to determine what the English language supervisors and teachers learned before and during the COVID-19 pandemic and to use these learnings in transitioning to the new educational "normal." This research offered ways for school heads/principals, English language coordinators, and teachers a glimpse about and into the future of instructional English language supervision and teaching and learning processes.

Research Questions

This study aimed to develop a framework for the future of instructional supervision and teaching English to foresee the future of this field during the post-pandemic. It also forecasted the changes it poses to the future caused by academic setup and policy changes. Specifically, this study sought answers to the following questions:

1) How do English language supervisors describe the instructional supervision of the teaching and learning process before and during the pandemic?
2) How do English language teachers describe the teaching-learning process before and during the pandemic?
3) How do English supervisors describe the supervision styles they will adapt as they transition from the pandemic to the post-pandemic period?
4) How do English teachers describe the teaching and learning process as they transition from the pandemic to the post-pandemic period?
5) What do English supervisors and teachers believe, and how do these beliefs help them create their ideal future?
6) What metaphors could be developed to support the futures of supervision and the teaching and learning English language environment?

METHODOLOGY

In this chapter, the researcher presents the research design, respondents, instruments, data-gathering procedure, and data analyses to answer the research questions.

Research Design

The study uses the Causal Layered Analysis (CLA), an approach and a technique used in foresight to shape the future. It includes the phenomena and their analyses at different depths and times according to the four levels: litany, systemic causes, worldview discourse, and myth/metaphor (Inayatullah, 2017). CLA can be used for groups, individuals, or oneself as a stand-alone method. It ensures that the researcher is aware and reflective of her or his prejudices. It can also do the following: *(1)* expand the range and richness of situations, *(2)* appeal to a broader range of individuals since it is non-textual and uses the poetic expression in making foresight, *(3)* promote different ways of accompanying interests among participants, *(4)* distinguish and layer participants, *(5)* move the discussion to a more profound and marginal rather than obvious, *(6)* allow different transformative actions, *(7)* lead to the procedure that may be informed through layers of analysis, *(8)* lead to authentic, sustainable solutions, *(9)* develop short, medium, and long-term future, and *(10)* use different worldviews to understand the future and decide on a preferred one.

This research design is appropriate for this study since it gathered the respondents' experiences based on their accounts before and during the pandemic. It included the policies, practices, challenges encountered, the changes and adaptability to the sudden shift of learning modality, their values and beliefs as they moved forward to perform their respective duties, and the metaphor or myth that served as their ideal lived future. It increases the different views, and the participants can readily accept that the world is experiencing changes. Moreover, the CLA requires a wide-ranging literature review and an understanding of the four layers. Shown in **Table 1** are the functions of CLA, particularly in this research which are, mapping the future, creating the preferred one, and mapping the leading to a transformed one.

Table 1

Uses of CLA in a study (Inayatullah, Causal Layered Analysis, 2017).

Function	Result
Mapping the present/future	It prevents worldview blindness and creates whole-of-worldview and narrative solutions.
Create a preferred future	Moves from how things are to the desired future and enhances the visioning process.
Mapping Leading to a transformed future	Includes multiple positions plus a mapping leading to a transformed future transformed or integrated future.

To get the desired information, the questions were crafted and categorized based on the Causal Layered Analysis. CLA was a foresight methodology used to interpret various issues, revealing the underlying causality and unconscious bases. It opened up new conceptual spaces where alternatives to the existing norms are imagined and explored, allowing transformative actions (Simone, 2004). It helped deepen the understanding of

issues using the four-process: litany, systematic causes, worldview, and myth/metaphor (Inayatullah, 2019; Davidson, 2020). It explored deep myths and new litanies based on different viewpoints and use them in implementing new strategies that address problems. It explored connections between past, present, and foresighted future practices by integrating the theoretical understanding of future discourses and drawing upon experiences based on the context and practices the respondents had gone through in their respective fields (Inayatullah, 2017).

Figure 1 shows the CLA in qualitative data analysis in which the study utilized the CLA layers as the primary research framework. It is a stand-alone method (Talebian & Talebian, 2018), and claims to dig deep into how the participants foresee the future. Moreover, it brought scope and richness to thinking, helping with considering knowledge-related practices and moving conversation naturally from obvious to deeper levels (Talebian & Talebian, 2018). Moreover, this "futures study" follows the "deepening" using narratives, like deep stories, to make this fourth layer (metaphor) clear and practical (Milojevic & Inayatullah, 2015).

Shown in **Figure 1** were the stages that guided the researcher in analyzing the data gathered.

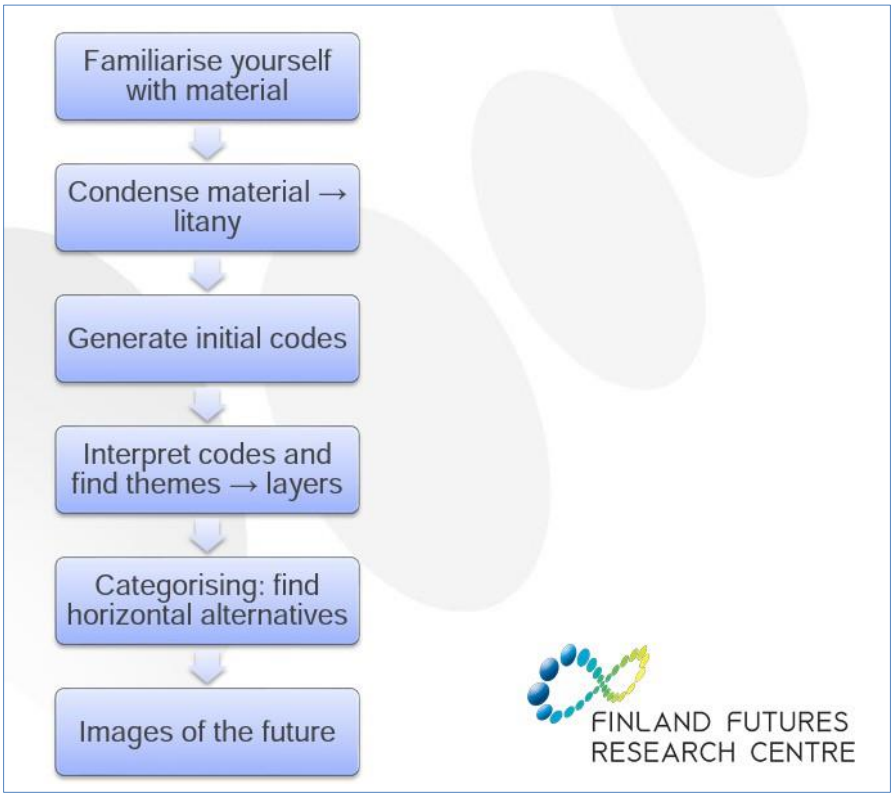


Figure 1. *The CLA in qualitative data analysis (Tapio & Heinonen, 2018).*

Respondents

Shown in **Table 2** are the respondents of the study for the qualitative data. It is composed of the following: four (4) English coordinators or master teachers in English from public schools and three (3) English coordinators/academic heads from private schools who have been a supervisor for at least three years; four (4) English teachers from public school and four (4) English teachers from private schools who have been teaching for at least three years.

Table 2

The English Coordinator and the Teacher respondents.

Participants from public and private schools	Age bracket	Years of Service
English Coordinator A	30-45 yrs. old	3 years up
English Coordinator B		
English Coordinator C		
English Coordinator D		
English Coordinator E		
English Coordinator F		
English Teacher A	25-35 yrs. old	
English Teacher B		
English Teacher C		
English Teacher D		
English Teacher E		
English Teacher F		
English Teacher G		

The respondents were identified randomly, regardless of their gender. However, the ages for teachers were from 25-35 years old, while the ages of the coordinator/supervisor ranged from 30-45 years old. These people were considered millennials, born between 1981-1997. They were the first generation to reach adulthood in the new millennium, which indicated that they experienced the rapid changes followed by the later generations (Frey, 2018). Moreover, it was made sure that the respondents were exposed to their field of work before and during the pandemic so that they could share valuable insights and share experiences for this study.

Research Instrument

This study's main instruments were a semi-structured interview crafted using the CLA model and a simple researcher-made survey questionnaire. Through individual interviews, the semi-structured questions gather the supervisors' and teachers' litany, systemic causes, worldview discourse, and myth/metaphor in supervisory practices and teaching and learning strategies. These questions were used during the individual interviews and Focus Group Discussion (FGD). The survey form was crafted after the individual interviews. It contained the metaphors from the respondents. Meanwhile, the

participants ranked the metaphors using Google Forms to find out what metaphor resonated in the group.

Individual interviews. Semi-structured interviews contained several vital questions that help defined the explored areas. The researcher may have adjusted and changed the direction of the questions (Alamri, 2019). Open-ended questions facilitate faster interviews, making them easier to analyze and compare. In addition, this method allowed the researcher to collect open-ended data and explore the participants' feelings, thoughts, and beliefs about the topic (DeJonckheere & Vaughn, 2019). It also emphasized linguistic data, distinguishing the issues from the respondents' perspective in a particular area. It also played a significant role in getting open-ended details.
Moreover, it was substantial for assessing views, perspectives, and thoughts and helpful in collecting information from different participants (Alamri, 2019). Individual interviews promoted spontaneity since the respondents did not have the chance to change their answers or responses. These answers were more reliable and informative.

Focus Group Discussion (FGD). FGD originated in Sociology (Mishra, 2016) and is a type of in-depth interview done in a group. The influence of participants on each other through their ideas and contributions during the discussion was present. The moderator led the discussion, in this case, the researcher. The discussion was outlined beforehand to ensure all topics were covered (Mishra, 2016). Group discussion created a synergy effect on participants, and when there was limited opportunity for data collection, FGD was done to compare the result to individual interviews. Moreover, it was utilized to collect high-quality evidence and can be a source to inspect internal views and emotions (Akyildiz & Ahmed, 2021).

Using CLA to outline the questions. The questions followed the four (4) CLA layers: litany, systemic, worldview, and myth/metaphors. Each category corresponded to the statement of the problems and a set of probing questions.

Litany, the first layer. It is the unquestioned view of reality (Inayatullah, 2014). The questions specifically revolved around the instructional supervision activities of coordinators and teaching strategies of teachers before and during a pandemic, it tackles the observation forms they used in line with the standards that the teachers were following in teaching English, and how things in their work changed or modified when the pandemic occurred. These were the non-negotiables and the actual happenings based on the policies and changes in the practices the participants had encountered.

Systematic, the second layer. These were the system/social issues where the academic analysis of frequent causes is investigated. The data of the litany was explained and questioned at this level (Inayatullah, 2014). The questions revolved around the critical aspects that challenged them during the pandemic, which they consider helpful in the post-pandemic. They were also asked about their preparations during the transition and how these preparations helped them face the future.

Worldview, the third layer. This refers to deep beliefs and values. The respondents were asked about their educational philosophies and values that made them continue their work amidst their challenges. Participants unconsciously held to their ideologies at this level, and their discursive assumptions were unpacked based on their accounts in the first and second levels (Inayatullah, 2014). This level prepared the respondent for the last level, the myth/metaphors.

Myth/ Metaphors. The questions were about the ideal future of the coordinators and teachers in the English teaching and learning process. It also discovered the depth of meanings by asking the respondents to create a metaphor that describes their ideal future: for coordinators, the metaphor for English Instructional supervision, and for the teachers, the metaphor for English teaching and learning. In this fourth and last layer, the rhetoric or creative representatives of preferred lived futures, were placed (Riedy, 2008, cited by Carballo, 2018).

Guided by the linear process of CLA (Simone, 2004), the questions were reviewed, revised, and regrouped until they reached their final version. The linear process of CLA:

1) *The vertical gaze, uncovering causality, was used to expose the underlying cause of the issue.*
2) *Horizontal gazes, discovering alternatives was about asking questions that allow one to discover/uncover other ways of knowing.*
3) *Re-envisioning the myth and metaphor was the initial re-forming of an issue from the myth/metaphor as an image/story of the problem to the imagining and defining of ideal alternative imageries/stories.*
4) *Recasting the issue/problem and defining possible solutions by considering the causalities and discovering ways with a preferred solution.*
5) *Selecting and documenting solutions at each level* (Causal layered analysis: A 'cookbook' approach page 3)

The development of the instrument. The instrument was revised according to the suggestion of the validators and after the conduct of the pilot testing. It ensured that the questions asked to fit each level of the CLA and that the researcher could get crucial data from the respondents' answers.

There were revisions made to the interview questions. The first version consisted of five statements of the problems and the probing questions. The four (4) validators gave their inputs to improve the questionnaire, especially the probing queries. The second version consisted of five statements about the problems, but the probing questions were revised per the validators' advice. After the pilot testing, with two (2) English teachers and one (1) English coordinator, some probing questions were removed, and some were revised. In the third version, the questions were revisited as advised by one of the questionnaire validators, Dr. Sohail Inayatullah, to ensure that there should be a question(s) that would lead to the respondents' world views or their beliefs or values; this resulted in version 4 that contained six statements of the problems to fit into the four layers/levels of CLA properly.

Interrater Reliability. Interrater reliability refers to the scope to which two or more experts agree. It was a test of consistency of measurement (Fink, 2010). Interrater reliability also

called *interobserver reliability*, helped measure people's agreement on the same thing by reading the transcribed responses (Middleton, 2023). After the pilot testing, the transcription of the interviews was submitted to field experts to test its reliability. In this study, three (3) inter-raters assess the data. A rating or score sheet contained the category of questions (based on CLA). The inter-raters were given a copy of the pilot interview transcript. This activity aimed to minimize the subjectivity of the data. The inter-rater mean average is 4.

The metaphors. Metaphors provide a window to the construction of knowledge and insight. It was used as an analogy that can enhance understanding (Groth & Bergner, 2005). Metaphors can also be derived from narratives that go beyond conventional issues. In this research, they considered the unconscious and emotive side of the participants, followed by "deepening," which enhanced the broader aspect of the analysis while suggesting explanations for the presented dimensions of the problems through a researcher-made metaphor. These metaphors were gathered through the final questions during the individual interview and were arranged in a Google form. During the FGD, the respondents were asked to rank them (Inayatullah, 2019).

The metaphors that were ranked according to the participants' most preferred future served as the destination to achieve the desired future (Rogerson, 2021 & Inayatullah *et al.,* 2016). Myths/ metaphors are more challenging to access than simple perspectives. In this case, the participants were asked to compare the future to an idea or a thing. Expected answers were symbols or material things directly associated with the future. It included proverbs, slogans, idioms, religious texts, *etc*. After this, a consolidated metaphor was created, to describe both (supervision and teaching-learning English), further, the metaphors were expounded, resulting in the metaphors of English supervision, teaching, and learning in 5 years and 10 years. Aside from the CLA table, images were also used in this case.

Data Gathering Procedure

This qualitative study collected data through in-depth interviews and focus group discussions. All interviews were conducted through a video conference to adhere to safety protocols against COVID-19. The following steps were observed in conducting the study:

Seeking permission. The researcher sent a request letter for permission to the DepEd's Schools Division Superintendent (SDS) of Davao. The permission was subsequently granted; it allowed the sending of permission letters and endorsements to the public-school principals, school heads/directors, and principals for private schools. The school heads' approval led the researcher to identify the participants with the assistance of the school principal and the administrative assistant.

Securing permission from the participants. After identifying the participants, a letter of permission and an informed consent form were sent to each respondent. It was to ensure that the participants had agreed to be in the study and that they understood what it was

all about. The ethical consent also contained complete information about the study and the protocol to adhere to gather the data. The signed informed consent letter was retrieved before the individual interview was held.

Conducting in-depth interviews. Observing the COVID-19 health and safety precautions and other conditions asked by the SDS of Davao City, all interviews were done using google meet and Zoom meetings. The interviews lasted for 30-40 minutes per respondent. Meanwhile, the FGDs were done within 60-90 minutes per group. Each session was recorded with the permission of the participants.

Transcribing the recorded interview responses. Interviews were digitally recorded with the respondents' consent. Transcription of the digital recordings was done to ensure quality.

Data Analysis

After conducting both semi-structured interviews and FGDs on the identified groups, the researcher did the transcription to take the interview contents and effectively analyze them.

The data collected used the CLA qualitative data analysis. These were analyzed using the CLA in qualitative data analysis steps shown in **Table 3**. *First*, familiarizing the material; in this study, the transcribed responses of the respondents. *Second*, the summarizing of data in the litany and systemic causes. *Third*, is the generating of initial codes. *Fourth*, is the interpreting of the codes and finding the themes or labels. *Fifth*, is the categorizing of the worldview.

Lastly, imagery of the future using myth/metaphors. This fourth layer reflects the participants' emotional level experiences based on their worldview. The language was more precise, suggesting visual images and touching the heart instead of the mind (Inayatullah 2004). It presented different perspectives on the subjects and thus opened opportunities for further dialogues (Inayatullah, 2017).

Table 3

The CLA in Qualitative Data Analysis (Tapio & Heinonen, 2018).

1) Familiarizing the material.
2) Condensing the material, litany, and systemic causes.
3) Generating initial codes.
4) Interpreting codes and finding themes.
5) Categorizing: Finding horizontal alternatives, worldview
6) Imaging the future, myth/metaphor

Tables were prepared for each group of responses to answer the statement of the problems. Each table contained the labels/themes from the analyzed data. Meanwhile. the ranked metaphors during the FGD helped identify the preferred lived future for supervisors and teachers. Afterward, the "deepening" was done through researcher-made metaphors and illustrations.

RESULTS

The presentation proceeds in this sequence: (a) English language supervisors' instructional supervision before and during the pandemic; (b) English language teachers' teaching process before and during the pandemic; (c) supervision styles in the post-pandemic period; (d) teaching and learning process in the post-pandemic period; (e) English supervisors and English teachers' beliefs and values; and (f) metaphor developed to support the English language future supervision, and the teaching and learning process.

English Language Supervisors' Instructional Supervision Before and During the Pandemic

Table 4 summarizes English coordinators' supervision practices before and during the pandemic at the litany level. The term *"used future"* identifies outdated narratives created in the past, and this reality has been challenged by changes (Milojevic & Inayatullah, 2015).

Table 4

The Litany of English Coordinator's Supervision Practices Before and During the Pandemic

Litany Level	**Practices**
Used Future *(Pre-pandemic)*	Supervision based on provisions Securing quality teaching-learning
The changing environment *(Pandemic)*	Reconciliation of old ways Adaptation of Technology

English Language Teachers' Teaching Processes Before and During the Pandemic

Table 5 presents the litany level for English teachers' practices before and during the pandemic.

Table 5

The Litany of English Teachers' Practices Before and During the Pandemic

Litany Level	**Practices**
Used Future *(Pre-pandemic)*	Implementing differentiated instruction Interconnecting Teacher-student
The changing environment *(Pandemic)*	Multitasking of teachers Compromising academic integrity

	Giving Inauthentic assessments Providing student help Failing value formation Combining Traditional and technology

Supervision Styles in the Post-Pandemic Period

Table 6 focused on the changes and adaptability of the coordinators as they described their experiences in preparing for the transition from the pandemic to the post-pandemic period.

Table 6

The English Language Coordinators' Supervision Styles from Pandemic to Post-Pandemic.

Systemic Level	**Supervision styles**
Pandemic	Autocratic supervision Bureaucratic supervision
Post-pandemic	Laissez-faire – the free spirit Democratic supervision

Teaching and Learning Processes in the Post-Pandemic Period

Shown in **Table 7** are the teachers' preparations and adaptability from the pandemic to the post-pandemic.

Table 7

The Teachers' Preparation and Adaptability from Pandemic to Post-Pandemic and the Future.

Systemic Level	**Preparations and adaptability**
Pandemic	Marrying technology Upskilling of teachers
Post-pandemic	Readying for the hard battle

The English supervisors' values and beliefs to help recreate the future

Table 8 summarizes English coordinators' values and beliefs to recreate the future. This section examines the coordinators' values and beliefs that inclined them to continue performing their instructional leadership duties. It consisted of their current and future perspectives. Also, the coordinators have perceptions that they believe in that align with the values and ideas of their teachers. They believe in being responsible for the students under their care. The coordinators expressed their responsibilities to the teachers, believing that when teachers were properly handled, it would reciprocate to the learners. Below are the manifestations of the English supervisors as they relay their beliefs and values to help recreate their desired futures.

Table 8

The English Language Coordinators' Values and Beliefs to Recreate the Future.

	Values and Beliefs
Worldview Level	Quality performance=, quality learning Progressive mindset and open-mindedness Adaptability Act of service

Shown in **Table 9** are English teachers' values and beliefs to recreate the future.

Table 9

The CLA of English Teachers' Values and Beliefs to Recreate the Future.

	Values and Beliefs
Worldview Level	Commitment Love Competence Hope

The CLA of English supervision and teaching and learning process

The United Nations Educational, Scientific and Cultural Organization (UNESCO) released the Journal on Co-creating Educational Futures: Contradictions between the emerging future and the walled past. This paper presented a simple future-thinking intervention process for alternative strategies and illustrated foresight in education and beyond. Moreover, its provided vital issues within the UNESCO 2030 Agenda for Sustainable Development and Futures of Education initiatives (Inayatullah, 2020). In summary, **Tables 10** and **11** present the CLA levels of English supervision and CLA on English teaching and learning.

Table 10

CLA on English Supervision.

CLA Level	***The changing environment (Post-pandemic)***
Litany	Adaptation of Technology
Systemic	Laissez-faire, the free spirit Democratic Supervision
Worldview (Values and beliefs)	Quality performance is quality learning
Metaphors	An exam/ a test

Table 11

CLA on English Teaching and Learning.

CLA Level	*The changing environment (Post-pandemic)*
Litany	Combining traditional and technological teaching and learning
Systemic	Readying for the brutal battle Bridging the learning gaps
Worldview (Values and beliefs)	Commitment Love Competence Hope
Metaphors	A globe

DISCUSSION

English Language Supervisors' Instructional Supervision Before and During the Pandemic

Even before the pandemic, the supervisors already experienced difficulties in performing their job as instructional leaders, with all the tasks like year-round supervision, checking of lesson plans and test questions, conducting research, implementing school policies, making sure the teachers receive assistance and training, and uplifting oneself by further studies and leadership training as part of instructional supervisory provisions. They perform mid-administration duties and have specific roles in schools, especially in heading the English department through initiating programs that will benefit the students' English language learning, ensuring quality teaching-learning experience.

When the challenges brought by the pandemic confronted supervisors, they encountered many problems, including implementing the usual protocols and policies prescribed by the DepEd. However, the pandemic gave them the idea that the traditional ways have to be aligned with the sudden changes. The experience made the educational sectors see the need for ICT training of teachers to adapt to the current learning modes (Othman & Mydin, 2022).

Everyone fumbled in the dark and felt they were lost. Their fear of the "unknown" almost lasted a year, trying to find out what could be done and should be done with the problems that arose during the health crisis, and their role as supervisors from implementing rules and regulations as mandated by DepEd. Orders and memo and or institutional policies for private institutions to become lenient and flexible gave them the idea to change the paradigm from being authoritative leaders and sticking to the rule to being warm and considering leaders as part of the success of the changes brought by the transition.

Below are the manifestations of their experiences as they transformed from the pre-pandemic to the pandemic period and how they made their way to succeed in every challenge they faced as English supervisors.

Monitoring and checking of teachers' lesson plans, tables of specifications (TOS), test papers, and other documents related to the teaching and learning processes were conducted to supervise the teaching and learning environment before the pandemic. The coordinators claimed they mainly focused on classroom visits to ensure the delivery of content lessons in the teaching-learning environment. Classroom observation and monitoring were essential practices performed by the coordinators. It is the effort to develop teachers to achieve the teaching-learning process's standards and objectives (Othman & Mydin, 2022). The coordinators shared their pre-pandemic class observation practices:

> *Before the pandemic, our protocol was an announced classroom observation"* (Zeus).
> *We have pop-in and formal visits. We pass by the corridors focusing on classroom management"* (Hermes).
> *Class observations were done in the physical classroom before the pandemic. We call it non-formal and formal classroom observations"* (Ares).

Classroom monitoring and observations for the public schools were conducted using a standard evaluation form issued by the DepEd. In comparison, private institutions adhere to the forms from accrediting bodies like the Private Education Assistance Committee (PEAC) and the Philippine Accrediting Association of Schools, Colleges, and Universities (PAASCU) and school-formulated forms. The private school academic supervision practice is categorized as follows: pop-in visits, coordinators staying inside the classroom for 15-20 minutes, non-rated clinical observations, or structured observations. It is done to improve the teaching-learning processes; constructive feedback is followed so teachers will know what is best and what to work on with their class strategies. The rated formal observation served as the basis for performance evaluation.

The purpose of visiting the teaching spaces was to see what was happening inside the classrooms and to check whether the teachers delivered the standards in the teaching and learning process. Furthermore, the supervisory program updates the teachers' knowledge on recent advances; update skills, attitudes, and approaches to new techniques and strategies; enable teachers to apply changes to the curriculum; exchange information and expertise; and help struggling teachers to become more efficient and effective on their craft (OECD [Organisation for Economic Co-operation and Development], 2009).

School leadership is about class observations and changing the school culture, setting goals, monitoring student achievements, and confronting new challenges to meet expectations and standards (Gamage *et al.,* 2009). There should be immediate feedback after class observations to inform the teachers if they met the standards. A post-conference is scheduled to communicate the supervisors' comments after class observations. It is part of the coaching-mentoring program. Meanwhile, the teachers' performance rating is based on the result of the final or year-end class observation conducted. The statement of one coordinator supported this:

> *… post-conference followed. The end of the school year is the final observation. Each teacher is rated, and the result is included in the 201 files as part of the teacher appraisal (Zeus).*

To guarantee quality instruction, the coordinators used indicators and checked whether classroom activities aligned with the vision, mission, core values, and the learners' needs. They also checked whether the lessons and skills taught applied to real-life situations. Particularly in language teaching, they looked for the teachers' efficiency in using the language, grammar, constructing questions, and student-teacher and student-student interaction. Class interaction allows students to exchange ideas, feelings, insights, opinions, and others (Eisenring & Margana, 2019). The coordinators confirmed this when they shared:

> *There is a set of indicators that we used, speech and learning process, and the alignment of teaching practices to our school's vision, mission, goals, and core values. We want to ensure that the lessons are applied in real context or situations* (Zeus).
> *… they have to be communicatively competitive in class, a model, and use and speak the language so that students will follow* (Athena).
> *… we look for the usage of grammar, pronunciation, and the way they construct the questions and interaction between students and teachers. The students also are encouraged to speak the language* (Hermes).
> *I always look at two-way interaction. The teacher and learner interaction. I need to see that the students develop their communication skills, especially speaking and writing* (Ares).

According to Hwa *et al.,* (2020), aligning instruction levels to the student's goals and needs is essential to further learning. It implied that human learning is cumulative. Since memory has a minimal capacity for processing new information, the brain expands and capacitates when building on long-term knowledge. This long-term knowledge involved essential lifelong learning. Likewise, the teachers should ensure that the learners have prior knowledge before teaching new skills (Hwa *et al.,* 2020).

The alignment of the educational philosophy and teaching-learning process directly implements educational theory, underpinning the learners' everyday life (Bim-Bad & Egorova, 2016). This process is essential in monitoring and evaluating the teaching and learning process. The DepEd's vision is to produce Filipino learners who love their country and whose competencies contribute to the nation's building. Its mission is to protect and promote the right of every Filipino learner to get quality, culture-based, and right-to-complete primary education. *Maka-Diyos, Maka-tao, Makakalikasan, and Makabansa's* core values helped the department achieve the education mandate established through Republic Act 9155 (DepEd Order No. 1, s., 2003). All of these are part of the evaluation or checklist for quality assurance.

Before the pandemic, the observation had nine (9) indicators. These are (1) application of content knowledge within and across subject areas, (2) using of mother tongue, Filipino, and English, in facilitating learning, (3) using of verbal and non-verbal classroom

strategies, (4) establishing safe and secure learning space, (5) promoting fairness, respect, and care, (6) maintaining a learning environment that nurtures and inspire learners, (7) applying varied strategies that maintain learning environments to motivate learners, (8) designing, adapting, and implementing strategies which were responsive to diverse learner's needs, and (9) adapting and using culturally appropriate strategies to address the needs of indigenous learners (DepEd Resource, 2021).

The coordinators use these indicators in observing classes. Additionally, grounding on the English Curriculum Guide (DepEd, 2016), the LAMC aimed to produce graduates with the following competencies: communicative, grammatical, sociolinguistic, discourse, and strategic (K to 12 English Curriculum Guide, 2016). It also stressed multiliteracies, which meant recognizing many kinds of literacy at work and within society, and that English is the most widely used medium of communication in different curriculum content areas.

Private schools faced a fast turnover of teachers. Beginning teachers work in private institutions to gain experience before transferring to public schools for higher salaries (Buenaventura, 2013). With the rapid change of people in an institution, leaders' and novice teachers' support was needed to help them perform their job effectively (Okinyi et al., 2015). Nevertheless, even before the pandemic, the challenges were already put on the shoulders of the coordinators since the language teachers had to be guided, especially those newly retained. When asked what areas are observed when doing class visits, one coordinator said:

> *Depending on the needs, especially newly retained, and those non-English majors, from time to time, they are observed until we are confident that they can perform well* (Zeus).

Zeus had been an English coordinator for over three years in a private school. He also shared that he made sure to talk to the teacher after observation on the areas for improvement. His statement supported this:

> *We discuss and agree on what specific practices could be improved* (Zeus).

Not only the indicators, particularly in language teaching, get attention. The teachers are also observed in their classroom management, the art of asking questions, and other areas. One coordinator supported this claim:

> *All areas are observed, like classroom management, the art of questioning, and the teaching-learning processes* (Hermes).

The coordinators extended their task to informal talks to build rapport with the teacher and promote a good work relationship. Since they are confronted with adapting to complex environments by developing meaningful relationships with teachers to successfully manage the multifaceted contexts of schools (Lasater, 2016), they still do ways to establish relationships. After all, rapport made teachers feel peaceful and open to suggestions. It was one of the essential facets distinctive to human communication (Kapur, 2018). One coordinator stated:

> *There is also informal discussion aside from the post-conference, a pre-conference is also done. After the second month, we have the pop-in visits* (Athena).

The English language coordinators performed these academic supervisions before the pandemic. However, on January 30, 2020, the COVID-19 pandemic was declared. It has affected businesses, the economy, and the lives of thousands of people (Cennimo, 2023). Education was not an exemption. Some students found a way to continue their education amidst the physical closure of schools; the disadvantaged students were shut down together with the schools (Schleicher & Reimers, 2020).

In the Philippines, the closure of schools was very procedural and challenging. The DepEd issued memorandums that covered the measures, background situation, initiation of the risk management team, medical referrals, health situation reports, and reduction of flu in schools (Ancho, 2021). The following section presents the challenges met by the English coordinators during the pandemic.

Supervision during the pandemic. The pandemic affected people's social and emotional well-being, and learning and educational development had severe effects (Brock *et al.,* 2021). It was supported by the claims of Tabassum *et al.,* (2022) that the most common problems of English teachers were due to the high ratio of student teachers in one class and the designation of teachers to multigrade classes. These scenarios were already difficult to handle, especially when schools diverted to distance learning modality. It entailed patience and resourcefulness on the part of the coordinator's supervisory tasks. As mentioned by a coordinator:

> *Yes! There were real changes, especially in the first year of the pandemic, when everybody was groping in the dark. I needed to adjust my responsibilities as the English Language coordinator* (Athena).

The physical closure of schools and utilization of the online and distant delivery system have created critical issues for school leaders and their roles in instructional supervision (Brock *et al.,* 2021). Meanwhile, most schools with internet connectivity adopted blended learning, combining synchronous and asynchronous classes. A coordinator added:

> *We have virtual class observation, but it was not the same during pre-pandemic* (Athena).

However, schools with students who have no access to an internet connection resorted to Self-Learning Modules (SLMs). It hampered the interaction between students and teachers. In addition, it also found problems in using the SLMs. These problems included but were not limited to poor quality delivery, excessive and demanding activities, and distractions in the home environment. Nevertheless, there were also positive effects. These were the development of students' independent learning and convenience (Hoyla, 2021).

Further, as reported by National Education Technology (2016), the digital divide continued to exist between learners who were using technology actively and creatively to support their learning and those who predominantly used technology for passive content consumption. There was a clear difference between full online classes or synchronous and online asynchronous modalities. The absence of these students in the blended learning brought a difference in the modality of the coordinators' supervision practices. However, despite the technology struggles, schools devised ways to monitor teachers during distance teaching-learning. A coordinator shared:

> *During online classes, we were offline, listening. Sometimes the observer gets in the online class* (Hermes).

Still, many schools need access to or need help to be able to use technology in ways that can improve learning. Thomas (2016) argued that using technology to support learning has yet to be widely adopted by schools. Also, technological tools in management, such as computers, school websites, zoom calls, emails, *and others,* during the pandemic were used by supervisors as a channel of information (Ince, 2021). There appeared to be less supervision of people but more on managing information that needed dissemination to the whole community.

The coordinators still evaluate teachers' performance during the pandemic. It was through class demonstrations and online checking of papers. One coordinator shared that the teachers prefer to use Learning Action Cell Sessions (LAC) in class demonstrations since they need more confidence to do it online. Likewise, the coordinators' correct papers online, as claimed by some of the coordinators:

> *Class observation shifted to class demos in the form of LAC sessions. There was no class observation with students but with teachers acting as students* (Ares).
> *Teachers were not observed with actual students but with their fellow teachers who acted as students* (Perseus).
> *… we assigned them to specific classrooms just like having their own classroom and advisory class* (Hermes).
> *The giving of corrections to the teachers' papers, like modules, matrix, and TOS, during the first few months with the work-from-home setup, were done using the technology. We have Zoom calls and have the teacher share screen the document to avoid miscommunication. Even post-conference is done online or virtual* (Athena).

It was also mentioned during the FGD. It supports their claims that most seasoned teachers, even when they were good in face-to-face classes, needed help adapting to the online modality because they were used to traditional approaches. Even if some teachers had online classes since they were handling STE (Science and Technology Education) sections who had online classes, they still preferred the LAC sessions. One coordinator claimed that:

> *Although we have synchronous classes with students, we can choose what to use during observation through LAC session or the prerecorded video*

> *lesson. However, most of them prefer the LAC session for the demo. I also notice that even if they choose that, they were quite hesitant since they feel inferior to some teacher participants"* (Ares).

Othman and Mydin (2022) claimed that many teachers need more mastery of digital technology to support online and distance learning, thus requiring in-depth training on acquiring knowledge to implement the educational process. Consequently, the role of the coordinators and leaders in supervision is done online to maintain the quality of teaching by giving varied support to teachers, which includes the utilization of open educational resources online (Othman & Mydin, 2022).

Another adjustment was the communication between the coordinator and the teacher. Since they had work-from-home arrangements, the subject coordinators adapted the distance modality in supervision. It was a big challenge for everyone since not all were adept at using technology like Zoom, Google Meet, Cisco, Jitsi Meet, *etc.* During the distance supervision, the coordinators still found time to talk and communicate with their teachers online; thus, the practice of post-conference before the pandemic was continued. One of the coordinators narrated:

> *We have Zoom calls and have the teacher share screen the document (lesson plan or test questions) to avoid miscommunication. Even post-conference is done online or virtual* (Athena).

Ariffin *et al.,* (2022) believe that English teachers should maintain a social presence in online learning. Even if all their teachers had synchronous classes, they were still monitored online; coordinators check if learning still occurs inside the virtual classrooms and if the students participate in teaching-learning activities. They also did in-person classroom observation with teachers who acted as students at least once a month. With this, the teachers can practice in-person classes while doing the distance learning modality. One coordinator shared the same but noticed how they enjoyed the activity. Coming from the testimony of one coordinator:

> *We assign 5 to 6 teachers to act as students during the teacher's class demo. These teachers act according to their roles. The supervisor will assign someone to be naughty; one is the brightest, then another will act as a regular student. It could be funny, but we enjoyed doing it* (Hermes).

As stated earlier in the DepEd memorandum, it was all procedural, and the supervisory side was left hanging during the first year of the pandemic. Coordinators needed clarification about their role since it needed to be defined clearly, and the modality change required different ways of supervision. A study conducted by Fendi *et al.,* (2021) argued that subject coordinators met several obstacles in conducting online-based supervision because of the absence of standard applications provided by the governing bodies. Aside from that, the coordinators brawled in their tasks, especially when the connectivity problem came into the picture. One coordinator shared:

> *… it is tough to look at the teachers if they deliver the lesson well because sometimes the internet connection is lost or poor* (Athena).

Nevertheless, academic supervision was adequate during the pandemic by being resourceful, requiring teachers to report their teaching and learning activities using technology media, improving teachers' understanding and ability to utilize technology, and evaluating the learning process periodically. A coordinator expressed his opinion and said they tried their best to continue doing their job as supervisors:

> *It is challenging due to the fast change of modality. However, we thought of something we can still observe in classes. It goes with how the teacher discusses the lesson* (Hermes).

The coordinator experienced difficulties monitoring classes, especially the teaching-learning process. Aside from the technological tools used, the situation called for professional growth for teachers. While online or distance learning posed negative and positive implications, it called for all teachers to be trained in teaching online (Esteron, 2021).

The facilitators' struggles were the teachers' lack of ability to do online-based learning, the limited ability of teachers to impose effective learning strategies through online media, and the teachers' difficulty in finding suitable media in the online learning processes. However, the coordinators still did the coaching-mentoring to help these struggling teachers (Fendi *et al.,* 2021). Still, this event calls for education officials to rethink the processes and strategies for guiding and providing feedback to teachers during such a critical time (Giffin, 2020).

The classroom observation tool (COT)-RPMS for teachers I-III *(Appendix S)* in the time of COVID-19 used the following indicators: (1) applying the content knowledge within and across subject areas, (2) using the mother tongue, Filipino, (3) and English in teaching learning proficiently, (4) using effectively the verbal and non-verbal communication strategies to support learning, establishing a safe and secured learning environment, and (5) maintaining the fairness, respect, and care in the learning environment. The other (3) three indicators were waived (DepEd Resource, 2021). The observation tools were also modified to fit the context. Public schools also focused on non-negotiables, as claimed by a couple of participants:

> *The indicators were reduced to nine (9). Of nine (9) indicators, only (five) 5 are non-negotiable. It means it must be performed in an actual or class simulation. The other four (4) indicators are observed using different means of verification like the lesson plan and instructional materials"* (Perseus).

One coordinator supported this claim in this narration:

> *Yes, we used observation tools from the central office. During pre-pandemic, the tool had nine (9) indicators. However, during the pandemic time, the tool had only five (5) indicators* (Ares).

Some private schools had adopted the observation tools given by accrediting associations, such as the Private Association Assistance Committee the Philippine

Accrediting Association of Schools, Colleges, and Universities or the existing observation forms were modified to fit the condition. Since schools had varied contexts, the observation tools were also modified according to the situation's needs. The statements of the coordinators support this claim:

> *We have modified or changed our observation sheets entirely since the criteria would not fit anymore, that includes classroom management and others. There is the modification of the observation tool* (Athena).
> *There are just some rewordings for the appropriateness of the modality. The teachers got the tools before the observation, so they know how they will be rated* (Zeus).
> *Yes, we use the PEAC observation tool. During the pandemic, we adopted it* (Hermes).

The task of the coordinators also escalated. From monitoring, mentoring, and evaluating, they had to become technology proficient since not all of the teachers under them were tech-savvy. They obliged themselves to be at par and respond to the situation's needs. Brock *et al.*, (2021) support this claim, as they expressed that these subject coordinators and leaders needed the skills, abilities, and mindsets related to crisis leadership which was equally crucial for broad decision-making in teaching and learning. In addition, Rilliard (2020) suggested that most were adapting to the COVID-19 crisis, which involved finding solutions to different challenges. One coordinator also shared that his role during the pandemic spiraled from actual to virtual supervision.

> *During a pandemic, my role's scope is realized via a virtual platform, recorded, and scheduled* (Hermes).

The coordinators also acknowledged that to help their teachers cope with the situation, they need to step ahead and learn technical skills to assist the teachers under their care. During the focus group discussion, one coordinator shared that he had to be a phase ahead of his teachers in terms of technology utilization.

> *As the head, I felt I am more responsible in helping my teachers in ICT, and I become more aware of the tech tools to use* (Hermes).

Not all teachers were technology proficient. Most teachers needed to be more conscientiously using technology during face-to-face classes. When confronted with the unexpected health crisis and closure of physical schools, these teachers had difficulties delivering instruction using online applications and extension educational tools when schools implemented distance learning. Fendi *et al.,* (2021) claim that during the pandemic, teachers could not modernize teaching and learning processes through online media like google classroom, google meet, and Zoom and only gave assignments to students to support this assertion. The teachers who even used online meeting tools in conducting classes did not guarantee student engagement and participation since they just did lectures throughout the period. They need pedagogy to utilize different tools in conducting virtual instruction. One coordinator shared:

> *…they just do lectures when they can enrich it by technology. Like the poll, roller, wheel of names, but there are outstanding teachers who can enrich more on their instructions* (Zeus).

Aside from a lack of IT mastery, there were many students to facilitate. According to Sieber (2005) as cited by Burch (2019), the number of students in an online class was ideally 12. Another was the internet connection constraints and difficulties in explaining materials that needed *whiteboard* materials. They also observed that some teachers performing well during face-to-face classes could have been more effective during online classes. They claimed a need to train teachers' ICT skills to properly perform their duty, not just to relay information and concepts but to process information using technology. The testimonies of two (2) coordinators support this assertion:

> *There are also good teachers in the face-to-face class but have difficulty adopting the modality* (Zeus).
> *The need to sharpen teachers' ICT Skills is at its height* (Hermes).

Nevertheless, Romanes and Viniegas (2018) found that Boomers (teachers born in 1946-1964) had taught critical thinking skills to an extent due to their experiences compared to younger generations like Generation X (1965-1981) and Generation Y (1981-1995); meanwhile, all these generational groups had no significant differences in collaboration teaching. Furthermore, since this era consists of Generation Z (1997-2012), teachers are open to innovations, teamwork, project orientation, and analytical thinking (Demirbilek *et al.,* 2022). It will be an excellent opportunity to face and solve the current challenges if the leaders properly facilitate this group of educators and develop a system that combines traditional and modern teaching methods, especially language arts.

To sum up, before the pandemic, the coordinators followed policies and procedures prescribed by the DepEd and private school system and accrediting bodies. They utilized standard classroom observation tools for classroom visits which involved pop-ins and clinical and formal observations. They also provide critical feedback and monitoring of paperwork such as TOS, test papers, lesson plans, and others. During the pandemic, the coordinators faced many challenges that brought difficulties in implementing their leadership roles. Many schools adopted blended learning, while most adopted the usage of SLMs, which hampered the physical interaction between students and teachers, leading to a different way of managing and supervising.

On the other hand, the coordinators had kept themselves adept with technology in mind to help teachers, especially the seasoned ones, who had difficulties utilizing the educational and technological tools well. Even if they were seasoned teachers, they could still help young teachers develop their teaching pedagogy while being helped by young teachers in utilizing technology. Moreover, they expressed a need to heighten the ICT skills of teachers, especially in utilizing technology in a distance learning modality. They also made some adjustments to ensure classroom observations were done.

English Language Teachers' Teaching Processes Before and During the Pandemic

The teachers were greatly affected stakeholder by the sudden change brought about by the pandemic. However, they still saw this as challenging to work hard and perform their duty. Although the adaptation of technology made the experience more complex, the pandemic enabled them to realize that technology can be used together with traditional teaching methods and techniques. However, because of distance learning, academic learning has been stopped, and activities have become only a compliance of the subjects. This scenario resulted in students' poor performance in reading comprehension (Philippine News Agency, 2022) and other LAMC skills which were not attained due to the shift of learning modalities (DepEd USA, 2021).

It was known that the students before the pandemic went to class, listened to lectures, participated in classroom activities, and complied with the requirements asked by the teachers- teacher-student interaction was visible. However, during the pandemic, they did homeschool or distance learning modality. There were negative experiences because of this sudden alteration. Still, the situation allowed them to manage their learning using Self-learning Modules (SLMs) or online Learning Management Systems (LMS). They controlled their time and the amount of information they took in, given that technology and open learning resources on the internet had become their aid.

Nevertheless, the students' honesty and authenticity of work were in question. Many technological applications could be used to answer essays (i.e., AI). Although it was still a debate, it could be deduced that in the future, teaching-learning could be done anytime, anywhere because of technology. Learning could be acquired with a wide range of information from the *internet* due to the fast progress of technology.

Below are the teachers' experiences as they perform their job before the pandemic and during the pandemic period.

Before the pandemic, the teachers implemented various teaching strategies like pre-assessments, interactive discussions, Q and A activities, group work, and other differentiated activities. Language teachers also implement speaking activities, writing, and vocabulary building. Since the teachers can develop different English class activities, they observe the language literacy domains. These are listening, speaking, reading, writing, and viewing (K to 12 English Curriculum Guide, 2016).

During this period, teachers had the autonomy to use varied strategies. They shared that they had utilized various techniques to meet the needs of the learners. These approaches do not limit to the following: using pre-assessment before the lesson, interactive discussions, question and answer activities, group work, writing of reflection papers, differentiated activities, differentiated instruction, drills, speaking activities, vocabulary building, cooperative learning, Inquiry-based instruction, and others to teach the language and literacy domains. The teachers' resourcefulness and creativity greatly influenced students' successful teaching and learning process in delivering their lessons during this period. To support this, these were some of the statements made by the teachers:

> *I used these approaches- inductive learning strategy, discussion, and cooperative learning. I also believe that we should not teach grammar in isolation, so as a teacher, we should always incorporate literature in teaching grammar* (Ariadne).

> *I am in Grade 3, so they are young. It is the peak of their curiosity, so I need to be animated and prepare colorful IMs. I incorporate gamification in the teaching of language and grammar. I use gamified lessons, songs, videos, and other apps. I tried my best to let students participate even if it is online* (Demeter).

The use of gamification in teaching English gave fruitful benefits to learners. It gave learners frequent and personalized feedback, developed social learning, and increased learning motivation (Gil-Aciron, 2022). Young learners mostly enjoyed this kind of teaching technique. The teacher participants commented:

> *I also use gamification… it is interactive by nature; children are learning and having fun simultaneously* (Artemis).
> *If students love what they are doing, they are more engaged* (Artemis).

Videos and audio recordings develop listening and viewing competencies. They saw these resources' importance in teaching English as a second language. The teachers shared:

> *In listening, I played an audio story, so they listen* (Demeter).
> *I showed them videos related to the literature and let them take down notes. I gave them guide questions to know if they understood it better. The video reinforced the literature (Artemis).*
> *… as my springboard, videos, and images…* (Artemis).

Meanwhile, the teachers also found the interactive discussion, group discussion, and question-and-answer strategies effective in teaching speaking and listening skills. The teachers remarked:

> *… in every class discussion and activity, I let the students interact with me either in question-and-answer form or in a way that they will express their insights about a particular topic* (Cassiopeia).
> *I commonly apply small group discussions* (Persephone).

In developing students' reading skills, the teachers still consider the traditional ways, such as asking students to read selections and inquiring them to answer processing questions afterward. They asked students to answer them orally or to write their responses to practice their writing skills. Journal writing is an effective strategy. They said:

> *I always have a reading selection for students to hone their reading and comprehension skills integrated into my lesson…once a week, and I let students write journals* (Ariadne).

> *The literature served as a springboard. I also ask them to read ahead the assigned literary piece. The following meeting, I asked them questions… the students are given time to speak most of the time* (Demeter).
> *I usually utilize poem and reading text as my springboard* (Artemis).

Howard Gardner developed the Multiple Intelligences Theory that significantly contributed to education. It encouraged envisioning more effective teaching methods and challenged the traditional view that there was only one kind of intelligence that a standardized test could measure (Morgan, 2021). The teachers also saw the importance of looking into the students' multiple intelligences in planning and implementing classroom activities. The teachers said the students could better understand the lesson if presented in multiple ways. By doing so, more students could be reached (Heming, 2008). The statements of the teachers supported this claim:

> *If I teach literary pieces, I use strategies based on multiple intelligences. I get the data from the guidance office and group them accordingly* (Artemis).
> *… by constantly exposing the learners with varied activities* (Persephone).
> *I made sure that I considered the student's learning style in planning the day's lesson and the activities. I implemented differentiated activities to help the students learn these domains* (Andromeda).

Reading is also an essential skill for students. It may be considered one of the language literacies, but it plays a significant role in the student's academic achievement. It is said that learners who started reading at a young age have improved vocabulary, increased self-esteem, improved concentration and memory, enhanced creativity, and built critical thinking skills (Idulog *et al.,* 2023). In learning English, particularly in reading, the student's attitude can be affected if teachers display friendliness and helpfulness (Jambangan, 2015). Since it is an important skill, the English teachers did their best to help students acquire it. They assessed their reading comprehension level and gave remediation and intervention to students with poor reading skills. In assessing the students, the teachers in the public schools used the result of the Philippine Informal Reading Inventory (Phil-IRI) program by DepEd. One teacher supported this claim:

> *In public schools, we have this annual Phil-IRI assessment. From the assessment result, we identified who among the learners need intervention to develop their skills in reading along with their other skills* (Achilles).

Meanwhile, during the FGD, a teacher said she implemented Remedial Program in English. She was one of the teachers from the private schools who served for more than five years as an English teacher. She shared:

> *…we were tasked to identify students with difficulty in reading comprehension as part of our remedial program in English and reading program before the pandemic. Identifying the students is effortless since we could easily assess their reading comprehension and address these concerns* (Cassiopeia).

The current standing of the Philippines in the results of PISA 2018 and World Bank 2022 showed the country's poor performance in reading comprehension. In PISA 2018, 15-year-old students are assessed for their reading literacy. They scored 340 points, with 147 differences from the average score of 487 points in OECD countries (OECD, 2018). Meanwhile, the World Bank estimated that learning poverty in the Philippines was 90.0 percent, the percentage of children aged ten (10) who cannot read or understand a simple selection (Philippine News Agency, 2022). As observed, both assessments were done before and during the pandemic. Reading comprehension has been a problem since. According to the report, many learners struggled to learn English even before the pandemic, and the sudden shift to learning from home amidst the pandemic made the struggle even harder (DepEd USA, 2021).

The next part will reveal English teachers' experiences and struggles during the pandemic.

During the Pandemic. The health crisis had given the teachers a hard time adjusting to their work's "new" nature. Most of them became instant module developers. Three teachers shared that their work was doubled and had been greatly affected by the sudden change:

> *Our task as a teacher was doubled… because we were asked to prepare modules for modular students and at the same time, we are preparing learning plan for our online students* (Demeter).
> *…my task drastically changed from mainly an instructor to an all-around employee. I am saying an employee because I had to reproduce SLMs given by the Division* (Persephone).
> *My tasks during the pandemic greatly changed. It shifted greatly. From teacher facilitator shifted to module writer and distributor* (Achilles).

The pandemic has required teachers to work in new ways, adapt teaching styles, and become engaged with information and communication technologies (Mann *et al.,* 2020). However, it was apparent that they also needed help performing their language teacher duties. They also expressed the need for more authenticity in the students' work. It was called cyber-plagiarism in the study conducted by Olivia-Dumitrina *et al.,* 2019, which called for further training of teachers in tackling this issue. However, it was more prominent during the pandemic as students were exposed to the internet and AI applications. This statement made by one teacher relates to the challenges they faced during this period:

> *The authenticity of the students' works in their essays since there are available apps they can use* (Artemis).

Since students in public schools relied on SLMs, there was non-interaction of students, which led to teachers receiving answered modules but failing to meet and evaluate the students for validation. The immediate feedback assessment technique resulted in knowledge retention and increased critical thinking (Milton & Landon, 2019). However, this did not happen due to the physical absence of the students. One of the teachers said:

> *… since we used purely modular method, we do not have an actual face-to-face interaction with the students, this created a great impact not only in the aspect of teaching... we shifted to guided instruction thru the use of the SLMs* (Achilles).

Also, the student's reading comprehension skills were at risk during this period. Since the modality was modular, the teachers needed help to assess and follow up on how these students regarded reading skills. As one teacher manifested:

> *Not to discriminate or what, but since I am teaching in a public school, we cannot deny the fact that there are students who have difficulties in the four (4) macro skills, especially in the aspect of reading"* (Achilles).

In the focus group discussion, another teacher also shared her struggles in implementing the reading program in the school compared to pre-pandemic.

> *…during a pandemic, teachers find it difficult to assess students' difficulty in comprehension, and we failed to implement the reading and remedial program in school* (Cassiopeia).

The pandemic has impacted many learning opportunities, especially in-person interaction, and the modality change has obstructed learning pedagogy affecting teachers and learners (Kumar, 2021). Comparing their experiences before and during the pandemic, the teachers encountered more difficulties and challenges, especially in collaboration and interaction with students. One teacher shared:

> *This modality gave us limited to no interaction with our learners at all, and to be honest, this hurt the learners, especially in English language learning* (Ariadne).

Moreover, the common practice of providing various activities during face-to-face classes halted due to these changes. Even private schools have limitations in terms of connectivity, and not all students have devices for online synchronous classes. Online synchronous classes have become a way to give students lectures and reminders. However, not everybody could join due to limited resources. A teacher shared:

> *…since some students cannot join the synchronous classes, they resort to printed materials* (Demeter).

A study by Fabriz *et al.,* (2021) found that students who mostly participated in synchronous classes had experienced peer-centered activities compared to those who just relied on asynchronous activities (Fabriz *et al.*, 2021). Students who participated in the online sessions performed better than those who could not join online. The teachers shared that:

> *… as I compare the scores of those who join online sessions and those who were not, the students who join synchronous classes get the highest scores* (Demeter).

> *... since many of my students are under the poverty line and had limited access to gadgets and internet, only a select few were able to achieve literacy on the language and literacy domains* (Persephone).

Another obstacle was the connectivity problem which impacted students' motivation with their participation and attendance (Al-Hashmi, 2021). Many students preferred to refrain from joining online classes and relied on materials given by the teachers because of internet connectivity difficulties. Duran *et al.,* (2021) pointed out motivation as an essential factor in language learning. The presence of online classes did not solve the gap. Thus far, teachers have become creative and thought of more ways to help the students. They crafted additional instructional materials for exercise and practice, especially for those who were known to be struggling. Several teachers made manifestations:

> *I also give additional activities not found in the module to assess whether they have understood the lesson* (Ariadne).
> *We provided additional activities and tasks to develop their skills further, and I always provide feedback* (Achilles).
> *I also gave supplementary activities and catered to the student's queries sent online* (Andromeda).

Additionally, the challenge was limited to learning and online classroom management. It took much work to assume that students during online sessions were listening, jutting notes, or not feeling well. It made them realize that the school environment was better than their houses. These findings supported the claims of Stamatis (2021) that the pandemic has made teachers and parents grasp that the school environment can establish a field of social learning and space for social skills acquisition. Cyberspace cannot replace it (Stamatis, 2021). The change of modality had led to disruption of social life. The students had been locked at home and could not go out due to restrictions. The pandemic has hurt the psychosocial health of learners (Li, 2022). Thus, the value formation of the learners depended on the environment to which they were exposed. In this case, at their own houses. One of the participants made this statement:

> *It is tough, especially in classroom discipline. When we had the online class, students could say that they have a stomach ache; during face-to-face, we know what is happening and can easily manage them* (Artemis).

Since distance learning had an evident effect on students' learning, the teachers created ways to help and reach out to these learners who needed assistance. Despite the difficulties these teachers had experienced, they did not lose hope and foresee a positive future. A teacher shared that:

> *…during the pandemic, I was not just teaching the content; I also instill resiliency in the minds of my pupils* (Artemis).

The study by Fabriz *et al.,* (2021) showed that students, especially those who join in the online synchronous modality, received more outstanding support on basic psychological needs than students who used the asynchronous mode. Noticeably, the pandemic did not only have a negative impact. Some things happened which helped not only the students

but even the teachers. A teacher further added that she became tech-savvy. Despite the constraints, they learned how to manipulate the different technological tools to perform their duty. The following remarks supported this claim:

> *…there are great things that happened because of the pandemic. I am now a digital native. I am very good at using various tech tools and can make learning kits weekly* (Artemis).
> *I learned to be flexible* (Demeter)
> *Somehow, I became proud that I could utilize technology* (Ariadne).

When asked what practices they would carry out after the pandemic, they all answered that they would still utilize technology and intensify its integration inside the classroom. They shared that there should be a continuous giving of remediation materials and supplemental activities to the students. These were extension activities that reinforced the learned concepts. Furthermore, there was a learning gap, so the teachers saw them as essential. The participants made these manifestations:

> *The students should receive these supplementary activities since these helped facilitate learning* (Andromeda).
> *I will continue to provide supplemental online or face-to-face activities after class discussion* (Ariadne).

They also agreed that the strategies used during the pandemic still apply even in face-to-face classes. They saw the compatibility of the traditional and new mix methods for the post-pandemic period. Belias *et al.,* (2013) stated that in their study, despite the availability of traditional teaching strategies, students preferred personalized student-centered methods and recommended the said practices as accompanying tools to traditional methods. Stauffer (2022) explained the nature of "blended learning" as a strategy that uses multiple teaching methods. It is a combination of traditional classroom instruction and digital learning. Traditional instruction introduces concepts and skills, while digital learning provides additional content using technology. Several statements by the teachers relative to the applicability of the traditional and modern techniques in the classrooms are presented hereunder:

> *I use gamification. I still utilize these strategies, and I find it effective even in f2f classes* (Artemis).
> *Since we made learning possible using online, I think we should not stop utilizing the apps* (Demeter).
> *… I will carry the digitization of activities…and I think students best learn when assisted with technology during classroom instruction* (Persephone).

As the world faces a precarious future, everybody must reinvent education to help address the challenges (UNESCO, 2015). Stauffer (2022) claimed to keep the traditional teaching while learning new techniques. It called for a revisit of the curriculum and the strategies used for language teaching and learning. Although there was no need to abolish the traditional approaches, it would be better not to go away from the modern methods. After all, these traditional techniques work. Moreover, the teachers' role as facilitators of learning is still essential, though the information is available on the internet.

Supervision Styles in the Post-Pandemic Period

The instructional supervisors followed mandates and functions as autocratic and bureaucratic leaders before the pandemic. There were given rules and policies by the DepEd and private institutions to follow. The PPST, the standards of teaching LAMC, and the employee's manual were among the documents they need to refer to whenever they create decisions or assess teachers' performance. However, during the pandemic, all these were confronted. The pandemic changed the education system and their usual tasks as English coordinators (Brock *et al.,* 2021). The supervisors had no choice but to embrace more multitasking roles that were not part of their job before the pandemic. This problem was due to the need for more school personnel to facilitate logistic and clerical work, from printing SLMs to distribution and retrieval. They juggle several duties with their two hands, testing their flexibility and adaptability.

Meanwhile, technology had taken its toll when supervision tasks were seen to be a bit easier with its presence. "Virtual supervision" (Cano & Garcia, 2013) became a part of the supervisory activity where they can access anytime, anywhere using gadgets and an internet connection. Laissez-faire and democratic supervision were also seen to be effective during this period. They also take on the essential role of the teachers in helping to succeed in each endeavor of learning and to work with them as a team in creating decisions.

Below are the experiences of the English supervisors as they work on the transition from the pandemic to the post-pandemic period.

Brock *et al.,* (2021) posited that instructional coordinators are challenged while working with teachers in the virtual classroom. This setup was primarily new, so problem-solving became essential as they worked with teachers to deliver online classes (Brock *et al.,* 2021). The coordinators also recognized all the challenges faced brought by the pandemic and the changes it had posted to the education system and their tasks. Hence, they continued to remain resilient and robust.

The coordinators shared how they became flexible and adaptable due to the sudden changes they encountered; they were also exposed to multitasking activities that challenged them to be agile. Their real-life and practical training taught them to shift their mindset and improve their leadership approaches (Korhani, 2021).

> *"As a supervisor, I have to ensure that despite many obstacles during the pandemic, the learners' learning should not be affected"* (Hermes).
> *"The pandemic challenged me to perform better as an English Coordinator"* (Athena).
> *"Coordinators should be ahead of the game and flexible"* (Athena).

The additional tasks included making sure that the teachers were ready, distributed the modules, executed their teaching tasks appropriately, and that problems, as they occurred, were handled well, were just some of the things they juggled with their two hands. Moreover, they became logistics officers. They do not just enter the online class

to observe classes but also ensure that the students who chose SLMs received and returned the learning materials and that the contents of the Learning Management System (LMS) are up to date and correct. They relayed that it was not just to ensure that problems in schools would not arise, but also, they had to support the teachers as much as they could. The statements of coordinators supported this claim:

> *I needed to familiarize myself with the learning management system our school was using… for me to be a good example for my colleagues or to be a model in the online classes* (Hermes).
> *… There is the additional task of printing, counting, delivering, and collecting the modules. I oversee these things aside from my original job*; *we tried our best to distribute and retrieve these modules on time* (Ares).
> *I oriented the teachers on the changes and provided them with technical assistance for an easier transition* (Helen).

Prihatin *et al*., (2021) claimed that the teachers' performance depended on the supervision of academic leaders. If the coordinators perform well, the teachers will also do the same. It was further reiterated that academic supervision should promote awareness among the teachers and provide them with encouragement and motivation to improve their performance (Prihatin *et al.,* 2021). Another change in this period was the need to intensify communication so the teacher would adequately perform their tasks. Two teacher participants mentioned:

> *It has to be constant communication and monitoring of the teachers in all aspects…Without it, no matter how the teachers work well, absence of monitoring, nobody will validate it, and he will assume that he is doing great* (Zeus).
> *Every day, I talk to different teachers, then weekly I talk to a teacher about his/her progress* (Hermes).

These experiences made them flexible and agile leaders. It had been evident in the accounts of the English coordinators. The situation made them realize that technology had a significant role in education and supervision. Furthermore, they also realized they had to participate in this revolution. In addition, since technology is the trend, there is a need to improve internet connectivity across schools and rural areas. Teachers and learners should also accept these changes to succeed in supervision innovation (Mhishi & Gwizangwe, 2022). The coordinators revealed:

> *Technology should still be used even in post-pandemic, a mix of both* (Hermes).
> *The use of technology took its big role in the change that we will see because of the pandemic* (Ares).

Amidst the modality change, they had seen more work to do. Among them was the readiness of teachers and students to adapt to the changes brought about by the pandemic, especially in the education sector. Istiningsih and Widodo (2020) highlighted teachers' readiness in their research. *First* was the arrangement of the supervisory program, which included the supervision instruments emphasizing the use of digital

media; the *second* was the utilization of various and attractive digital media, which allowed students to become more active and creative; and *third*, the teachers' training and education program to increase their literacy in ICT. They expressed that while maintaining the practices before, highlighting technology. The situation awakened the education system to embrace technology as part of instruction and supervision, the highlight of the pandemic. They had also agreed that the pre-pandemic and pandemic modes of supervision could be carried out and combined during the post-pandemic. It underlined retaining the practices and learning materials used before and during the pandemic and combining them with educational technology in the post-pandemic (Istiningsih & Widodo, 2020). The coordinators mentioned these in their statements:

> *I think there will be a need to combine the pre-pandemic and pandemic criteria* (Athena).
> *… the same with the practices we did before the pandemic and retain the materials used during the pandemic. Like the use of technology. It should still be used even post-pandemic. A mix of both* (Hermes).
> *With the proliferation of technology and its influence on educational processes, I think it must include observation and other monitoring tools"* (Perseus).

Also, this period intensified the use of technology. It played a vital role in the delivery of instruction and supervision. It had become a tool for communication, monitoring, and observation. Coordinators also utilized it to coach, mentor, and give feedback to teachers under their care. Technology is an effective tool for supervision, but it still needs to be extensively used (Wiyono *et al.,* 2021). In addition, the coordinators needed to enrich the use of ICT in implementing instructional supervision for more effective and quality teaching-learning processes and outcomes.

In the intervening time, the coordinators saw how easier it is to work with paper works and facilitate online submissions. They also saw it as a convenient tool to validate the works of their teachers and give immediate feedback, even in a distance modality. Thus, they proposed that technology will still be utilized for supervision and teaching in implementing face-to-face classes. The coordinators manifested this:

> *Intensifying on integrating ICT in both aspects, supervision, and class observations (Ares).*
> *I have to adapt the modernization plan… for the schools to progress and to integrate the ICT to the teaching-learning process* (Ares).

Likewise, the adaptability, openness, and flexibility of differentiated and inclusivity of education were also some of the significant changes observed in this period. Inclusive education in the Philippines, as defined in DepEd Order No. 21, s., 2019, was said to be the core of the K to 12 basic Education Program. It promoted the right of every Filipino learner to equitable, culture-based, quality, and complete primary education regardless of sex, disability, ability, age, social class, culture, religion, and others (DO No. 21, s., 2019).

As observed, the pandemic has made all schools accept students. *…inclusive education could be applied post-pandemic* (Perseus). Even private schools waived the entrance examinations or placement tests. By admitting these students, it had become the responsibility of the schools to cater to them without prejudgment. Moreover, it is the responsibility of the schools to provide for the student's needs until they finish primary education. To perform this, there is a need to retool the teachers through professional development and training that focuses on addressing the needs of diverse learners. The statements of the coordinators supported it:

> *Retooling and upskilling teachers teaching skills to address learners' needs* (Ares).
> *… to refresh teachers with the English curriculum implementation during learning action cells* (Perseus).

Finally, the coordinators also recognized the vital roles of the teachers in planning and decision-making. Since they journeyed together, these teachers have experienced firsthand and can give many ideas on developing and improving policies. If the teachers offered more direct input, an innovative and sustainable educational policy would be achieved. Furthermore, without their involvement would often result in ill-conceived and nearly impossible policies (Watkins, 2022). The coordinators also shared that they must collaborate with teachers and other stakeholders. One coordinator said:

> *Teachers can also tell which is better or doable. I am very open to hearing their suggestions since I know I am not the most knowledgeable in the group* (Athena).

Since these teachers had witnessed how the students were and what their struggles were, they should be the ones to design intervention programs or extension tasks to meet the curriculum standards (Brock *et al.,* 2021). The statements of the coordinators support this claim:

> *It is more of facilitating and getting ideas from the different teachers. Everyone in the team must be involved* (Zeus).
> *I am very open to hearing their suggestions since I know I am not the most knowledgeable in the group…I am not only evaluating but also learning strategies from them* (Athena).
> *I also need to learn their teaching …* (Helen).

To sum up, the situation called on the flexibility and adaptability of the coordinators in preparing themselves for the transition from pandemic to post-pandemic. They shared the adjustments and strategies to cope with the situation's demands. Multitasking activities and the different modes of communication were used in optimum.

Moreover, they had agreed that integrating pre-pandemic and post-pandemic activities helped improve the supervision activities. They saw how vital the intensification of the usage of technological tools is in delivering instruction and supervision. It considered the value of openness, adaptability, and inclusivity in education during the COVID-19 crisis. Thus, they recognized the vital roles of teachers in planning and creating decisions for

the betterment of the supervision and teaching strategies during the post-pandemic. Effective and outstanding teaching and learning rely on teachers' leadership skills and contributions (Warren, 2021).

Teaching and Learning Processes in the Post-Pandemic Period

The teachers and students experienced firsthand the impact of the change. It has become a topsy-turvy ride for both as they adapt technology to their daily tasks as teachers and learners. However, the teacher's adaptability and flexibility helped them see the *"hope"* that teaching and learning will not stop despite the apprehensions. The limited support for learners at home and their lack of training in doing online classes, the technical problems they encountered as they prepared materials, and the different work demands challenged them to upskill themselves to be ready for the brutal battle. Technology was there to help.

Nevertheless, the teachers were still optimistic about the future of education. They expressed their readiness to embrace technology as part of the tools to help them realize their tasks as a teacher. Below are the teachers' manifestations as they describe their teaching and learning experiences during the transition from the pandemic to the post-pandemic period.

The teachers and students were most affected by the education modality change. There was an alteration in their tasks and routines to attune to the different work demands. The teachers experienced disadvantages in technical problems, limited support and resources for learners at home, and a lack of training in conducting online classes (Nikolopoulou, 2022). Nevertheless, there were also positive experiences like the learners' familiarization with technology. Because of the situation, they had to embrace the distance learning modality. They also learned to use technology and became acquainted with the different educational applications used in online classes. The teachers' narrations supported this claim:

> *Learning did not stop, and we contacted our students differently. Somehow, I became proud of myself that I could utilize technology. I can do PowerPoint presentations and place them inside the google classroom. I have learned how to make google classroom* (Ariadne).
> *My skills in using the apps for teaching and learning, like Canva and others, had improved* (Artemis).
> *All performances were recorded and sent via online platforms like Facebook Messenger or Gmail* (Persephone).
> *I saw the advantage of the pandemic for the teachers; I learned to manipulate technological gadgets* (Demeter).

Because of the unconventionality, the teachers saw the need to upgrade themselves and prepare physically, mentally, intellectually, and professionally during the transition. They saw the importance of holistically preparing themselves to adapt to the trends and the demands of the situation. It was also essential to maintain good teaching practices and not reduce the standard of learning activities even with the modality shift. It will attract

learners' interest and engagement in the activities designed by the teachers (Nikolopoulou, 2022). Below are some of the teachers' manifestations on how they will deal with the transitions as they prepare for the face-to-face classes:

> *… I will study the curriculum maps again. Although we make learning plans, I need to review my previous curriculum maps to plot the topics* (Artemis).
> *I equip myself by undergoing a series of training and seminars focusing on the teaching strategies that can be used post-pandemic* (Persephone).
> *I should be flexible with such adjustments and be back on track by preparing the necessary instructional materials* (Cassiopeia).
> *I am crafting the needed lesson logs for the face-to-face teaching (Achilles).*

The teachers also saw how important to consider the students' safety when face-to-face classes resume. Since the minimum health protocols are still in place, the teachers see themselves as a guide to ensure the virus is contained. The effects of the pandemic would take many years. It is essential to recognize that the community could bounce back and ensure equity in education for all students (DepEd USA, 2021). The teachers' primary duty is to ensure the safety of the students under their watch. This time, they had to ensure that the learners followed the policies and the minimum health protocols required and that learning should happen inside the classroom. The teachers shared:

> *I am in school not just to teach but also to ensure the learners' safety… they understand the problem we are facing right now. Just that we have to be consistent and give constant reminders* (Demeter).
> *Since there is a two-year gap, these students need to review or refresh their skills, especially in English grammar, spelling, and communication activities* (Andromeda).

The teachers also admitted how the situation affected their mental health. According to them, regular meetings and conversations help keep emotional and social support at work. It coincided with the coordinators' claim that communication is a significant factor in keeping the teachers on track. Kush *et al.,* (2022) reported that the teachers' mental health during the COVID-19 pandemic had a greater prevalence of anxiety symptoms and higher levels of distress than when they taught in-person classes. However, the DepEd recognized the personnel's mental health and well-being and launched a series of sessions for Mental Health and Psychosocial Support Services (MHPSS). The program gave lessons and tips on handling different emotions and feelings due to the pandemic. It followed the World Health Organization's claim that there is no health without mental health (DepEd, 2020). Even with uncertainties, the teachers claimed they needed to be ready for every change. In support, the teacher participants narrated:

> *The teachers also got stressed about the situation. There were symposiums about handling changes or transitions* (Artemis).
> *I am preparing my mental and physical health. The pandemic caused several changes in the mental and physical health of the teachers; slow*

> *adjustments are necessary so that we would not experience any negative effects on our body* (Achilles*).*
> *I guess I have to be ready since I know that we will prepare the classroom … I am not yet sure what the process is, but yes, I need to be ready* (Demeter).

With the implementation of the complete face-to-face learning modality in the post-pandemic period, teachers needed more self-preparation to adapt to integrating learning technologies in face-to-face settings. Aside from that, the opening of face-to-face classes prompted teachers to spend their own money to prepare the classrooms (Tagare, 2023). It commonly happens in public schools since they need more funds to support their needs as they comply with public health standards. Moreover, the two-year homeschooling made students get used to controlling their time. The long-distance education caused some students to disobey since discipline and values were not observed (Tagare, 2023). Nevertheless, the teachers still see these challenges and are ready to transition from distance to face-to-face classes. The teachers narrated:

> *I have my old and new teaching strategies so that my students do not find it hard to adapt to the academic transition"* (Cassiopeia).
> *I equip myself by undergoing a series of training and seminars which focus on the teaching strategies that can be used post-pandemic* (Persephone).
> *I prepared new strategies knowing that teaching students in this post-pandemic period will be quite difficult than usual* (Andromeda).
> *I also attended seminars to prepare myself for the new normal"* (Ariadne).
> *I am also preparing the materials that will be needed, especially during this post-pandemic. We must develop our skills now because, again, change is constant* (Achilles).

To sum up, the teachers helped themselves to be equipped with technological skills to adapt to the changes in the teaching system from pandemic to post-pandemic. During the post-pandemic, the teachers saw how technology would become a norm in education. However, most significantly, they should be prepared to integrate technology into the different teaching approaches to address the learners' needs. They also saw how mental and intellectual preparedness was needed to show their adaptability and flexibility to the new system.

The English supervisors' values and beliefs to help recreate the future

When asked what keeps the coordinators going when facing the changes and challenges, especially during the pandemic, they agreed that they felt responsible for their teachers and the learners. They believed that the teachers would perform their duty correctly with proper supervision. The higher the effectiveness of the academic leader, the better the teachers' performance. Furthermore, to intensify the teachers' ability to teach, guidance and direction from the supervisor are needed (Hakim *et al.,* 2021). It envisions that the coordinators believed in quality performance, and quality learning during post-pandemic. They inspire have a progressive mindset and become open-minded to adapt to the

changing system. They expressed their passion and love in serving and promoting good relationships and achieving eminence outputs and learnings for supervisors, teachers, and the students under their care.

When teachers perform well, students will also receive quality teaching-learning experiences. The coordinators in these narrations manifest this claim:

> *… looking at the welfare of my teachers and, simultaneously, the students are what keeps me going* (Ares).
> *I would also want the teachers in my time to be as effective as they can be* (Athena).
> *I always remember that when I have the best teachers in the department, they could also have the best students* (Perseus).
> *So that these students can get the quality education they deserve* (Hermes)
> *The fulfillment and happiness of seeing my students grow and learn simultaneously, the feeling of contentment in sharing my knowledge with my fellow teachers* (Helen).

In the study entitled "*Pandemic school leadership: Lessons learned and implications for post-COVID schooling"* by Rochon (2021), a participant claimed that observations and experiences, critical analysis, and reflections shaped his teaching philosophy and practice. The coordinators gained new experiences because of the pandemic; this harnessed their practices as leaders and teachers.

In this study, the coordinators expressed that they had a responsibility toward the teachers and students, which was evident in some of the statements made:

> *I am responsible for what they will become. If they have not learned, it is my fault* (Athena).
> *The learners deserve the best from teachers. This fuels me to continue providing technical assistance to my fellow teachers* (Perseus).
> *I wanted to do my best in my work and to influence my co-educators to improve their selves … making them an effective teacher* (Ares).
> *… great passion and compassion are the values that I want to instill in the hearts and minds of my English teachers for them to perform well and be reminded of their profession as educators of the young* (Hermes).
> *… as a teacher and supervisor, I never rely on the "bahala na" ideology. I must be prepared all the time, especially in dealing with my students, and for any uncertainty of the future* (Athena).

These beliefs were their principles and values, which had driven them to go the extra mile to serve and perform their duties, thinking of both welfare of the teachers under their care and the students. The participants also believed in *progressivism,* at the same time, wanted to impose the same mindset on the teachers. "Progressive education" in the 21st century was a phrase that helped maintain the liberation of traditional pedagogies (Lee & Tippett, 2019). To add, Allen (2020), in her article entitled "*Viewing leadership through a systems lens (in a time of pandemic),"* said that the result of the pandemic had made an

accelerating impact on every leader's actions. The message was clear that education should be moving towards modernization while maintaining the traditional standards based on the actual experiences of the coordinators. This claim is echoed in the coordinator's narrations:

> *It is my progressive mindset. When the need arises like a need to adjust, to achieve progress, everyone should take part to realize the target* (Zeus).
> *If only we are progressivist in dealing with all that matters in the educative world, then supervision could be realistic and advanced* (Ares).
> *I just follow the constructivist and progressivist belief* (Ares).
> *I envision a progressive working environment* (Helen).

The FGD highlighted the coordinators' continuous desire to provide quality instruction with technology integration. They mentioned that open-mindedness in learning, embracing technology, and imbibing 21st-century skills became essential tools to embrace the future as technology integration improved student performance (Boholano *et al.,* 2021). In addition, the teachers' productivity and ability to use technology capacitated and prepared the 21st-century learners for the Fourth Industrial Revolution (Boholano *et al.,* 2021). Furthermore, the coordinators accepted the changes in education, and that technology played a vital role. The coordinators mentioned these in their statements:

> *Open-mindedness and a learned individual. I foresee myself as a better person, filled with wisdom and ideas that I can share with everyone, especially with my teachers* (Helen).
> *… it is but natural that we embrace changes in education and play our roles well as we transition to a better future* (Perseus).
> *I want to strengthen the use of technology. We also must enhance and help teachers who are not into it* (Athena).
> *… not to be isolated from the traditional delivery of the lesson. If we teach the 21st-century skills, they must also acquire and teach the 21st-century skills* (Ares).

The coordinators also wanted to embrace technology, specifically in supervision. They said they became more efficient in performing the task since they could work on paper works, for instance, anywhere, as long as there is a computer and reliable internet connection. Moreover, instructional supervision is conducted using technologies (Boholano *et al.,* 2021). These technologies are in communication media such as Facebook, Twitter, Google, Pinterest, and Instagram. Besides, web-based tools increased the collaboration between the coordinators and the teachers (Wiyono *et al.,* 2021). As the coordinators stated:

> *… if we allow ICT modernization in supervision* (Ares).
> *English supervision would be adopting face-to-face and online observation. It would also look into the integration of technology and the ways of addressing students' learning styles and intelligence* (Perseus).
> *It is no longer possible to return to what was done before* (Athena).

> *...this time, the supervisors should include the use of technology… Technology can get the students' attention, of course, with the teacher's creativity* (Hermes)
> *… technology is strengthened for all, not only for ICT teachers. Adapting to the needs of the time* (Athena).
> *…it would become less stressful to teachers, paperless for us supervisors"* (Perseus).

The pandemic has provoked them to where they can go and what they can do as academic leaders. Their *"hope"* was connected to the future, and the *future* was nothing without hope (Hogan & Bruce, 2013). With constant communication and open lines, the *hopes* of the educators and supervisors will become their willpower to continue striving for what is best for the learners. Moreover, they see it as a weapon to update one another on recent trends and ensure that these practices will help them deliver quality instruction. The coordinators shared:

> *Many talks will be needed* (Athena).
> *Collaboration is also important* (Helen).
> *We meet and coordinate* (Zeus).

The absolute passion and love for teaching is the future primary goal of the coordinators. As said, they held themselves responsible for the teachers' and students' success. The coordinator's self-efficacy can play a moderating role, an intrinsic motivation, and a created self-efficacy in the supervisee (Su *et al.,* 2022). Furthermore, their task is to make teachers maintain their professionalism. If supervision is applied regularly, it will impact the student's learning and achievement since the teachers are the main instrument in producing high-achieving students (Yulianti, 2021). They also believed that successful supervision, teaching, and learning work wonders. Some of their future projections also include seeing themselves as mediators and facilitators. As one coordinator mentioned:

> *As a supervisor, I see myself as the mediator and facilitator* (Zeus).

The coordinators also believed that to help teachers, they must be full models of integrating technology in the classrooms. They should work hard for the teachers and students, as pointed out by two of the coordinator respondents:

> *Coordinators should also be advanced. More advance from the teachers. Supervisors should be ahead of the game* (Athena).
> *… a leader must perform because of the impact of the pandemic* (Helen).

Meanwhile, they admit that their task was not only focused on the teacher alone but on the students as well. One coordinator supported this claim in this wise:

> *…not only the teacher is the focus of the observation but will also include the students. Technology can get the students' attention, of course, with the teacher's creativity* (Hermes).

They aimed to provide both teachers and students with better ways of doing things that are products of their experience, another future projection of a coordinator:

> *… as an educational leader, I could extend both teachers' and students' limits to another level by providing them with better ways of doing things that are products of experience and research* (Perseus).

To sum up, the English coordinators' beliefs and how these helped them recreate their ideal future were already in their minds and were part of their plans as they faced the future. The coordinators claimed that teachers and students were their responsibility. They felt responsible for their success and even failures. They believed that when they perform good supervision, the teachers will teach well, and it will affect how the students will learn. They are responsible for the teacher's and student's success and learning. However, without open-mindedness, collaboration, and open communication, success will not happen. According to Geary (2020), communication gave joy and efficiency to the supervisors and teachers while they maintained a heightened level of care for one another. In the future, they still believed that *passion and love* of teaching should be the primary values of all educators to continue helping learners.

Worldview

The teachers see themselves as responsible *"in place of parents"* or *loco parentis* to the students. They believed in the essential roles they play in helping learners achieve their dreams and aspirations in life. They expressed their commitment and love towards their job and the students and aspired to be a good influence. They also hope to give them better education and see them globally competitive with the English language as their tool to succeed. In the broader scope, the teachers see themselves as a responsible individual who can help produce global citizens. They did not lose hope that there was a great future ahead for the learners.

Below were the teachers' manifestations of how they see themselves as teachers and what values and beliefs helped them reimagine ideal futures for English language teaching and learning.

These beliefs, practices, and attitudes were significant in understanding and refining educational progressions (OECD [Organisation for Economic Co-operation and Development], 2009). In the constructivist view, students were not passive learners but active participants in teaching and learning. Teachers who believed in this view effectively facilitated students' inquiry skills, problem-solving skills, and active participation in instructional activities (OECD, 2009). Moreover, the teachers' *"quality"* determined the gains in student achievement (Guerriero, 2014). The teachers who participated in this study were optimistic for the future. They expressed their love of their work and their students. Love and passion fueled them to continue their job despite their challenges during the pandemic. Further, a new social contract for education was needed to allow them to think differently about teaching and learning and the connection between

learners, information, and the world (UNESCO [United Nations Educational, Scientific and Cultural Organization], 2015).

Presented with challenging roles and new tasks to meet the needs of the learners and, at the same time, following the policies given by the DepEd, the teachers were asked what kept them doing their job. These were the statements made by some of them:

> *I love my job. That is the only principle I have now as a teacher* (Demeter).
> *My passion for teaching and molding the students into becoming efficient citizens in the community* (Andromeda).
> *… no money can be equivalent to the student's learning"* (Achilles).
> *That inspires me to do more and be more for them. I want to be a teacher that has an impact. A tea her that influences them to be the best version of themselves* (Ariadne).

The teachers had also seen the importance of their role in the lives of their students. They believed that by doing their best, they could help learners achieve their goals in life, and seeing them succeed was also their achievement. The teachers' roles towards students affected the achievement and motivation of the learners. These roles will depend on the situation. Sadiq (2020), in her study entitled "*The impact of the teacher's role on students' achievement and motivation in ESP teaching*," stated that the teacher could encourage and motivate learners for students to reach better learning in English for Specific Purposes (ESP).

Teacher excellence matters to students' achievement (Sirait, 2016). They manifested that their roles to the students were more than just a lecturer, following the term *"loco parentis,"* which meant *"in place of a parent*," which applied to all teachers toward their students (Mohammed, 2014). Some of the teachers attested to this:

> *I believe this serves as my extended family that I need to be responsible for and make sure they did not just enter to learn* (Cassiopeia).
> *… our job is to give the learners the education they deserve no matter what the change and trials may come both in the education system and our personal lives as teachers* (Achilles).
> *I believe that we teachers need to help our students and future generations to become better individuals* (Persephone).
> *… it is my utmost happiness to see my students learn something from me* (Ariadne).

It was also evident that even if they saw and experienced the problems during the transition firsthand, they were hopeful for the future. This future gave them "hope" to envision successful teaching and learning, especially in English. Moreover, the teachers interviewed wanted to share the success of the education system and the students. The following statements supported their hopes:

> *I hope to see globally competitive individuals as a product of successful English language teaching* (Andromeda).
> *I hope English and the learning process are more in tuned with what is in the grassroots* (Persephone).
> *I am hoping that there will be a low rate of readers with no comprehension and that students will master the basic rules of grammar (*Ariadne).
> *I hope someday there will be no more learners who will have this kind of struggle because this will greatly impact their learning and future* (Artemis).

They were also optimistic about the success of the country. They expressed how they look forward to the betterment of the nation, which was why they work hard for the learners. They always take everything positively, especially the technology integration into teaching and learning the English language. Adequately harnessing technology integration into teaching ensures effective teaching-learning (Nikade, 2022). Moreover, they also anticipate seeing their students take the lead and become responsible citizens. The teachers' statements supported it:

> *I can see that there will be a great future for English language teaching. It is because the English language has now come to the point that it became like a necessity, especially for workers abroad or internationally* (Achilles).
> *… soon, the Philippines will be a major English-speaking country that can produce proficient and well-equipped teachers that can compete globally* (Ariadne).
> *I also firmly believe that effort produces achievement* (Achilles).
> *I believe that we teachers need to help our students and future generations to become better individuals* (Persephone).

To sum up, the teachers simultaneously expressed love and passion towards their work and students. This love kept them going, seeing hope for the nation. They saw themselves as responsible for the learners' futures and their capacity to create a good one for these students. They are optimistic about the country's global scenario with English proficiency and have projected that they could produce globally competitive individuals through their passion and love. They believed that they will serve as the *light* of students' paths. Thus, the bright future for students and the English teaching-learning process is *in their hands*.

Metaphors. Metaphors were popular with researchers to explain phenomena that included change. However, these metaphors can only help represent the continuous and shifting of progression (Rogerson, 2021). The metaphors are the unconscious awareness of deep stories as bases of sense or logic (Inayatullah *et al.,* 2016), a representation, identity or dissertation (Bussey, 2008).

The following sections presented the derived metaphors of English coordinators and teachers that support future supervision and teaching as they face the post-pandemic period. The metaphors were arranged where the most prominent or preferred lived futures

were seen in the first part then followed by the rest, these signify the supervisors' and teachers' ideal futures.

Metaphors Developed to Support the English Language's Future Supervision

Metaphors are deep stories and emotive dimensions. This level provides an emotional experience. At this level, it is said *"We do not make predictions but give alternatives to shape the future"* (Inayatullah, 2017). It is also far more explicit and subjective compared to the other levels. Moreover, narratives give power and effect to all CLA levels (Milojevic & Inayatullah, 2015).

This section presents the English coordinators' metaphors as to how they see the future of supervision in English teaching. The associated meaning and the significant statements from the interviews also supported the myth or metaphors of the coordinators. It will be followed by a narrative of the most preferred future of English language coordinators- ***an exam, a test****.*

An exam, a test. Supervision is associated with the policies and procedures to follow when taking an exam, or when the results came in, there is a need to do something with the outcome based on the standards. It came from the statement, *"I can compare it to an exam or test, which is a procedure to establish the quality and performance of one's knowledge."* It established that supervision was like an exam with ratings based on the standards. The manner of evaluation will be more straightforward because of the ideals.

A laptop. Supervision is associated with an upgraded supervisor. It came from the statement: *"I see myself as a device, probably a laptop. Like laptops, coordinators need to be upgraded for technological skills to adapt to modernization. A laptop has specifications and brand; an upgrading is done regularly to stay attune to the demand of the market."*

A bird. Supervision is associated with an animal flying high like a bird. This statement explained it further: "*English language supervision is something like going up because of the fast-changing approaches, strategies, and standards, to meet the demands of society."* The changes demanded creativity, and the coordinators played an essential role in overseeing and solving problems.

A mobile phone. Supervision is associated with supervisors having appropriate specifications and having the capacity to supervise. It was explained further by the statement: *"It keeps upgrading itself with added features".* The coordinator's skills need to be adaptable, open, and flexible to changes, like a phone which always needs upgrading to cater to society's needs.

The internet. Supervision is associated with a responsive, dynamic, and active leader. It was explained through the statement: *"It is evolving, dynamic, and integrating because from time-to-time supervision changes to suit the primary needs of the clients."* The coordinators had to be flexible and adaptable to changes brought about by the pandemic.

When asked to suggest more metaphors that describe supervision in the future, the participants gave the following: (a) *a blueprint for a building,* (b*) a correctional eyeglass* to see the reality, and (c) *an oil lamp* to light the path as they journey to the new normal. These ranked metaphors came from the coordinators' interviews.

Alternative Future #1: *An exam, a test, the metaphor for instructional supervision.* Instructional supervision is associated with the policies and procedures to follow when assessment results are utilized; gaps can be identified and addressed through its results. It came from the statement, *"I can compare it to an exam or test, which is a procedure to establish the quality and performance of one's knowledge."* It established that supervision was like an exam with ratings based on the standards. The manner of evaluation will be more straightforward due to the ideals.

Because of the changes that happened due to the COVID-19 pandemic, the English supervisors observed many changes, especially in the performance of their tasks. They used traditional observation forms and collected and checked printed lesson plans, test questions, and curriculum maps. They follow protocols based on the mandates of the DepEd or the policies and regulations for private institutions. They can quickly call teachers' attention, see personally what happens inside the classroom, give teachers feedback, give reminders and check on their teaching performance. However, when the shift of modality happened, there were usual supervisory tasks that were, if not difficult, impossible to perform due to the lack of interaction. Some activities, like class observations, were done out of compliance and not to check whether the teaching-learning process had accomplished its intended goals. With this, it is a call for the authorities always to include regular evaluations/ tests to check whether the current practices are still applicable in this fast turn of events (Khaef & Karimnia, 2021).

Deepening: *Examinations/tests.* These educational measurements facilitate formative, summative, or even diagnostic evaluations (Kolanchery, 2015). If put in the context of supervision, test or exam results can be used to assess the effectiveness of existing mandates and policies being issued by the Department of Education and private institutions. It is to find out what suits best and what not. It is to align supervisory practices to the current set-up. Thus, having the process of evaluation help in the planning process to describe whether supervisory programs being implemented still operate and if these can still be carried out to achieve successful instructional supervision (Bailey, 2006).

Figure 4, shows the "futures" of English Supervision grounded on the metaphors given by the respondents. In this portion, the researcher co-creates the future of supervision in a form of illustrations for creative visualization to develop a vision (Inayatullah, 2013) in the duration of five and 10 years. It aims to help decision makers shift their mindset, meeting where they are and where they can go using the change progression approach (Inayatullah, 2013).

Figure 4 *The futures of English supervision.*



Present ideal future: An exam/a test



After 5 years: A first-aid tool kit



After 10 years: AI generated

Since the ideal future involves standards and changes due to evaluation and assessments, the English supervision can also be seen as a *first-aid tool* to amend the reparations caused by the impact of the pandemic in the educational system for the next few years. This involves the diagnosis of policies to see much broader aspects for upgrade or rehabilitation, as they look for medications that can cure all mishaps and address challenges with appropriate skills and dynamic leadership (Villegas & Garcia, 2022). Computer or technology had given much help in the performance of the supervisors during the pandemic. Thus, the adaption of ICT (Singh *et al.,*2021) in the supervision leads to an ideal vision of using artificial intelligence to aid English supervisors or coordinators into more advanced directives in supervising teachers in the teaching and learning process.

Metaphors Developed to Support the English Language's Future in Teaching and Learning Process

This portion presents the English teachers conceived teaching-learning practices**.** During the FGD, the teachers ranked the metaphors from their interviews. These were presented with the associated meanings and the significant statements from their answers. These metaphors were ranked based on their most preferred "lived future." It is followed by a narrative about the most preferred future of teachers in terms of English teaching and learning- ***a globe****.*

A globe. Teaching is associated with making learners use English globally. The statement elaborated: *"I am an English teacher; I can communicate with people around the globe."* In addition, learning the English language will help learners connect worldwide.

A seedling. Teaching is associated with caring and meeting the learners' needs. It was explained by the statement: *"…a seedling grows and improves when given the proper*

care and the needed nutrients to sustain its life and growth. This is true with English language teaching; it evolves and improves as time passes by, with the help of effective and efficient educators in the field." Moreover, an influential English teacher works hard to sustain and help learners grow.

A pen. Teaching is associated with engraving knowledge and skills in the learners' minds. It was explained in the statement: "*It symbolizes knowledge because you can write anything you know. As a teacher, it is my role to impart knowledge. Without the pen, we cannot function as a teacher or function as a student."* Further, the learners inscribed and retained the lessons to be used in real-life situations.

A plane. Teaching is associated with regular checking and maintenance. As it was said: *"…which has reached the sky and now soaring high but still needs to land to check for problems and maintenance."* A learner cannot fly high like a plane when the wings and engines (English) are not checked and fixed.

A glass. Teaching is associated with frail and fragile learners. This is explained in this statement: *"It will depend on who handles the glass. If you are not careful, it might break. The future of English teaching will depend on the teacher handling it. If the teacher herself is slacking, students will not learn. Coordinators as well, if they do not know how to handle the teachers, they will also break like glass."* English teachers must deliver the lesson effectively. Given that learners are human and have emotions, it will also be the same with the teachers. The coordinators should also handle the teachers well.

A business. Teaching is associated with industrialization. This statement finds support with this narration: "*English is used worldwide. The English language is not for conversational purposes anymore, but it is now widely used in business and other professions."* If there is a demand for skill in language use, teaching it should also need to flourish.

A clock/time. Teaching is associated with time and effort. The statement: *"It also reminds us that time is a limited resource, so we should use it wisely and productively,"* is a matter of fact. Due to the fast-changing environment, teachers must be resourceful and use instructional time productively.

When asked to suggest more metaphors that describe English teaching in the future, the participants gave the following: (a) *a key* that opens opportunities, (b) *an outdated operating system (OS)* of a phone that needs an upgrade, (c) *a rubber band*, elastic, flexible, and can bounce back, (d) *a plant* to be taken care of, given attention and be loved, (e) *a gavel* to call the attention and to put an order, and (f) *a pencil* to draw one's future.

Alternative Future # 2: *A globe. An English teaching and learning metaphor.* Teaching is associated with making learners use English globally. The statement elaborated: *"I am an English teacher; I can communicate with people around the globe."* In addition, learning the English language will help learners connect worldwide. This supports the

claims of Ngole & Mkulu, (2021), Ayandoja *et al.,* (2017), Oguta *et al.,* (2019), and Kipruto, (2009), that teachers' efficiency can affect students' performance, effective English teachers can harness the learners' communication skills, thus making them globally competitive individuals.

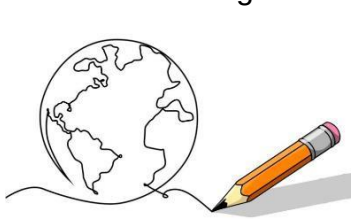
"English rules" is a line suggesting the universality of the language (Crystal, 2003). Needless to say, English is a lingua franca, which most native and non-native speakers use for business communication (Rao, 2019), including Filipinos. The English teachers saw the importance of teaching the subject so learners could communicate with people worldwide. With the advent of advanced technology, the world has become smaller as people can connect using different social media platforms. It has become evident when the pandemic struck. Because of lockdowns and the closure of physical schools, *virtual schools* opened. Online classes and distance learning were done worldwide, allowing schools to accept international students. However, Karkar-Esperat (2018) claimed that international students' proficiency in the English language was essential for success and satisfaction in an online class.

Deepening: *A globe.* A miniature form of the earth - an earth where people live ideally in harmony and unity. It can also be related to globalization, that stated all people would become citizens of a *global village.* Moreover, due to the rise of information technology, interconnectedness, and a unified world can be possible (Meurs *et al*., 2011). In this study, teaching and learning English was compared to a globe, the living planet, recognizing English as the language that fixes barriers, a learned language by many, a tool in building businesses, building relationships, and promoting peace and harmony. English as a second language cannot be learned if the English teachers will not find appropriate teaching strategies and techniques suitable to the needs of the learners. Since English is the communication medium worldwide, teachers must ensure that the imparted knowledge and skills are practiced in school and real-life situations. These teachers need the efficacy and skills to do these tasks efficiently.

Moreover, teaching English is a task that requires time and effort (Kwee, 2022). A teacher should be resilient, creative, and resourceful (Suarez, 2022). Thus, English teaching should open opportunities, upgrade the learners' skills and talents, make learners flexible, give consideration and order (Satharatthana, 2021), help *draw* one's future, and show love and care to mold young people.

Figure 5 shows the futures of English teaching and learning. In this portion, the researcher co-creates the future of English teaching and learning in a form of illustrations for artistic picturing to develop an image (Inayatullah, 2013) in the duration of five and 10 years. The results are constructed with the support of the metaphors provided by the teacher participants.

Figure 5
The futures of English teaching and learning.



Present ideal future: A globe



After 5 years: a Roblox



After 10 years: the Metaverse

English is a global language, used for communication and to promote globalization. The English teachers has described their ideal future with a metaphor of a globe. They see the importance of their role in producing globally competitive individual and assumed the responsibility of also becoming one. Teaching through gamification came out from the narratives of the participants. This has led the researcher to foresee English teaching as a game in the concept of *a roblox*, an online game platform and a game creation system that allow players to plug-in tournaments or enjoy ready-made events. This context is the same with how the teachers manipulate technology in the classroom, frontal or virtual set-up (Stauffer, 2022), to make learners become engaged, participative, contributing and active while learning the language (Fabriz *et al.,* 2021). Since technology took its pivotal role of the changes, the teaching and learning can become *the metaverse*, a digital space that uses advanced technology and making internet as a single universe where learners meet from across the globe using virtual and augmented reality.

The CLA of English supervision and teaching and learning process

Based on the participant's responses in the fourth layer of CLA (myth/metaphor), there can be profound stories, poignant dimensions of problems, or paradoxes that elicit visual images; in this case, the two (English Instructional supervision and Teaching and Learning) are compared by the researcher to *"international standards".* Using the participants' narratives to unpack the desired future, the researcher devised a metaphor describing the alternative future for English supervision and the teaching and learning process. However, it is less concerned with the particular future but with opening spaces to expand the scenarios presented (Inayatullah, 2005).

Deeping: *International standards.* Both instructional supervision and English teaching and learning can be compared to *international standards*. The metaphor that resonates the most revealed that instructional supervision is an exam/a test, foreseeing supervision has regularly assessed standards to see if the functions fit the current set-up. At the same time, English teaching and learning is a globe.

International standards are a document developed with the consensus of experts from different countries and are globally approved and recognized (Shandu, 2022) for sustainable development. Samples of this are ISO standards. These standards should be based on the results of experiences and results of science, especially during the two-year educational gap brought on by the pandemic.

Conclusions

The combined results accepted the assumption of this study that the supervision and instructional techniques used during face-to-face classes and distance learning diverged. This assumption influenced the implementation of the curriculum and the student's performance in English. Moreover, it acknowledged that the past and present practices helped determine the *ideal alternative futures*. Based on the results, the following conclusions are advanced:

1) The English Instructional supervisors saw their alternative future in the course of *an exam or a test*. In the next five years, it can become a first-aid tool kit, and after then, it becomes an AI-generated supervision as it faces innovation.

2) The English teachers saw their alternative future as *a globe,* using English as the tool for progress and innovation. The teachers' efficacy and efficiency in the use of language will help learners acquire the Language Arts and Multiliteracies Curriculum skills for them to become global citizens- able to communicate, build relationships and propose development around the globe. In the next 5 years, it can become a "Roblox", which will bring all teachers and learners all together through a play (centralized teaching-learning); as soon as it becomes successful, the teaching and learning will become possible in the metaverse, an ideal future world using technologies with the use of virtual reality.

3) The future of supervision, teaching, and learning can be gleaned in a collective metaphor *"the international standards".* These standards are based on the results of experiences and results of science and research during the pandemic. Such metaphors can become the basis for open discussion and might help foresight practitioners for individual research or workshop settings (Simone, 2004). This can lead to the *"school of virtual reality",* where AI- generated (supervision) and *metaverse* (teaching and learning) play an explicit role in supervision and the teaching and learning process.

Recommendations

Based on the summary of findings and conclusions presented, the following recommendations are drawn:

1) The Bureau of Curriculum Development should continue the initiative to revisit the Language Arts and Multiliteracies Curriculum standards to check its relevance to the current changes brought about by the shift of modalities and to accelerate the delivery of the curriculum. They should also update policies that give clear direction to English teaching and learning supervision and on the upskilling of instructional leaders and teachers with proper and appropriate technology integration that suits their needs today and in the future.

2) The English supervisors should include the Information Technology (IT) infrastructure as the foundation for seamless operation which will be embedded in the Supervisory Program. Likewise, in coordination with the guidance office, regular Social-emotional learning (SEL) activities and programs that address and help the different stakeholders understand the role of technology and social media platforms in language learning should be made.

3) The English supervisors should continuously work together with the English teachers in creating academic programs such as remedial and enrichment activities to assess, help, and provide an extension of learning, especially in the acquisition of reading skills and other competencies found in the Language Arts and Multiliteracies Curriculum by utilizing effective and suitable strategies, techniques, and technology.

4) The school's English department should strengthen the vertical articulation of English subjects from kinder to senior high school to identify gaps and fill these breaches through instructional-related programs created by the team.

5) Future researchers should engage in studies to help schools, academic institutions, and other establishments improve and see their ultimate path to progress, addressing current problems and re-creating transformative spaces of alternative futures.

Compliance with Ethical Standards

The researcher ensured the respondents' participation was voluntary and free from threat or prejudice. All the participants were given an informed consent form and asked to sign it if they agreed to participate in the study. The informed consent contained relevant information about the study and was read to the participants before the interview. Since the interview was recorded, permission was asked from the participants before clicking the record button. No other questions far from the purpose of the study were asked aside from the prepared queries, and if the questions were replaced or rephrased for clarification, they were still about the main point of the interview. Participants were also guaranteed privacy and confidentiality, so their real names were not used; a pseudonym was given to them even during the interview. The raw data were kept confidential and can

only be accessed by the researcher. The data will be deleted three (3) years after the study's publishing date.

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PRODUCTION AND ACCEPTABILITY OF PINEAPPLE *(Ananas comosus)* AND BANANA *(Musa acuminata)* EXTRACT IN MAKING VINEGAR

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ABSTRACT

This study explores the production and acceptability of vinegar made from pineapple *(Ananas comosus)* and banana *(Musa acuminata)* extracts. Using overripe bananas and pineapples, three types of vinegar were prepared: banana vinegar, pineapple vinegar, and a combination called "Two Seasons Vinegar." The fermentation process involved combining fruit extracts with sugar and yeast, followed by a two-week fermentation period. The final products underwent sensory evaluation by 120 respondents, including residents, school staff, students, and food experts. Evaluations focused on sourness, aroma, color, appearance, and overall acceptability. Results indicated that Two Seasons Vinegar was the most preferred due to its superior taste and highest acetic acid content. This study concludes that pineapple and banana are promising raw materials for vinegar production. Recommendations include scaling up the production of Two Seasons Vinegar, expanding future research to include a larger respondent base, and investigating its nutritional benefits and market potential.

Keywords: *Banana, Fermentation, Pineapple, Sensory Evaluation, Vinegar*

INTRODUCTION

Vinegar, a versatile and ancient condiment, is produced through the fermentation of ethanol, resulting in its key ingredient, acetic acid (ethanoic acid). The concentration of acetic acid in vinegar typically ranges from 4% to 8% by volume for table vinegar and can reach up to 18% for pickling (Johnston & Gaas, 2006). Beyond acetic acid, natural

vinegars contain small amounts of other acids, such as tartaric and citric acids, which contribute to their complex flavor profiles (Budak et al., 2014). The term "vinegar" derives from the Old French "vin agre," meaning "sour wine," reflecting its historical use and production from fermented grape juice (Mazza & Murooka, 2009). Vinegar has been a staple in culinary traditions worldwide for thousands of years, prized for its acidity and flavor-enhancing properties (Tesfaye et al., 2002).

Vinegars are unique among condiments due to their acidic nature and can be broadly categorized into grain and fruit vinegars based on their raw material sources (Gullo et al., 2018). Both grain and fruit vinegars, when fermented using traditional methods, exhibit a range of physiological functions, including antibacterial, anti-infection, antioxidant, blood glucose control, lipid metabolism regulation, weight loss, and anticancer activities (Budak et al., 2014; Solieri & Giudici, 2009). These health benefits are primarily attributed to the acetic acid and various bioactive compounds present in vinegars (Tesfaye et al., 2002; Xia et al., 2018).

Vinegar is renowned for its healing properties, including treating yeast infections, lowering blood sugar levels, aiding digestion, and soothing insect bites (Johnston et al., 2004). It is also widely used as a natural cleaning agent due to its antibacterial properties (Johnston & Gaas, 2006). However, while vinegar can offer numerous health benefits when produced and used properly, it can also pose risks if consumed inappropriately (Budak et al., 2014). For instance, "artificial" or "commercial" vinegars, made through chemical processes, contain synthetic acetic acid, which can damage tooth enamel if consumed undiluted and may lead to other health issues such as potassium imbalance, allergic reactions, and gastrointestinal irritation (Shimoji et al., 2002; Solieri & Giudici, 2009).

The production of vinegar for mass consumption poses significant challenges, especially concerning the use of synthetic acetic acid. According to a study by the Philippine Nuclear Research Institute (PNRI), 15 out of 17 brands of vinegar sold in major supermarkets in the Philippines were found to contain synthetic acetic acid, a by-product of petroleum, which could potentially cause diseases, including cancer (Sucgang et al., 2019). Synthetic acetic acid is not suitable for food consumption due to the presence of impurities that may pose health risks, including degenerative diseases like Parkinson’s (Sucgang et al., 2019). Instead, these synthetic compounds are intended for industrial uses, such as producing vinyl acetate for waterproofing wood products (GMA News Online, 2019).

Given the alarming side effects of synthetic vinegar, there is a pressing need to develop alternative, healthier vinegar options for safe consumption. This underscores the importance of producing vinegar from natural ingredients such as fruits and vegetables (Solieri & Giudici, 2009). Consequently, this study aims to explore the production of organic vinegar from fruit extracts, specifically from banana (Musa acuminata) and pineapple (Ananas comosus), which are widely available in the Philippines.

Organic vinegar, made through a biological process utilizing Acetobacter aceti bacteria, is a superior alternative to synthetic vinegar. It retains essential amino acids from its fruit sources and is reported to possess medicinal properties, aiding in digestion and alleviating gastric troubles (Johnston et al., 2004; Tesfaye et al., 2002). Organic vinegar offers numerous health benefits, including improved digestion, reduced inflammation, strengthened immune function, and enhanced nutrient absorption (Budak et al., 2014; Xia et al., 2018).

Bananas and pineapples are abundant in the Philippines, with significant production in regions like Davao del Sur, North Cotabato, South Cotabato, and Bukidnon (Philippine Statistics Authority, 2014). In Isabela and Quirino, bananas are extensively grown in municipalities such as San Pablo, Benito Soliven, San Mariano, San Guillermo, Jones, and San Agustin. Pineapples are cultivated in areas including Isabela, Nueva Vizcaya, and Quirino (Philippine Statistics Authority, 2014). Despite their availability, the potential of these fruits in vinegar production remains underexplored, largely due to consumer preference for cheaper alternatives and the lengthy fermentation process required for natural vinegars (Gullo et al., 2018).

This study seeks to address these challenges by investigating the feasibility of combining banana and pineapple extracts to produce vinegar. This approach not only promotes the use of locally sourced fruits but also presents an opportunity to create a value-added product that could serve as a promising business venture in the Philippines.

Research Questions

The study was conceptualized to determine the feasibility of utilizing banana *(Musa acuminata)* and pineapple *(Ananas comosus)* fruits as raw materials in the production of two seasons of vinegar and test its acceptability through sensorial evaluation.

To achieve the specific objectives set within the main purpose of this study, sought to find answers to the following key research questions:

1. What are the processes for preparing banana and pineapple extract in making vinegar?
2. What is the potential advantage of the produced vinegar in terms of nutritive value?
3. What is the degree of consumer's acceptability via sensorial evaluation of the produced vinegar in terms of:
   a. sourness or acidity;
   b. smell;
   c. color; and
   d. appearances?
4. Is there a significant difference in the acceptability of banana vinegar, pineapple vinegar, and the two seasons of vinegar (a combination of banana and pineapple)?

METHODOLOGY

Developmental Procedure

This study used banana (*lakatan*) and pineapple fruit extract, a Philippine variety. The production procedure began with selecting over-ripe banana and pineapple fruits which were extracted. After the extraction of the fruits, the preparation for vinegar making comes next. The process is shown in Figure 1.

Preparation of Banana and Pineapple Fruit for Extraction

The preparation of banana and pineapple fruit extraction starts with sorting/selecting, washing, storing the banana for two weeks, slicing the pineapple into chunks, extracting the pineapple with a blender, and sifting the extract with a clean cloth. After two weeks, the banana is squeezed with a cloth for extraction.

Preparation of Fruit Extracts in Making Vinegar

Measure ingredients- banana extract, pineapple extract, yeast, and sugar. For the individual vinegar, combine 5 cups of banana with ½ cup sugar and ½ tsp yeast so as with the pineapple extract. For the combination of banana and pineapple, (Two Seasons Vinegar) combine 2 ½ cup of banana extract, 2 ½ cup pineapple extract, ½ cup sugar, and 1 tsp. yeast. Stir with a wooden spoon. Cover and ferment for two weeks. After the fermentation period, strain it with a clean cloth. Bring into heat. Do not boil. Let it cool and transfer it to sterilized bottles. Pasteurized the bottles. Label them and store them.

Materials

Table1. Tools and Utensils Used in the Conduct of the Study

Preparatory tools	Cutting tools	Measuring tools	Storing tools	Sensory evaluation tools
Glass container	Sterilized knife	Weighing scale	Bottles	Plastic spoons
Chopping board	Blender	Measuring cups	Jars	
Cheesecloth		Measuring spoon		
Rubber band				

Ingredients

Table 2. The Proportion of Ingredients in the Preparation of Banana and Pineapple Vinegar

Banana Vinegar	Pineapple Vinegar	Banana/Pineapple or 2 Seasons Vinegar
5 cups banana extract	5 cups pineapple extract	2 ½ cups banana extract
½ tsp. yeast	½ tsp. yeast	2 ½ cups pineapple extract

½ cup sugar	½ cup sugar	½ tsp. yeast
		½ cup sugar

Legend: c- cup tsp- teaspoon

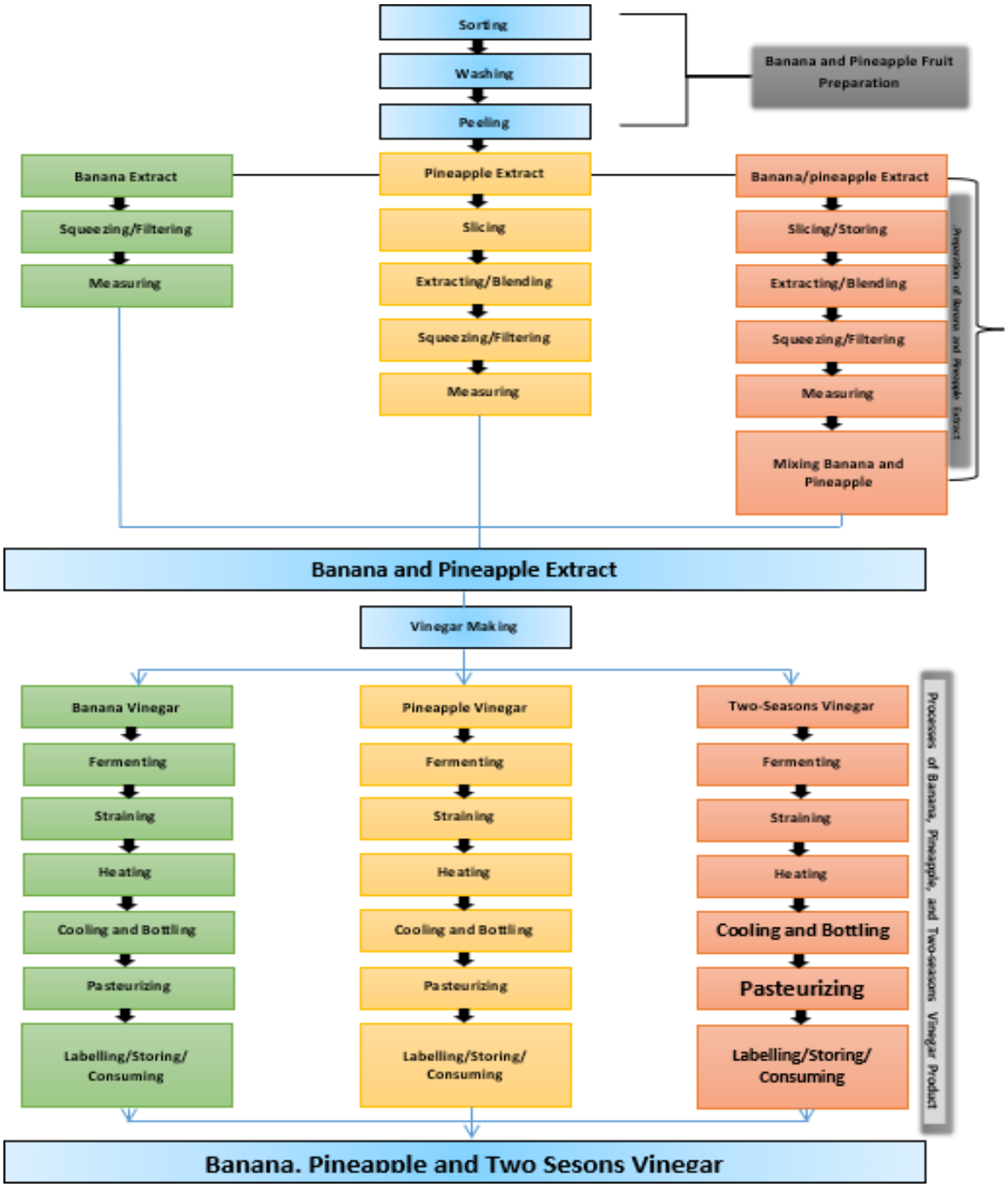


Figure 1. The Flow Diagram of the Study

Sensory Evaluation

The completed products were subjected to sensory evaluation. One hundred twenty (120) respondents were selected and classified into three groups: The households of Villanueva, San Manuel Isabela, faculty, staff, and students of Callang National High School, and a group of food experts. The respondents were appropriately oriented on what and how to evaluate the products using the given sensory evaluation sheet. The samples were arranged and evaluated.

The respondents were asked to taste and smell the sample from each container of the given vinegar samples. Data on the sourness/acidity, smell, color, appearance, and general acceptability of each sample were collected and tabulated for statistical analysis.

The tool for data collecting was a score sheet using a qualitative analysis method to determine the acceptability of the vinegar products. The responses to the level of the vinegar sample in terms of sourness/acidity, smell, color, and appearance were collected using the five-point Likert scale and given weight as shown in the table.

Table 3. The Range Numerical Rating and its Equivalent Descriptive Rating

Numerical Rating	Descriptive Rating
4.21 – 5.00	Like very much
3.41 – 4.20	Like moderately
2.61 – 3.40	Neither like or dislike
1.81 – 2.60	Dislike moderately
1.00 – 1.80	Dislike very much

RESULTS

Product Evaluation

Table 4. Total Acetic Acid of the Vinegar Samples

Sample Description	Result (g/100g)
Banana Vinegar	2.08
Pineapple Vinegar	0.67
Banana/Pineapple Vinegar	2.13

Table 4 shows the acid content (acetic) of the three vinegar samples. The results were obtained through the Titrimetric method which determined the amount of acetic acid present in the three (3) vinegar samples. Banana vinegar contained 2.08g of acetic acid in 100g of the given sample, pineapple vinegar contained 0.67g of acetic acid in 100g of the given sample, and the two-seasons vinegar (Banana and pineapple) contained 2.13g of acetic acid in 100g of the given sample. Based on the results of the acetic test on the

three samples, it can be said that the two-season vinegar is the most potential vinegar product as it contains the highest value of acetic acid.

Table 5. Nutritive value of Two-seasons vinegar (Banana and Pineapple) Sample

Analysis Name	Result
Ash	0.78 %
Crude Fat	<0.10 %
Crude Protein	0.71 %
Moisture	74.91 %
Sodium (Na)	13.71 mg/100g
Calories from Carbohydrates	94.40 kcal/100g
Calories from Fat	<0.90 kcal/100g
Calories from Protein	2.84 kcal/100 g
Total Calories	97.24 kcal/100g
Total Carbohydrates	23.60 %

As to the nutritive value of the two-season vinegar, Table 5 shows that *Ash content* was at 0.78%, *Crude fat* content was at less than 0.10% which is the minimum detection limit, *Crude protein* was at 0.71 %, moisture content was at 74.91 % and the sodium content was 13.71 mg of the given 100g of the sample.

For calorie content, calories from carbohydrates was 94.40 kcal/100g, calories from fat was less than 0.90 kcal/100g, and calories for protein was 2.84 kcal/100g. All in all, the total calories of the vinegar sample were 97.24 kcal/100g and the total carbohydrate content was 23.60 %.

Table 6. Nutritive Content of Produced Banana and Pineapple Vinegar Compared with Available Vinegar in the Market

Vinegar	Ash	Crude Fat	Crude Protein	Moisture	Sodium	Calories from Carbohydrates	Calories from Fat	Calories from Protein	Total Calories	Total Carbohydrates
Banana Pineapple Vinegar	0.78 %	<10 %	<0.71%	74.91 %	13.71 mg/ 100 mg	94.40 kcal/ 100 mg	<0.90 kcal/ 100 mg	2.84 kcal/ 100 mg	97.24 kcal/ 100 mg	23.60%
Vinegar A				2%	2 mg					
Vinegar B					380 mg					1%

The table shows the report of analysis of the Department of Science and Technology (DOST) on Banana and Pineapple vinegar regarding its nutritive value. The data revealed that the protein content of Banana and Pineapple vinegar has a high protein value of 0.71%from crude and 2.84 kcal compared to the vinegar A and B available in the market with 1g of protein.

Consumers' Acceptability of the Produced Vinegar

Table 7. Acceptability of Banana Vinegar (Sample A) based on Evaluation of the Household of Villanueva San Manuel, Isabela

Characteristics	Mean	Interpretation
Sourness/acidity	4.53	Like very much
Smell	4.33	Like very much
Color	4.55	Like very much
Appearance	4.63	Like very much
Grand Mean	*4.51*	*Like very much*

Table 7 reveals the means of Sample A – Banana Vinegar as to characteristics as perceived by the household of Villanueva, San Manuel, Isabela. First was appearance with a mean of 4.63 and interpreted as *"like very much"*, the second was color with a mean of 4.55, third was sourness/acidity with a mean of 4.53 and lastly, smell with a mean of 4.33 with all interpreted as *"like very much".* The grand mean of 4.51 was interpreted as *"like very much."* This implies that the households of barangay Villanueva San Manuel, Isabela enjoyed much the product.

Table 8. Acceptability of Pineapple Vinegar (Sample B) based on Evaluation of the Household of Villanueva San Manuel, Isabela

Characteristics	Mean	Interpretation
Sourness/acidity	3.68	Like moderately
Smell		Like moderately
3.78		
Color	4.40	Like very much
Appearance	4.48	Like very much
Grand Mean	*4.09*	*Like moderately*

The table shows the evaluation of the Pineapple Vinegar (Sample B) by the household of Villanueva, San Manuel, Isabela. The product's appearance and color obtained means a qualitative description of *"like very much"*. Meanwhile, sourness/acidity and smell had means interpreted as *"like moderately."* In sum, the means of all the four

characteristics yielded a description of *"like moderately"* which suggests households of barangay Villanueva, San Manuel, Isabela moderately enjoyed the product.

Table 9. Acceptability of Banana/Pineapple Vinegar -Two Seasons (Sample C) based on Evaluation of the Household of Villanueva San Manuel, Isabela

Characteristics	Mean	Interpretation
Sourness/acidity	4.70	Like very much
Smell	4.60	Like very much
Color	4.68	Like very much
Appearance	4.73	Like very much
Grand Mean	*4.68*	*Like very much*

In the above table, all four characteristics/criteria for Banana/Pineapple Vinegar (two seasons) had obtained means with a common description of *"like very much."* This connotes that the households of barangay Villanueva, San Manuel, Isabela greatly favored the product.

Table 10. Acceptability of Banana Vinegar (Sample A) based on Evaluation of CNHS Faculty & Students

	Mean	Interpretation
Sourness/acidity	4.08	Like moderately
Smell	4.40	Like very much
Color	3.83	Like moderately
Appearance	4.48	Like very much
Grand Mean	*4.20*	*Like moderately*

As shown in Table 10 the appearance and smell of Sample A – Banana Vinegar were *"liked very much"* by the CNHS Faculty and Students. On the other hand, the product's sourness/acidity and color were *"liked moderately"* by the evaluators. With the grand mean of 4.20 or "like moderately", the product was moderately acceptable.

Table 11. Acceptability of Pineapple Vinegar (Sample B) based on Evaluation of CNHS Faculty & Students

Characteristics	Mean	Interpretation
Sourness/acidity	3.88	Like moderately
Smell	4.08	Like moderately
Color	4.35	Like very much
Appearance	4.55	Like very much
Grand Mean	*4.22*	*Like very much*

Table 11 shows that the appearance and color of Pineapple Vinegar (Sample B) were *"liked very much"* by the CNHS Faculty and students whereas they *"liked moderately"* the two other criteria of sourness/acidity and smell. With a grand mean of 4.22 interpreted as *"like very much"*, it is implied that the product was very acceptable to the evaluators.

Table 12. Acceptability of Banana/Pineapple Vinegar –Two Seasons (Sample C) based on Evaluation of CNHS Faculty & Students

Characteristics	Mean	Interpretation
Sourness/acidity	4.60	Like very much
Smell	4.53	Like very much
Color	4.68	Like very much
Appearance	4.75	Like very much
Grand Mean	*4.64*	*Like very much*

The table above presents the acceptability of Banana/Pineapple Vinegar (Sample C) or two seasons as to the four criteria of sourness/acidity, smell, color, and appearance. Data would show that the product (two seasons) is most acceptable to the evaluators since it obtained a grand mean of 4.64 which is interpreted as *"like very much".*

Table 13. Acceptability of Banana Vinegar (Sample A) as Evaluated by Experts

Characteristics	Mean	Interpretation
Sourness/acidity	4.18	Like moderately
Smell	4.45	Like very much
Color	4.33	Like very much
Appearance	4.38	Like very much
Grand Mean	*4.34*	*Like very much*

The table above shows the evaluation of Banana Vinegar by experts. Of the four criteria for assessment, the smell, color, and appearance of the product appeared to be *"liked very much"* by the evaluators while they only *"liked moderately"* its sourness/acidity. It implies that the sourness/acidity of the product did not completely get the nod of tasters. On the whole, Banana Vinegar was very acceptable to experts.

Table 14. Acceptability of Pineapple Vinegar (Sample B) based on Evaluation Experts

Characteristics	Mean	Interpretation
Sourness/acidity	3.65	Like moderately
Smell	4.15	Like moderately
Color	4.35	Like very much
Appearance	4.28	Like very much

Grand Mean	4.11	Like moderately

In the above table, experts *"liked very much"* the color and appearance of the product while they *"liked moderately"* its smell and sourness/acidity. The grand mean of 4.11 which is interpreted as *"like moderately"* indicates that the product Pineapple Vinegar was moderately agreeable to the group of experts.

Table 15. Acceptability of Banana/Pineapple Vinegar Two Seasons (Sample C) as Evaluated by Experts

Characteristics	Mean	Interpretation
Sourness/acidity	4.80	Like very much
Smell	4.78	Like very much
Color	4.85	Like very much
Appearance	4.83	Like very much
Grand Mean	4.82	Like very much

As indicated by the above data, all four (4) criteria for Banana/Pineapple Vinegar (Sample C) obtained means with an interpretation of "like very much" which indicates that the two seasons of vinegar were very acceptable to experts.

Table 16. Summary of Evaluation of characteristics of the produced vinegars using Anova Test

Sources of Variation	Sum of Square	Degrees of Freedom	Mean of Square	F	f Tabular	Degrees
In-Between	1.50	2	3			
Group	0.08	6	0.48	6.25	5.14	Reject HO
Within-Group						
TOTAL	1.58	8				

The study hypothesized that there was no significant difference in the acceptability of banana vinegar, pineapple vinegar, and the two seasons of vinegar (a combination of banana and pineapple) in terms of sourness or acidity, smell, *color*, and appearance. Since the computed value of 6.25 is greater than the f tabular value of 5.14 at a 0.01 level of significance, the null hypothesis is rejected. This means that there is a significant difference in the acceptability of the three products particularly in between groups. This can be attributed to the fact that the three groups of evaluators had differing perceptions or evaluations of the products. The expert group, for instance, had a rating that was different from the two other groups.

Table 17. Level of General Acceptability of Banana, Pineapple, and Two Seasons Vinegar Across the Three Groups

Category	Banana Vinegar	Pineapple Vinegar	Two Seasons Vinegar
Households	4.51	4.09	4.68
CNHS Faculty & Students	4.20	4.22	4.64
Experts	4.34	4.11	4.82
Total	13.05	12.42	14.14
GRAND MEAN	4.35	4.14	4.71

Table 17 shows that the *two seasons* of *vinegar* had the highest acceptability rating among the three groups of respondents based on its grand mean of 4.71.

Conclusions

Based on the research findings, the study concludes that extracts from pineapple *(Ananas comosus)* and banana *(Musa acuminata)* can be made into vinegar products for household and commercial purposes following strict processes. Of the three samples tested, the two seasons (a mixture of banana and pineapple extracts) are the most favored. Moreover, the two seasons vinegar has the highest acetic content, making it the most acceptable product. With high nutritive value, it is also fit for consumption by households. As a whole, pineapple and banana are two readily available products that have high potential use for vinegar production.

Recommendations

In the light of conclusions made, the researcher forwards the following recommendations:

1. Two seasons (combination of banana and pineapple) vinegar is highly recommended.
2. Vinegar manufacturers may produce a combination of banana and pineapple vinegar as two seasons vinegar for commercial products.
3. For future studies involving two seasons of vinegar, researchers may use a larger number of respondents for validation and more variety of vinegar extract for comparison to determine the best vinegar extract.
4. There should be a separate and more comprehensive study on the nutritive value of the two season's vinegar. Future studies may delve into the comparison in nutritive value between the two season's vinegar and banana and pineapple vinegar separately.
5. Similar studies may be done to test its potential marketability and profitability to improve the findings of the study.

Compliance with Ethical Standards

This research followed ethical standards and adhered to principles of integrity, respect, and responsibility towards the participants. Before conducting the study, the researcher obtained informed consent from the participants. She ensured that they understood the purpose of the study, its procedures, and potential risks. Confidentiality and anonymity were well kept up throughout data collection, analysis, and dissemination, safeguarding participants' privacy. Additionally, 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, she ensured that the findings were used only for the research.

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PROJECT READING ENHANCEMENT ACTIVITIES FOR SCHOOL-AGE CHILDREN (REACH): ITS EFFECTS TO THE READING COMPREHENSION SKILLS OF GRADE V LEARNERS

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ABSTRACT

The study determined the effect of Project Reading Enhancement Activities for school-age Children (REACh) on the reading comprehension skills of Grade 5 learners of Bayanihan Elementary School, San Pascual North District, Division of Masbate Province for the School Year 2023-2024. It answered (1) the learners' reading comprehension skills before project REACh implementation; (2) the design of the reading intervention; (3) the curricular validity of the reading intervention design along with face, content and construct; (4) the reading comprehension skills after project REACh implementation; (5) significant difference of the learners' reading comprehension skills before and after project REACh implementation; (6) significant relationship between the reading comprehension skills before and after the implementation of Project REACh and the reading intervention design; (7) extent of influence of project REACh to the reading comprehension skills of the learners. The study applied descriptive-comparative-correlational and research and development methods. There were 50 grade 5 learner-respondents officially enrolled in Bayanihan Elementary School, San Pascual North District, Division of Masbate Province. The main gathering tools used was teacher-made test. To treat the data, frequency count, percentage technique, mean, standard deviation, Pearson Product-Moment Correlation of Coefficient, Coefficient of Determination and t-test were applied. Findings revealed were: (1) the level of learners' reading comprehension skills before project REACh implementation was 61.63; (2) The intervention program to improve the reading comprehension skills of grade 5 learners followed the following design: objective, content, learning activities and assessment.; (3) the curricular validity along face obtained an average weighted mean of 3.98; content on average weighted mean of 3.98; and construct an average weighted average of 3.96. the overall average weighted mean was 3.97 (4) the overall reading comprehension skills was 67.91 ; (5) significant difference of the learners' reading comprehension skills before

and after project REACh implementation obtained a t-value of -9.482 and a p-value of 0.000; (6) the significant relationship between the reading comprehension skills that the learners developed after project REACh was given by the r-value of 0.944 and a p-value of 0.000; (7) Project REACh extent of influence on the reading comprehension skills of the learners was given by the r^2 – value of 0.891. Conclusion drawn were: (1) the overall reading comprehension skills was emerging.; (2) Any intervention program followed a design; (3) the curricular validity for the reading intervention along face, content and construct was highly valid. (4) overall reading comprehension skills was emerging; (5) There was a significant difference on the learners' reading comprehension skills before and after project REACh implementation.; (6) There was a significant relationship between the reading comprehension skills of the learners before and after project REACh implementation; (7) Project REACh has high influence on the reading comprehension skills of the learners.

Keywords: *Reading Enhancement, Reading Comprehension, Reading Skills, Learners*

INTRODUCTION

Reading is the most valuable skill that a person should learn to have. It adds worth to someone's identity. A person is somewhat unimportant when he does not know how to read and write. Communication between two persons will not succeed when the recipient does not know how to read the text from the sender. Reading is the interpretation of the written texts. It is also a version of signs and letters sent by the sender. However, reading is not the end of the interpretation of text and symbols without proper comprehension by the individual. Comprehension is the reason for reading. If readers can read the words but do not understand or connect to what they are reading, they are not really reading. Good readers are both purposeful and active, and have the skills to absorb what they read, analyze it, make sense of it and make it their own.

Students reading comprehension is one of the most prevalent issues that our educational system is currently facing. Most of the learners could hardly understand what they are reading. Reading comprehension is the most important in the basic education among the learners especially elementary pupils. The state of education in the Philippines demands immediate attention and commitment to improvement so we can give our children the best learning experience that they deserve.

Further, to strengthen the reading proficiency of every learner and to nurture a culture of reading which is a requisite skill in all content areas, the Department of Education supports Every Child a Reader Program which seeks to equip learners with reading skills appropriate to the grade level she is enrolled. They even funded the necessary expenses for reading literacy initiatives in every school. Teachers who are involved in implementing reading interventions beyond their six-hour actual teaching load

were also granted service credit equivalent to one day. As a result, commencing School Year 2018-2019, the DepEd continued to deliver the Revised Philippine Informal Reading Inventory (Phil-IRI) assessment to learners in public schools countrywide through the Bureau of Learning Delivery-Teaching and Learning Division.

Additionally, anchored on the Every Child A Reader Program and to address the non-readers problem among Bicolano learners from Grade 1 to Senior High School, the department launched the 5B's, "Bawat Batang Bicolano Bihasang Bumasa" which aimed to equip Bicolano learners with strategic reading and writing skills to make them independent young readers and writers.

Unfortunately, amidst the Department of Education's efforts and initiatives to further enhance the educational system here in the Philippines, still it was not enough based on the results of the national assessments for students reading. The overview of DepEd Memorandum No. 173, s. 2019 states that:

> *"There are still many early grade learners struggling to meet the learning standards in early language, literacy and numeracy. Low achievement levels in English, Math and Science appear to be caused by gaps in learners' comprehension. This means that there are many low performing learners who could not comprehend (read and understand) Math and Science word problems that are written in English."*

Moreover, the Philippines slip from 20th to 27th place in 2020's English Proficiency Index. According to research released in 2020 by English First, a Swiss company, the country dropped seven points in global ranking. The data also revealed that since 2016, the country's ranking had been badly declining. The Philippine dropped from 13th place in 2016, to 15th place in 2017, 14th in 2018 and 20th place in 2019. In the Southeast Asia Primary Learning Metrics in 2019, the Philippines was also ranked in the bottom half of the six countries in reading, mathematics, and writing literacy (ABS-CBN News, 2021).

The Organization for Economic Cooperation and Development (OECD) Program for International Student Assessment (PISA) in 2022, reported that the Philippines was ranked as among the lowest performers among the 81 countries the Philippines ranked 79th. The country had an average reading score of 347 or Level 1a, which was 100 points lower than the OECD average of 472 or Level 2.

This study was anchored on DepEd Memorandum No. 173, s. 2019 entitled Hamon: Bawat Bata Bumabasa (3Bs Initiative which aimed to make every learner a proficient reader). Schools across the country are tasked to help learners develop their reading skills. Similarly, this study was based on DEped Order No. 12, s. 2017 in

reference to Deped Order No. 12, s. 2015 entitled Every Child a Reader Program (ECARP). This program aimed to develop Filipino learners' reading skills.

In Bayanihan Elementary School, the school where the researcher teaches, not all learners knew how to read which were all shown in the conducted Reading Literacy Assessment (RLA) which the data showed an alarming result. Out of 50 learners, 15 or 30% fell under Established Level; 18 or 36% as Emerging Level, 2 or 4% as Coping level and 15 or 30% as Deficit Level.

Schools around the country had been tasked to help learners strengthen their reading skills and encourage young learners to develop their interest in reading. Due to the prevalent issues on reading comprehension skills, this study focuses on determining the effect of Project Reading Enhancement Activities for school-age Children (REACh) on the reading comprehension skills of grade 5 learners in Bayanihan Elementary School, San Pascual North District, Division of Masbate Province, School Year 2023-2024 with a view to suggesting ways in which the intervention can be better implemented bearing in mind the numerous challenges schools have on the ground in order to enhance reading comprehension of grade 5 learners.

Research Questions

This study determined the effect of the Project Reading Enhancement Activities for school-age CHildren (REACh) on the reading comprehension skills of Grade 5 learners, Bayanihan Elementary School, San Pascual North District, Division of Masbate, School Year 2023-2024.

Specifically, it answered the following questions:

1. What is the level of the reading comprehension skills of the learners in terms of:
    a. Word Recognition;
    b. Fluency; and
    c. Comprehension?
2. What is the design of the reading intervention to improve the reading comprehension skills of the learners in terms of:
    a. Objectives;
    b. Content;
    c. Learning activities;
    d. Assessment?
3. What is the curricular validity for the reading intervention design along with:
    a. Face;

b. Content; and
c. Construct?

4. What is the level of the reading comprehension of the learners after Project REACh was implemented?
5. Is there a significant difference on the reading comprehension skills before and after Project REACh implementation?
6. Is there a significant relationship between the reading comprehension skills after Project REACh was implemented and the reading intervention design?
7. To what extent does the Project REACh influence the reading comprehension skills of the learners?

METHODOLOGY

This section presents the over-all framework and methodology that the researcher used in the conduct of the study. This includes the method of data analysis, respondents of the study, data gathering procedure, procedure of investigation and the statistical tools used in treating the data gathered.

Methods Used

In this study, descriptive-comparative-correlational and research and development methods of research were used. Descriptive method was used to determine the comprehension skills of the respondents in terms of word recognition, fluency and comprehension that the pupils developed before and after Project REACh was implemented. The comparative method was employed to determine the significant difference in the comprehension level of pupils before and after Project REACh implementation.

Correlational method was utilized to determine the significant relationship between the comprehension skills that the pupils developed before and after project REACH was implemented.

Research and Development method was utilized in crafting the reading intervention design to improve the reading comprehension skills of the learners in terms of word recognition, fluency and comprehension. Likewise, the same method was used in determining the influence of Project REACh on the reading comprehension skills of the learners.

Respondents of the Study

This study employed fifty (50) grade 5 learners who were officially enrolled at Bayanihan Elementary School, San Pascual North. Total enumeration was used to identify the respondents of the study; hence no sampling technique was applied.

Data Gathering Tools

Research findings were based on the data gathered, and their validity and reliability were affected by the quality of the research instruments used. To ensure quality information, it is expedient that the data collected was with the use of appropriate instruments so that the drawing of inferences and making decisions was considered informative and factual.

Teacher-made test. The researcher developed a teacher-made test together with the table of specifications. It was validated by the master teachers with a weighted mean of 4.43 resulted as excellent. Thus, it was used to determine the comprehension skills of grade 5 learners in terms of word recognition, fluency and comprehension before and after project REACh implementation on the covered specific most essential learning competencies in the first and second quarters in English 5 particularly reading comprehension. The teacher-made test undergone validation by the experts in the field who taught English for a long time. A dry-run of the teacher-made test was administered to selected grade 5 learners in San Pascual Central School, San Pascual North District that were not the actual respondents of the study.

The test was 30-item consisting reading comprehension questions. It was administered to the learners to determine the word recognition and fluency level of the learners. Thus, the teacher-made test went through reliability and validity test using Kuder-Richardson Formula 20 and item analysis, test item to determine the index of difficulty and index of discrimination of the test. The results were highly reliable and valid.

The following descriptors were utilized to evaluate the learners' level of reading comprehension before and after project REACh implementation. These were based on the scale in the learners' Rapid Literacy Assessment indicated in Regional Memorandum No. 363, s. 2023, also known as "Guidelines in the Administration of Rapid Literacy Assessment for Grade 4-12 Learners in Region V."

80-100	Established (Es)
50-79	Emerging (Em)
30-49	Coping (C)
0-29	Deficit (D)

Evaluation Checklist**.** This looked like a form or structured document, the design is similar to a questionnaire to gather feedback, opinions, or assessments on various aspects of the parts of the reading intervention design. It was evaluated by the expert in the field with a weighted mean of 3.97 resulted as highly valid. This was used to measure the quality of the reading intervention design. This consisted of a series of statements or questions with rating scales. The questions or statements were carefully crafted to elicit specific information from the respondents, allowing for a comprehensive analysis of the reading intervention design as being evaluated. Moreover, this had the following purposes: assess the quality of the reading intervention design, gather feedback from English teachers who were experts in the field, evaluate the effectiveness of the developed reading intervention design. This played a vital role in identifying the strengths and weaknesses and understanding needs for improvements. This believed to help the researcher indirectly improved the learners' reading comprehension skills. The results obtained were subjected to descriptive statistics to better analyze and interpret the data for a positive decision. The following descriptors were used to interpret the responses of the respondents.

Scale	**Value**		**Verbal Interpretation**	
4	3.76 - 4.00	-	Highly Valid	(HV)
3	2.51 - 3.75	-	Moderately Valid	(HV)
2	1.76 – 2.50	-	Less Valid	(LV)
1	1.00 – 1.75	-	Least Valid	(LstV)

Procedures of Investigation

To come up with a reliable result of the study, the researcher followed a step-by-step procedure. The researcher's first action was to define and identify the study's problem. Following the establishment of the problem and the identification of the significant variables, the researcher gathered pertinent literature and studies to support the objectives. This gave the study a more focused direction. Next, the respondents and the statistical tools appropriate for the research problems were identified.

Conceptualization of the Research Problem. The researcher initially determines the purpose of the study, the methodology, and the topics that will be addressed. The researcher then intended to choose pertinent sources and create queries that could yield reliable responses. Following that, a data analysis plan was created using a variety of statistical techniques.

Approval of the Research Title. After the completion of the title proposal, the researcher secured the approval of the research proposal from the thesis committee of the School of Graduate Studies.

Securing Permit to Conduct the Study. The researcher secured a permit to conduct the study from the School Head, Public Schools District Supervisor of San Pascual North District and Schools Division Superintendent of DepEd Masbate Province. A letter request was submitted to the School Head of Bayanihan Elementary School and San Pascual Central School, asking permission to conduct the study to the learners.

Preparation of Data Gathering Tools. The data gathering tools that was used in the conduct of this study was the teacher-made test. The teacher-made test was used to collect data about the grade 5 reading comprehension skills in terms of word recognition, fluency and comprehension.

Validation of the Data Gathering Tools. The teacher-made test was validated by experts in the field who taught English for a long time. After the validation, questions which needed changes were changed.

Evaluation of the Data Gathering Tools. The teacher-made test was evaluated by the experts in the field.

Dry-Run of the Teacher-Made Test. Teacher-made test was assessed through validity and reliability. The tool was validated by means of pilot testing to grade 5 learners of San Pascual Central School who were not part of the school as the main respondents of this study. Consequently, the teacher-made test was revised after it was pilot-tested considering the result in item analysis. The table of specification was updated as the tool was revised and finalized for the administration of the teacher-made test.

Administration of the Data Gathering Tools. After approval of the request to conduct the study, the researcher explained personally to the respondents the goal of the study and asked for their voluntary and sincere participation. The teacher-made test was administered on a specific date and time. The teacher-made test was administered to the grade 5 learners within an hour. After administering the test, the questionnaires were retrieved. All participants' names and scores were retained and used exclusively for the study's purposes.

Implementation of the intervention. The researcher implemented the intervention program which is Project REACH (Reading Enhancement Activities for School-age Children). It was implemented by the researcher for 8-weeks.

Processing of Data Gathered. The data was gathered, tabulated, analyzed, discussed, and interpreted carefully according to the assigned statistical treatment and computations.

Writing of the research report. After the data were organized, analyzed, and interpreted, the researcher prepared the research report which was subjected to a series of revisions and improvements. The collaborative discussion between the researcher and her research adviser was key in finalizing the study output and thesis.

Submission of the manuscripts. After thorough revisions and refinement, the research report was presented to the Graduate Studies panel of examiners.

Statistical Tools

The researcher utilized the following statistical tools to come up with acceptable and valid results of the study. Computation was done online.

Mean. The mean was used in determining the level of reading comprehension skills of the learner-respondents.

Standard Deviation. This tool was used to determine the extent of variability or dispersion of the scores of the learners in the reading comprehension level. It described the homogeneity and heterogeneity of the scores.

Proficiency Level. This was used to determine the reading comprehension skills of the learners based on their responses from the teacher-made test.

Pearson Product -Moment Correlation of Coefficient. This was used to measure the significant relationship between the comprehension skills before and after project REACH was implemented.

Coefficient of Determination. This was employed to assess influence, or contribution of the independent variable (x) to the dependent variable (y). In this study, coefficient of determination was used to determine the percentage of influence of Project REACH implementation to the reading comprehension of learners.

Paired t-test. This was used to treat the level of validity of the proposed intervention to improve the reading comprehension skills of the learners.

RESULTS AND DISCUSSION

This section is a discussion of the results of the study. Data were placed in tabular form to facilitate analysis and discussion.

Reading Comprehension Skills of the Learners

One of the indispensable roles of teachers in primary education is to improve learners' comprehension skills on reading. This function drives the teachers' competent and innovative efforts to adopt or employ effective strategies in honing pupils' interests in reading. The reading comprehension skills of the learners were measured in terms of word recognition, fluency, and comprehension. The result of the comprehension skills of the learners is presented in Table 1 with respective items, mean, standard deviation, the performance level of learners and corresponding verbal interpretation.

Based from the data, the level of comprehension skills of grade 5 learners on word recognition was 87.30 which ranked first, fluency ranked second with 63.66, while the lowest percentage of 33.92 was on comprehension. The overall mean of the learners along the aspects tested was 61.63 interpreted as Emerging.

Table 1

Level of Reading Comprehension of the Learners

Aspects	SD	Ave. Grade	Int.	Rank
Word Recognition	8.86	87.30	Es	1
Fluency	19.72	63.66	Em	2
Comprehension	18.85	33.92	C	3
Overall Average Grade		**61.63**	**Em**	

Legend: *80-100 - Established (Es)*
50-79 – Emerging (Em) *SD – Standard Deviation*
30-49 – Coping (C) *Int. - Interpretation*
0-29 – Deficit (D)

It can be inferred that the results of the level of reading comprehension skills of grade 5 learners in the assessment given along with word recognition, fluency and comprehension showed that learners were not yet Grade Level Ready. It can be gleaned from the table that word recognition got the highest percentage because it was easy to master, followed by fluency and the comprehension. Comprehension got the lowest percentage because it requires higher level of understanding. These results were in consonance with the study of Martin (2020) which stated that reading comprehension is

the capacity to read texts quickly and effectively for meaning. Children learnt it as the last stage of the reading process after mastering phonics, fluency and vocabulary.

This study was anchored on Barlette's Schema Theory where learners used their previous skills in reading and remember the phonemic awareness and alphabetic principles. Hence learners were given learning activities that fit their level. Learners who were still in word recognition, the activities given to them were also at this level same as fluency and comprehension.

Word Recognition. Word recognition skill is the first step an individual takes to read. It is imperative that people learn to recognize words accurately during the reading process because reading cannot be done without word recognition. Word recognition alone, however, is insufficient. One could argue that the initial step in deciphering written language is word recognition. There were 82 words in this aspect reflected in the teacher-made test which was the basis of determining the level of comprehension skills in terms of word recognition. It was the percentage of words correctly read over the total number of words in a given passage.

Thus, it can be gleaned that the result attained by learners during the assessment in word recognition showed a mean of 87.30 interpreted as Established and a proficiency level of 1.06 with a standard deviation of 8.86. Considering the learners' grade level, this was not acceptable because this aspect was in the lower level in reading comprehension skills. It can be inferred that not all the learners were able to decode because as readers become increasingly proficient decoders, automatic word recognition develops and also learners were not exposed into words.

These results were supported by the findings of Perfetti (2017), that visual word recognition, or the ability to recall word representations from memory, is a cornerstone of reading and learning in school. When a child is presented with a string of letters, the first process is to decode the letters to the spoken form. If a word has been successfully decoded, it can be recognized as familiar (seen or heard before) with greater speed. Word recognition is possible without word identification (recall of meaning and encountered contexts, since word recognition can take place by recognizing trained pseudowords as familiar or by only having a vague sense of familiarity after having heard a word once or twice. Consequently, exposure has repeatedly been shown to be a significant predictor of word recognition (Marelli, 2017).

Fluency. Fluency is a critical factor in literacy success. It is important because it builds a bridge between word recognition and comprehension. Because fluency is needed to be a successful reader, it is vital that educators measure reading rates regularly.

The teacher-made test particularly a passage developed by the researcher that were used to determine the level of comprehension skills in terms of fluency was composed of 82 words. Additionally, the teacher-made test results were presented in Table 1 which contains the aspects together with the scale and corresponding descriptors based on the Guidelines on the administration of Rapid Literacy Assessment.

As reflected in Table 1, the result of the level of the learners' reading comprehension skills in term of fluency resulted to a mean of 63.66 interpreted as Emerging and with a standard deviation of 19.72. It can be deduced that learners in grade 5 were not fluent reader because readers who have not yet developed fluency read slowly word by word. Their oral reading is choppy and lacks prosody. It was supported by the study of Acosta-Tello (2019), which stated that "Without fluency, children are basically decoders who are able to decipher what the letters in a word say, letter by letter, or syllable by syllable, and who can then hopefully recognize what the word means". Similarly, when fluently reading, children quickly decode words and simultaneously gather meaning from the sentences to develop an understanding of the story's content. They no longer focus on decoding individual words, but rather read sentences smoothly and focus on comprehending the story. This fluent reading enables students to ask and answer comprehension questions as well as make their own personal connections (Paige, 2020).

Likewise, the study of Ates (2019) stated that fluent reading has many benefits associated with it other than being able to read at an adequate rate. These positive outcomes can be vocabulary outcome, phonemic awareness, and comprehension of stories among other literacy components.

Comprehension. All other academic abilities rest on a strong foundation of reading comprehension. It aids in vocabulary development, world education, and the understanding of difficult ideas in children. Proficiency in reading comprehension is a prerequisite for academic success. Strong reading comprehension abilities increase a child's chances of success in both school and in life.

The learner's level of reading comprehension skill in terms of comprehension was determined through the 30-item teacher-made test developed by the researcher where learners obtained an average grade of 33.92 interpreted as Coping with a Standard Deviation of 18.85. The standard deviation indicated that the pupils were not in the same level in terms of comprehension skills. Some got it, but majority did not.

As shown in the result, it can be inferred that the grade 5 learners struggled in reading comprehension because learners were not able to master the lower skills in reading comprehension. This finding was parallel to the findings of Martin (2020) that reading comprehension is the capacity to read text quickly and effectively for meaning.

Children learnt it as the last stage of the reading process after mastering phonics, fluency and vocabulary. Furthermore, the findings of Hung (2015), states that reading comprehension is a dynamic process between the written symbols and the understanding of the context behind the symbols and the discovery of the link between words and concepts. On the other hand, the findings of Lervag (2018) stated that reading comprehension and word decoding are the two major determinants of the development of reading comprehension. On the same point of view, the study of Silawi et al., (2020) emphasized that reading comprehension has three components, which are process strategies (word recognition), prior knowledge and conceptual abilities.

Design of the Reading Intervention

Project Reading Enhancement Activities for school age Children (REACh) was an Eight-Week tutorial class which allotted 45-minute time thrice a week, from 3:45 to 4:30 in the afternoon at Bayanihan Elementary School, Kindergarten Classroom during Mondays, Wednesdays, and Fridays. Tutorial is an effective way to improve the reading comprehension skills of the learners.

Parallel to the findings of Mckay (2016) which states that students who attend tutorials have 20% improvement in their marks. Likewise, students who attend tutorial had better academic performance than those who did not attend at all. Likewise, Salazar et al. (2014) revealed that the tutoring program had a favorable impact on the students' classes, noting that the grades of students who had one-on-one tutoring were statistically different from those of the students who did not attend tutorial classes. Tutorials are well-appreciated by the students too.

This study was anchored on Vygotskys Theory of the “Zone of Proximal Development". This theory puts forward that a learner can enhance his/her cognitive level and he/she is able to achieve this on his/her own capacity by responding to questions and learning with a “more capable peer" or a teacher.

For a tutoring program to be effective, it should be planned and adapted to the context and the needs and interests of the students (Lemus, et al.,2015).

The design of the reading intervention to improve the reading comprehension skills of the learners was measured through a set of parameters such as: objectives; content; learning activities; and assessment.

Objectives. It refers to the objectives or competencies that they need to master based on their level. This provides *clear and concise way to define what to achieve.* These were the competencies that must be achieved or mastered by the learners during the

hands-on activities. Instead of focusing on what the teacher will cover or do during the activity, objectives should be learner-centered and should outline what the learners should be able to accomplish as a result of instruction. In this study, the objectives of project REACh were the following: decrease the number of struggling readers in Grade 5; improve the reading comprehension skills of terms of word recognition, fluency and comprehension; and establish a harmonious relationship for the learners to appreciate reading comprehension

Content. These were the subject matters which focused on the learners reading comprehension skills in terms of word recognition, fluency and comprehension. These were the competencies needed by each learner to gain high level of mastery in reading comprehension. In this study, the focused lessons were for word recognition, fluency and comprehension.

Learning activities. Learning activities are the practice reading exercises given to the learners for them to develop the different comprehension skills. It includes activities that can develop their speed in reading and comprehension skills. Timed or speed reading can help learners enhance their fluency. Learners read under time constraints to improve their reading pace and beat prior personal records. Provide learners with reading activities that can encourage them to think logically and abstractly. It also includes various challenging activities, and it was divided into three parts such as activity for word recognition, fluency, and comprehension. Learners were group into two. Different activities were given in each group.

Word recognition activity that was utilized in this study was spelling. The first group of learners was given set of words for them to read and study in advance. Every day, they were tasked to read 10 words and they must spell it during tutorial time. Sometimes, they were tasked to spell it orally one by one. The teacher did not allow learners to stop the task unless they spelled all the words correctly. The second group had also spelling but the words to be spelled were from the passage that were given to them.

One of the fluency activities was one-one-one instruction. Parallel with the study of Hudson (2020), it suggested that elementary students with reading difficulties benefit most from one-on-one instructions. The time spent working on specific, targeted interventions increased the students' overall literacy skills in terms of their fluency rates and comprehension levels. Hence, the research of Craddock (2014) revealed that one-on-one tutoring is a useful pedagogical tool. Another activity for fluency that was implemented and applied was one-minute timed reading. Learners were given reading passage and they read it in a one-minute time, if they cannot do it, they will have to try it again until they were able to do it. Similar with the findings of Kostewicz and Kubina (2020) which articulated that to improve reading fluency students were given a one-minute timed reading assessment and students read each part as many times as they

were able in one minute before moving onto the next part. Students worked their way to the end of the text in the same fashion. The continuous repetition of each part resulted in an increase in student fluency rates. Furthermore, the findings of Hudson et al. (2020) states that regardless of the intervention chosen, they must intentionally support student progress in oral reading fluency. With targeted fluency interventions, students are able to practice reading in a comfortable environment where they can find success and make progress in their fluency rates.

Comprehension activities include signal words and story mats. This activity helped the learners think about and reflect on the most important information in the story. Having them sort the who, what, where, and when of a story helped the learners understand what they are reading that much more and reinforce their knowledge. Explicit teaching, applying variety of reading strategies and pre-reading strategies can also improve reading comprehension skills of the learners. It was also supported by the findings of Ness (2016) that suggest that teachers should adopt explicit teaching style in reading comprehension during reading activities to promote effective reading in students and their effect on enhancing their level of reading comprehension. Students' problems with reading comprehension can be solved by employing a variety of reading strategies. Similarly, Mousavian and Shiahpoosh (2018) proved that effective reading strategies are an effective means to support students in their academics. Students provided with effective reading strategies outperformed the students who were not provided with any pre-reading strategy during comprehension activity.

Assessment. Asessment aids in identifying the tasks required to fulfill the objectives of the project. This assessment helps identify targeted strategies and prioritize resources, which in turn informs the plan and approaches of a project. In this study, assessment was divided into three parts such as assessment for word recognition, fluency and comprehension. For word recognition test, learners were given passage to read and the teacher identify the miscues in oral reading. For the fluency test, learners were tasked to read the passage with specific number of words and the teacher recorded the number of words that the learners read per minute. For the comprehension, learners answered the questions based from the passage being read.

It is very important that a reading intervention design should include assessment because it allows the teacher to monitor learners' progress throughout the implementation of the program. It can also provide with a better understanding of where the learners are going to in the program. Based on this information, teachers can use assessment to reevaluate and modify teaching strategies and to identify any obstacles, real or imagined, that learners may be encountering as a result of the assessment decisions.

Curricular Validity of the Reading Intervention Design

Any developed material should undergo validation by the expert in the field. This is to ensure that the developed material conformed with the standard and it should be reliable and valid. The curricular validity of the reading intervention was based on face, content, and construct.

Face. Table 2A shows the curricular validity of the reading intervention design in terms of its face. Among its indicators, layout and design are simple and easily recognizable; illustrations clarify and supplement the text and font style and size were appropriate to the target users obtained the highest weighted mean 4.00 noted as highly valid. Meanwhile, spaces between words and letters facilitates reading and are attractive

Table 2A
Curricular Validity of the Reading Intervention Design along with Face

Indicators	Wm	I	Rank
Layout and design are simple and easily recognizable	4.00	HV	2
Illustrations clarify and supplement the text	4.00	HV	2
Font style and size are appropriate for the target users	4.00	HV	2
Spaces between words and letters facilitate reading	3.95	HV	4.5
Attractive and appealing to learners	3.95	HV	4.5
Average Weighted Mean	**3.98**	**HV**	

Legend:

3.26 – 4.00 – Highly Valid (HV)
2.51 – 3.25 – Moderately Valid (MV)
1.76 – 2.50 – Less Valid (LV)
1.00 – 1.75 – Least Valid LSV)

SD- Standard Deviation
Wm- Weighted Mean
I- Interpretation

and appealing to learners received the lowest weighted mean of 3.95 interpreted as highly valid. However, the overall circular validity for face got an average weighted mean of 3.98 interpreted as highly valid among the respondents.

It implied that all the evaluators have the same way of looking at the three indicators, same evaluation with regards to the first three indicators. However, as regards the two indicators, though they were noted the lowest but statistically, they were interpreted as highly valid. Providing learners with reading intervention with clear instructions can help them ensure that they fully understand what needs to be done to achieve the goal. This finding was supported by Anggraeni et al. (2020) who stated that creating effective, high-quality learning activities begins with adherence to an explicit design process. The activity should also be evaluated to identify ways to improve it for future use.

Content. Table 2B shows the curricular validity of the reading intervention design along content. Among the indicators, the language used is appropriate to the developmental level of the target users; contributes to the achievement of the lesson objectives; and free from prejudices and biases based on ideology, culture, religion, race and gender obtained the highest weighted mean of 4.00 interpreted as highly valid. Meanwhile, develop the learners higher order thinking skills; and integrates across other learning areas, both got the lowest weighted mean of 3.95

Table 2B
Curricular Validity of the Reading Intervention Design along with Content

Indicators	Wm	I	Rank
The language used is appropriate to the developmental level of the target users	4.00	HV	2
Contributes to the achievement of the lesson objectives	4.00	HV	2
Free from prejudices and biases based on ideology, culture, religion, race and gender	4.00	HV	2
Develop the learners higher order thinking skills	3.95	HV	4.5
Integrates across other learning areas	3.95	HV	4.5
Average Weighted Mean	3.98	HV	

yet were also interpreted as highly valid. The over-all curricular validity of the reading intervention design in terms of content showed an average weighted mean of 3.98 interpreted as highly valid

.

It can be inferred that the first three indicators under content, were of equal importance based on the evaluation of the validators. It meant that the reading intervention design's content are carefully constructed following both the validation's system concepts and standard format. According to Galanis et al. (2015), comprehensive content, valuable resources, engaging, clear directions throughout the course, and the facility to engage with their teacher(s) to raise concerns and acquire feedback to help the learners learn.

Construct. Table 2C shows the curricular validity of the reading intervention design along construct.

Table 2C
Curricular Validity of the Reading Intervention Design along with Construct

Indicators	Wm	I	Rank
The presentation is clear, captivating, and understandable	4.00	HV	2
The flow of ideas is smooth and logical	4.00	HV	2
The length of sentences is appropriate to the comprehension level of the target users	4.00	HV	2
Directions are clear and easy to follow	3.90	HV	4.5
Learning activities are adaptive to the learners' level of understanding	3.90	HV	4.5
Average Weighted Mean	3.96	HV	

It was revealed that the first three indicators obtained the highest weighted mean of 4.00 interpreted as highly valid. Meanwhile, the two last indicators got the lowest weighted mean of 3.90 interpreted also as highly valid.

Reading Comprehension Skills of the Learners after Project REACh was implemented

The practice of reading program has been in the limelight for a long time in the Philippine education sector. In fact, the elementary schools in the country devised their own remedial reading programs to assist struggling readers. Table 3 presents the level of learners' reading comprehension skill after Project REACH implementation.

Table 3

Level of Reading Comprehension of the Learners After Project REACH Implementation

Aspects	SD	Ave. Grade	Int.	Rank
Word Recognition	5.92	90.64	Es	1
Fluency	18.47	68.02	Em	2
Comprehension	16.55	45.08	C	3
Overall Average Grade		**67.91**	**Em**	

Legend: *80-100 - Established (Es)*
50-79 – Emerging (Em)
30-49 – Coping (C)
0-29 – Deficit (D)

SD – Standard Deviation
Int. - Interpretation

Word Recognition. Word recognition skills are crucial in reading. They are indicators of reading fluency and are very important to monitor the progress and development of the level of learning of an individual. Word recognition skills can lead to better reading comprehension when further improved. The acquisition and development of word recognition involve multiple factors and processes. It plays a vital role for the success in reading comprehension. Therefore, word recognition skills are essential for reading proficiency and should be emphasized in literacy interventions.

It was revealed in the table that the result attained by the learners during the post-test assessment in the word recognition showed a mean of 90.64 interpreted as established. Based from the result, there were changes from the data of word recognition. It can be inferred that the activities given during the intervention were effective.

Hence, these results were parallel to the findings of Buncag (2020) who claimed that reading enhancement interventions are considered part of education with its mission of pulling up the students and leading them on the right track. It is considered as a rapidly growing method of saving the students on the fall of their learnings. Additionally, the study of Jiang (2016) states that reading activities and tasks would improve the learners' comprehension skills. Moreover, Abana (2020) states that remedial program is an answer of connecting the dots to overcome the difficulties and bridge the gap of learning. With

the demand of the present education, the reading enhancement intervention was designed to walk with students and the kind of special attention on their learning, vis-a-vis with the performance of teachers monitoring the progress of their learners and to improve the methods of teaching.

Fluency. Fluency describes a set of foundational skills that are essential to developing literacy. To say the least, fluency makes reading and as a result, makes learning easier. Students who were fluent in reading will struggle less with difficult words and will comprehend more easily with complex topics.

As reflected in the table, fluency got the average grade of 68.02 interpreted as Emerging. There were changes from the results after intervention program was implemented. During the intervention program and activities in fluency, learners were given passages to read with the corresponding specific time to finish reading the passage. After reading, teachers gave feedbacks and encouragement to the learners especially to those who were not able to finish reading the passage on the specific time given to the learners. It can be inferred that the intervention program and activities implemented were effective.

It was supported by the findings of Crowe (2015), which articulated that feedback given during oral reading improves children's word accuracy, reading comprehension and fluency. Additionally, findings of Agnes, Thembekile and Sive (2021) affirm that the learners' English skills improved a lot because of the reading enhancement interventions. They benefited more from skilled and fluent remedial educators who attend to their individual need.

Comprehension. Comprehension adds meaning to what is read. Reading comprehension happens when texts on a page when interpreted are not just simple words but a world of thoughts and ideas. It makes reading enjoyable, fun, surreal, and informative. It is needed to succeed in school, work, home, and in everyday lives wherever you are.

Comprehension got the lowest average grade of 45.08 and interpreted as coping. Compare to the level of reading comprehension before project REACh, there were also changes in the data. It implied that Project REACh was an evidenced-based strategy and was successful in increasing the scale of the learners reading comprehension skills in terms of word recognition, fluency and comprehension. It can be inferred that reading comprehension skills of the learners may improve if they are engaged in reading intervention program, different reading activities and reading strategies. Learners need to have comprehension in order to be successful academically.

These results coincided with the study of Tadayonifar et al. (2021) which states that students' reading comprehension is significantly enhanced by using detailed guidance on various reading strategies thus, educators must use appropriate reading strategies that are catered to the readers' "perceived learning styles" for readers to improve their reading comprehension and have fun in reading. Intervention programs involving comprehension-building skills, like remedial reading, strengthen vocabulary (McCardle et al., 2021). This method of practice increases language skills and builds general knowledge setting a foundation for basic life skills. Likewise, findings of Amira (2018) states that reading comprehension can be solve by employing variety of reading strategies.

Consequently, based on the study of Acedillo, Nanette and Saro (2023), reading comprehension is essential for future learning and understanding and without it, pupils will struggle academically. It is essential that the learners can comprehend text in an effective manner to succeed in their academic and professional objectives at the global level. Relatedly, the study of Oakhill (2014) stated that a definitive point of perusing is not the interaction however to comprehend what learners read, and cognizance can occur at various levels, it is important for more than just understanding text; it is likewise for general learning, academic success and employment success. On the same point of view, the former secretary of the Department of Education, Bro. Armin A. Luistro (2016) emphasized and stated that evaluating and measuring reading comprehension and competence is the fundamental cornerstone of all academic learning activities. Because of this, learning other disciplines will be a constant battle for the students if they do not grasp reading skill at the outset.

The schema theory supported the study by explaining how readers use prior knowledge to comprehend and learn from text. The fundamental principle of the schema theory assumes that written text does not carry meaning by itself. Rather, a text only provides directions for readers as to how they should retrieve or construct meaning from their own previously acquired knowledge.

Significant Difference on the Reading Comprehension Skills Before and After Project Reach Implementation

Implementation of project REACh is imperative to improve reading comprehension skills, particularly to elementary school learners because word recognition, fluency and comprehension are particularly important at this stage of development and early intervention can impact the progression of reading difficulties. For this reason, the

researcher wanted to determine the significant difference on the reading comprehension skills before and after project REACh implementation.

Table 4 shows the significant difference on the reading comprehension skills before and after project REACh implementation.

Table 4

Significant Difference on the Reading Comprehension of Learners Before and After Project REACH Implementation

	SD	t-value	p-value	Int.
Posttest-Pretest	4.688	-9.482	0.000	S

significant at the 0.05 level

Legend: *N – Sample Size*
SD – Standard Deviation
I – Interpretation
S – Significant

In the result, it showed that there was significant difference on the reading comprehension skills before and after project REACh implementation, with a t-value o -9.482 and p-value of 0.000. The computed value indicated the difference on the reading comprehension skills of the learners before and after project REACh implementation. Thus, this finding meant that the implementation of project REACh program has remarkably improve the reading comprehension skills of the learners.

Reading program was imperative to improve reading comprehension skills particularly to elementary learners because fluency and comprehension were particularly important at this stage of development and early intervention can impact the progression of reading difficulties.

The study's findings were in consonance with those of Schijns et al. (2020), who discovered that using contextualized learning materials resulted in a very significant difference between the pretest and posttest outcomes. Also, the students' supervision and desire in reading the course materials influenced their reading proficiency (Eshet-Alkalai, 2013; Saro, et al. 2022).

Moreover, Barlette Schema Theory cited by Seymour (2017) states that by letting the learners use their previous skills in reading and remember the phonemic awareness and alphabetic principles. Hence, learners were given learning activities that fir their level. Learners who were in word recognition level, the activities given to them were at this level

also, same as fluency and comprehension. They need first to master word recognition and fluency before they were given activities in reading comprehension. Additionally, Vygotsky suggested that students should be educated where they are capable of learning with peer support, instructional strategies, and regular assessment. Scaffolding involves breaking down complex tasks into smaller, more manageable steps, and providing support and feedback as students work through each step.

Significant Relationship Between the Reading Comprehension Skills after Project REACh was Implemented and the Reading Intervention Design

Project REACh is one of the reading interventions that is thought to have great impact in assisting the learners to improve their reading comprehension skills. Thus, it is in this premise that the researcher decided to conduct this study to evaluate the significant relationship between the reading comprehension skills before and after the implementation of Project REACh. The said relationship was answered through the use of Pearson Product-Moment Correlation of coefficient.

Table 5

Significant Relationship Between Reading Comprehension Skills Before and After Project REACh Implementation

		r-value	Int.	p-value	Int.
Project REACH	Reading Comprehension Skills	0.944	Very High Correlation	0.000	Significant

Correlation is significant at the 0.05 level (2-tailed).

Legend:

Computed r-value	*Interpretation*
Less than +/-0.19	*Negligible Correlation*
+/-0.20 to +/0-39	*Low Correlation*
+/-0.40 to +/0-69	*Moderate Correlation*
+/-0.70 to +/0-89	*High Correlation*
+/-0.90 to +/0-99	*Very High Correlation*
+/1.00	*Perfect Correlation*

As reflected in Table 5, the computed value of **r** = 0.94 which implied that there was very high correlation between the comprehension skills before and after project REACh was implemented. The p-value of 0.000 which was less than 0.05 implied that the

relationship was significant. Thus, it can be inferred that the implementation of Project REACh efficiently and effectively improved the reading comprehension skills of the learners.

This was supported by Allington, (2019) who believes that there is a need to match students individually to the intervention that will work best. Wallace (2020) opines that effective reading programs involves teachers modelling for students the abilities they struggle with and guiding students as they practice these skills. Interventions should then focus on teaching students how to use strategies to improve comprehension of texts read. This intervention serves as an avenue for students to develop awareness in the importance of learning World Literature by exploring literary text in a lighter mood for them to catch up in their regular class.

Findings of the study were supported by the Scaffolding Theory which articulated that experts as well as more experienced people around the student, teachers, parents, and even peers at the same class can act as supports. Scaffolding theory is a teaching technique that involves providing support and guidance to students as they learn new concepts or skills. Yet, planned instructional scaffolds are often provided by teachers. Well-constructed Scaffolds optimize student learning, provide a supportive environment as well as facilitating student independence. Scaffolding strategy refers to supporting students to certain extent until the degree of acquiring new skills in an individual basis. Scaffolding lasts not forever, it stops once students were able to do tasks which are beyond their current capabilities. Teacher's comments and feedback provide students with desire to take responsibility of their learning and to create independence from their teachers' continuous care.

Significant Influence of the Project REACH on the Reading Comprehension Skills of the Learner

The significant influence of project REACh to the reading comprehension skills of the learners was further assessed through coefficient of determination (r^2 – value). Thus, the strength of influence was described as Very Strong, Strong, Moderate, Weak and Very Weak.

Table 6

Significant Influence of the Project REACH on the Reading Comprehension Skills of the Learners

		r^2	Int.
Project REACH	Reading Comprehension Skills	0.891	High

Legend:

0.00	*No influence*
0.00 to 0.19	*Very Low*
0.20 to 0.39	*Low*
0.40 to 0.69	*Moderate*
0.70 to 0.89	*High*
0.90 to 1.00	*Very High*

Evidently, the obtained r^2 – value of Project REACH to the reading comprehension skills of the learners was 0.891 described as High. The computed value indicated that project REACh has high influence on the reading comprehension skills of the learners. Thus, it can be inferred that project REACh have a strong influence on the reading comprehension of grade 5 learners. It can be inferred that implementation of REACH project impacted or contributed to the performance of the learners' reading comprehension skills. Hence, the struggling readers showed better improvement.

The results have been supported by various studies. Nindy and Kustijono (2017) state that the use of contextualized reading programs has been a potential source to change the learners' reading comprehension skills in the learning process by means of having these resources allow the learners to read and interactively participate in the classroom while also making themselves more comfortable. Moreover, Glenberg (2017) articulated that reading intervention in education setting enables the students to engage in the critical reflection and understanding text and utilize rational in order to generate adequate responses in comprehension. On the same point of view, Larasati, Purwati, and Munir (2019), affirmed that the goal of reading program instruction is to help students do better in school. Reading enhancement interventions offer an excellent opportunity to support remedial students in mastery learning enhancement in reaching the English threshold. Further, Javed (2015) revealed that educators are required to implement educational strategies that promote critical thinking and pre-reading to develop comprehension skills in the students.

Moreover, top-down reading model theory agreed with the study's finding where it contends that reading is driven by meaning and proceeds from whole to part. It is also known as concept-driven model. Based on this theory, efficient reading does not result from the precise perception and identification of all the elements in a word, but from skills in selecting the fewest, most productive cues necessary. They contend that readers have a prior sense of what could be meaningful in the text, based upon their previous experience.

Conclusions

From the foregoing findings, the following conclusions were drawn:

1. The reading level of the grade 5 learners along word recognition was established; fluency was emerging; and comprehension was coping. Overall reading comprehension level was emerging.

2. The intervention program followed a design.

3. The curricular validity for the reading intervention along face, content and construct was highly valid. The overall curricular validity was also highly valid.

4. The reading comprehension level of the learners along word recognition was established; fluency was emerging; and comprehension was coping. The overall reading comprehension level was emerging.

5. There was a significant difference on the learners' reading comprehension skills before and after project REACh implementation.

6. There was significant relationship between the reading comprehension skills of the learners before and after project REACh was implemented.

7. Project REACh has high influence on the reading comprehension skills of the learners.

Recommendations

Based on the conclusions, the following recommendations were offered:

1. Word recognition skills may be enhanced to improve the level acquired by the learners and eventually be able to use higher order thinking skills. Comprehension should be practiced more by giving the learners reading exercises for them to be exposed using their critical thinking. School Heads may also include remedial instructions in the class program of the teachers.

2. Teachers whose objective is to craft for an intervention program geared towards improving learners' performance should think a design that would produce the targeted outcome.

3. The curriculum writers and assessors may look over every facet of the instructional materials to guarantee that the design will result to its ultimate purpose or objective of improving the learners' reading comprehension skills.

4. Teachers may extend extra time in teaching reading to the struggling readers to improve the reading comprehension skills of the learners. There may be additional practice and exposure to reading activities that can develop their fluency and comprehension skills. Teachers may also be knowledgeable in providing additional learning support materials to the pupils.

5. Teachers may need to be more inventive in using research-tested strategies such as Enhancement program and activities to improve learners' reading comprehension. Conduct free trainings and seminars to the Elementary teachers specifically in crafting intervention program so that they can also be able to address difficulties of the learners inside their respective classes through the crafted intervention program.

6. Teachers should continuously attend more training and seminars on different teaching strategies for better teaching competency. Teachers may also craft an intervention program for the struggling learners and enhancement activities for the advance learners and follow the reading intervention design to attain the desired outcome. School heads should continuously follow-up the implementation of remediation activities and make a constant checking of teacher's remediation notebook.

7. The Department of Education may fully support the continuing professional development of the teachers for them to be equipped with the necessary knowledge needed in teaching specifically techniques and strategies in the delivery of lessons. They may also encourage the teacher to attend trainings and seminars related to the crafting of intervention program/material so that they may have the facility of crafting their own intervention material. The teachers may also utilize the proposed improvement plan formulated.

Compliance with Ethical Standards

The nature of the study was explained to the participants that they will be the beneficiaries of the Project Reading Enhancement Activities for school-age Children (REACh) to determine its effects on their reading comprehension skills. They were also informed that their participation in the study had their parent' consent.

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QUALITY OF WORK-LIFE: ITS MODERATING ROLE ON FILIPINO GEN Z'S OCCUPATIONAL SELF-EFFICACY AND ORGANIZATIONAL COMMITMENT

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ABSTRACT

This research examined the interplay between quality of work-life (QWL), occupational self-efficacy, and organizational commitment among Filipino Gen Z employees. Employing a quantitative research design with moderation path analysis, the research explored the strength and direction of associations. Descriptive statistics summarize the data for each variable. The sample consists of 101 Filipino Gen Z workers (born between 1997 and 2012) who completed a 20-minute online questionnaire encompassing QWL, occupational self-efficacy, and organizational commitment. The findings showed that a healthier QWL positively correlates with increased commitment to the organization. In conclusion, the study showed that when Gen Z is satisfied with their work-life balance, it translates more effectively into dedication and commitment to their job.

Keywords: *occupational self-efficacy, organizational commitment, quality of work-life, moderation analysis, Gen Z*

INTRODUCTION

Generation Z (Gen Z) were those born from 1997 to 2012, and have garnered significant attention not only in social contexts but also within the labor force. A study identified factors shaping Gen Z, namely social connections, education and learning, information consumption, globalism, technological dependence, world affinity culture, and life expectancy (Tidhar, 2023).

The labor force is now experiencing a noticeable shift as this new generation becomes actively involved. This young generation showed that they possess a unique set of qualities and characteristics that set them apart from generations in the workforce. They are highly adept at using technology and crave constant stimulation and feedback. However, there is some research showing that they value work-life balance and a purposeful career. Thus, this research delves into the concept of Quality of Work-Life (QWL), which pertains to an individual's satisfaction and well-being concerning the balance between work demands and personal life.

Studies on Generation Z's level of organizational commitment revealed that unlike earlier generations who, most of the time, resort to settling with one company, Generation Z is most likely to be a "job-hopping" generation, meaning that they do not stay on one company (Nabahani, et.,al, 2020). For particular reasons, they tend to always seek another job every time they have the opportunity. Therefore, being the generation that is currently joining the workforce, it is essential to promote a healthy working environment and greater opportunity for advancement.

Quality Work-life and Organizational Commitment

Quality of work life is universal (Ishak et al. 2018). Certainly, it's essential for organizations, whether small or large companies, to prioritize a conducive work environment and enhance employee's commitment to work. In the study of Johari et al. (2018), it accentuates the importance of having established balance between work and personal life as it drives the employees to be more productive, be motivated, and especially decreases the chance to acquire stress in the working station.

A local study conducted in the Elementary School of Alegria District, Cebu City in the Elementary and Secondary level wherein 134 females and 20 males teachers had participated to determine if demographic profile such as age, gender, highest educational attainment, marital status, number of household members in the family and number of years in service has a relationship with quality work-life. The findings based on the statistical result showed that only the number of household members in the family has significantly affected QWL while other factors have no significant association. Additionally, they have also examined if demographic profile and organizational commitment has a relationship. The outcome has shown no significant association. This means that the teachers' perceived organizational commitment can be strengthened by means of how intrinsically motivated they are. Kaplan and Kaplan (2018) added that

employees' values towards the organization is a significant idea considering the fact that it affects the commitment of an individual's, organizations, and society at large.

Furthermore, one foreign study from Kerman province hospital of Iran, conducted research for 51 emergency nurses between 30 and 40 years old. The result showed that organizational commitment and quality of work life has a positive and significant relationship. Studies support their data which indicates a positive significant relationship between quality of work life for continuous commitment and normative commitment. However, it appears that quality of work life and personal and professional information (age, educational level, service record) is inconsequential.

Collectively, these studies provide valuable insights into Generation Z's behavior and other factors affecting their work. Consequently, these findings and data will serve as the guiding framework of this research, which aims to explore the correlation of organizational commitment, occupational self-efficacy and quality of work-life.

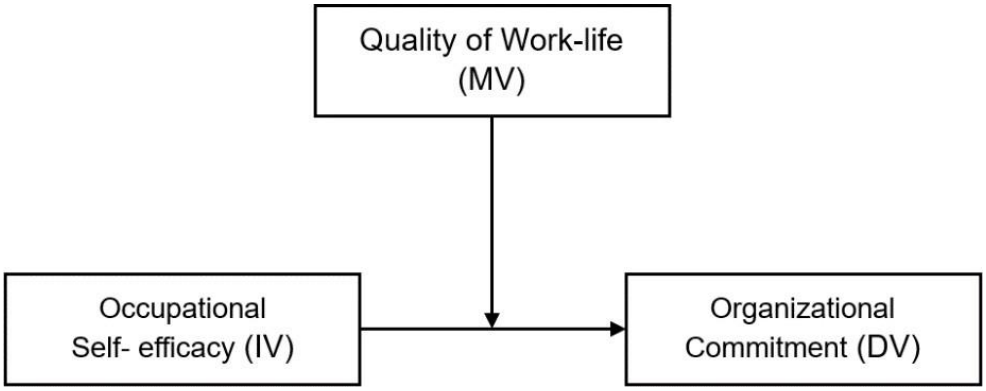
Theoretical Framework

By assessing the current state of Generation Z workers, the study aims to provide valuable insights to organizations undergoing continuous hiring and organizational redefinition. Researchers selected QWL, organizational commitment and occupational self-efficacy as key variables to explore the connections of theories related from one another.

The Three (3) Components Model of Commitment by John Meyer and Natalie Allen's which includes: affective commitment (emotional attachment), continuance commitment (costs associated with leaving) and normative commitment (sense of obligation) has an alignment with Albert Bandura's concept of self-efficacy, which is the belief in one's ability to successfully perform, a specific task or behavior.

For instance, Herzberg's Two Factor Theory/ Motivation-Hygiene Theory revealed that certain characteristics of a job are consistently related to job satisfaction whilst different factors are interrelated to job satisfaction (Dartey-Baah, 2011). It highlights the importance of providing motivating factors for employees which can ultimately improve their quality of work life and lead to higher commitment and motivation.

Figure 1. Moderation Model of Quality of Work-Life, Occupational Self-Efficacy, Organizational Commitment



Research Questions

The purpose of the study is to delve and investigate the moderating role of quality of work-life between occupational self-efficacy and organizational commitment among Filipino Gen Z employees, and to address and identify the direct relationship between the variables, the researchers formulated the following research questions:

1. Is there a relationship between occupational self-efficacy, organizational commitment and quality of work-life among employed Filipino Gen Z?
2. Does quality of work-life have a moderating effect on Filipino Gen Z's self-efficacy and organizational commitment?
3. To what extent does the quality of work-life affect the organizational commitment of Filipino Gen Z employees?

METHODOLOGY

The Participants

The participants of the research study are Filipino Gen Z, who were born between 1997 - 2012 and range in age from 22 - 27 years old, there were varied numbers of participants for each age group in which represents a unique population to study the relationship of quality of work-life to self-efficacy and organizational commitment, wherein, researchers can gain valuable insights evolving workplace dynamics in the Philippines. The research study consists of a total of 35 men and 66 women, ages 22 to 27 years of age, who worked as Gen Z employees and to guarantee the statistical results were reliable, the researchers collected a total of 101 respondents from the educational institution/s, government agencies, business process outsourcing (BPO) companies, telecommunications, military, construction, logistics and finance industries who worked

in various organizations with a wide range of professional backgrounds.

Measures

Occupational self-efficacy Scale. The OCCSEFF scale was developed by Dr. Birgit Schysand Dr. Gernot Von Collani (2002). The scale consists of twenty (20) items with seven identified items being reversed scores (e.g. *When I set goals for myself in my job I rarely achieve them*.) OCCSEFF assesses the perceived general self-efficacy of an individual in the occupational context. A Likert-type response scale with categories ranging from 1 as "completely true" to 6 as "not at all true". A perceived assessment of the respondent's occupational self-efficacy is obtained through averaging the responses across all items. A higher average score indicates a higher perceived occupational self-efficacy. Furthermore, the Cronbach's had a.92 alpha.

Three-Component Model Employee Commitment Survey. TCM Employee Commitment Survey by Meyer, Allen, & Smith (2004). The revised survey has a total of eighteen (18) items which measures three (3) forms of employee commitment to an organization, namely, affective commitment (desire-based), normative commitment (obligation-based) and continuance commitment (cost-based). Each factor consists of six (6) items, with four identified items being reversed-keyed (e.g. *I am not afraid of what might happen if I quit my job without having another one lined up*.). The survey used a 7-likert scale, indicating the level of agreement from 1 as "strongly disagree",2 as "disagree", 3 as "slightly disagree", 4 as "undecided", 5 as "slightly agree", 6 as "agree", and 7 as "strongly agree". The responses are averaged to determine the final score, with a higher score indicating a better level of organizational commitment. TCM Employee Commitment Survey indicate good psychometric features, the following were the Cronbach Alpha factor scores: ACS (affective commitment) = 0.87; NCS (normative commitment) = 0.79; CCS (continuance commitment) = 0.75.

Work-Related Quality of Life Scale-2. WRQoLS-2 is the second version of Work-related Quality of Life Scale (WRQoLS) authored by Simon Easton & Darren Van Laar (2007), the second version contains thirty-two (32) items (with overall Cronbach's Alpha of 094), it offers improved psychometric qualities from the original scale. The 32-item version of the WRQoL-2 contains all of the original WRQoL 1 scale questions. The scale assessing the overall quality of worklife of an employee. The scale is clustered into seven factors - control at work, employee engagement, and general well-being, home-work interface, job career satisfaction, stress at work, and working conditions. Using a 5-point Likert scale with the response category indicating level of agreement ranging from 1 as "strongly disagree", 2 as "neutral" 3 as "agree", 4 as "strongly agree" and 5 as "strongly agree", scores on five items must be reversed. (e.g. *I often feel under pressure at work*.). The overall score is achieved by taking the average of the factor scores, providing a comprehensive overview of individuals' quality of work-life. Higher scores reflect greater quality of work-life. While the WRQoLS-2 is currently being tested, the reported internal consistency of the Chinese translation of the scale (WRQoLS-2C) is Cronbach's alpha = 0.94.

Data Gathering Procedures

A survey was distributed to selected Filipino Gen Z employees across the country, using a purposive sampling method. Following the participants' identification, the researchers disseminated an informed consent, followed through by the online survey questionnaire which were both via Google forms. The survey comprised questions about organizational commitment, occupational self-efficacy, and quality of work-life (QWL). Google Spreadsheet was used to generate the data that was gathered from the research participants, and only the researchers had access to it.

Data Analysis

The research study is quantitative in nature with correlational approach and moderated regression analysis that allows to measure the variables and assess the strength and direction of the associations and a descriptive statistic to summarize data for each variable.

Scope and Limitations

The researchers acknowledged the importance of offering substantial insights into the professional situations of a growing population of employed Filipino Gen Zs in the Philippines. Hence, this research study primarily focuses on three assumptions - influence of the Filipino Gen Z workers, their compelling motive to be crucial for organizations, and the Philippine setting as a factor for quality work-life. However, due to the limited sample size of the research study, it is impossible to determine with certainty whether it is applicable to the entirety of the Filipino Gen Z employees in the Philippines.

RESULTS

The researchers showed the obtained findings from the data analysis, outlining the relationship between quality of work-life, self-efficacy and organizational commitment among Filipino Gen Z.

The presented descriptive statistics in table 1 demonstrated the participants perceived occupational self-efficacy, organizational commitment, and quality of work-life. The participants showed a moderate to low perceived occupational self-efficacy with a mean score of 2.43. On organizational commitment, respondents demonstrated a mean score of 4.83 suggesting an average level of commitment to their current organization. In a similar case, participants' quality of work life revealed a moderate to high satisfaction on work-related factors of their life with the mean score of 3.53.

Table 1: Descriptives and Correlation Matrix

	n	Mean	SD	OSE	OC	QWL
Occupational Self-efficacy	101	2.43	0.569	-	-	-
Organizational Commitment	101	4.83	0.668	-0.218	-	-
Quality of Work-life	101	3.53	0.511	-0.427	0.423	-

Research Problem 1*: Is there a relationship between occupational self-efficacy, organizational commitment and quality of work-life among employed Filipino Gen Z?*

Table 1 shows several results, first, the computed Pearson's r between occupational self-efficacy and organizational commitment is -0.218, indicating no relevant relationship. . Secondly, the results show that there is no positive correlation between occupational self-efficacy and quality of work-life with -0.427 computed Person's r. Lastly, table 1 revealed that there is a positive relationship between quality of work-life and organizational commitment. This implies that as quality of work-life, organizational commitment also increases.

Research Problem 2: *Does quality of work-life have a moderating effect on Filipino Gen Z's self-efficacy and organizational commitment?*

Results presented in table 2 shows that there is no direct interaction effect on the combined occupational self-efficacy and quality of work-life to the organizational commitment of working Generation Z. This suggests that the quality of work-life does not have a moderation effect on the interaction between occupational self-efficacy and organizational commitment.

Table 2: Moderation Estimates

			95% Confidence Interval			
	Estimate	SE	Lower	Upper	Z	p
OSE (IV)	-0.0525	0.111	-0.257	0.173	-0.474	0.635
QWL (MV)	0.5642	0.163	0.237	0.875	3.468	< .001
OSE (IV) ✻ QWL (MV)	0.2254	0.202	-0.181	0.615	1.115	0.265

Research Problem 3: *To what extent does the quality of work-life affect the organizational commitment of Filipino Gen Z employees?*

Although the data presented in table 2 revealed that there is no relationship between occupation self-efficacy and organization commitment, and suggest that there is no direct interaction effect on the combined occupational self-efficacy and quality of work-life to the organizational commitment. The results in table 2 displayed that quality of work-life shows direct effect to organizational commitment with a p-value of <.001 and an estimate of 0.56 implying the higher the quality of work-life the higher the organizational commitment of Filipino Gen Z.

DISCUSSION

The research study found no significant relationship between self-efficacy and organizational commitment among Filipino Gen Z - the result could be explained with the high levels of self-efficacy among Filipino Gen Z workers which may not translate into strong organizational commitment if work demands long hours that interferes with personal life. However, the quality of work-life leads to organizational commitment, with higher quality implying greater commitment. The interaction effect of occupational self-efficacy and quality of work-life had no moderating effect on organizational commitment - there is a chance that other factors could may have explained the association between the quality of work-life, self-efficacy and organizational commitment and that the sample size used in the research is insufficient to thoroughly explain and explore this relationship. The result is contrary to previous study conducted by Orgambidez, Borrego and Vasquez-Aguado (2020) which found self-efficacy a significant predictor of quality of work-life, but partially mediated by job satisfaction and work engagement. The disparity between the previous and present research study highlights the importance for a thorough investigation of the variables affecting organizational commitment suggesting potential other factors at play and some factors in the past may not be as crucial today, and vice versa.

In accordance with the study, Gen Z's confidence in their professional abilities has no direct impact on the decision for continued employment with a company. However, a positive quality of work-life as well as the work environment are significant predictors of organizational commitment. Quality of work-life improves commitment, regardless of self-efficacy. This suggests that to retain Filipino Gen Z employees, organizations should emphasize on creating a positive work environment that prioritizes well-being and foster growth opportunities and although Filipino Gen Z has confidence with their skills and knowledge, they put greater value for a holistic experience for their professional and personal welfare. With this, the limitations of the research make it indefinitely applicable to all Gen Z, but highlights the importance of quality of work-life in this generation.

Conclusions

The research study among Filipino Generation Z (Gen Z) employees showed that having an excellent quality of work-life is a more important source of retention than self-

confidence in their professional skills. Interestingly, their desire for a healthy quality of work-life appears to be unaffected by their total self-efficacy. The result emphasizes the significance of focusing on the quality of work-life programs for Gen Z employees. Even if they have high levels of self-confidence in their abilities, a poor balance between work and life, can outweigh their sense of fulfillment and be immediate to seek employment elsewhere. This suggests that Gen Z employees prioritize workplaces that emphasize and respect their time outside of work and offer a sustainable workplace. In addition, it appears that Filipino culture conveys an essential factor when it comes to personal, work and family space of an individual.

Recommendations

The research conducted found a positive relationship between occupational self-efficacy, quality of work-life and organizational commitment among Gen Z employees, while there is no significant relationship between self-efficacy and organizational commitment, quality of work-life and organizational commitment, quality of work-life are significantly correlated. Researchers suggest conducting a longitudinal research study to examine Gen Z's occupational self-efficacy, quality of work-life and organizational commitment over time and compare the results to previous generations; employ and improve self-efficacy tools and/or assessment to use in a study and explore potential moderating factors which may influence the association between self-efficacy and organizational commitment such as type of industry, company culture and individual personality traits of Filipino Gen Z workers; and finally, consider a larger sample size that could strengthen the generalizability of the research finding/s. The resulting knowledge may assist organizations to develop and implement methods for cultivating a more engaged and dedicated labor force, as well as reduce turnover risk, and also suggests that organizations have to concentrate in creating an ideal work environment for employees and generations to come.

Compliance with Ethical Standards

The researchers observed the ethical welfare of the participants which allowed them the right to withdraw anytime, discussed the boundaries of the study and the results of their questionnaires if they wished to have it. The participants acknowledged the informed consent as proof of their willingness to participate and that they are not forced in any way. The full confidentiality of the participants will be treated with full responsibility as only the researchers had access to it.

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REMOTE LEARNING CHALLENGES AND COPING MECHANISMS OF GRADE 9 LEARNERS IN TAMBLER DISTRICT

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ABSTRACT

This study investigates the remote learning challenges and coping mechanisms of Grade 9 learners in Tambler District. Quantitative data were administered from the three secondary schools namely: Banisil National High School, Bawing National High School, and Colot S. Aligado IP High School. A total of 267 learners participated. The challenges were categorized into the following: Self-Regulation Challenges, Technological Literacy and Competency Challenges, Student Isolation Challenges, Learning Resource challenges and Learning Environment Challenges. These challenges were analyzed in the context of specific coping mechanisms, namely: Adaptation, Cognitive Aptitude Enhancement, Goal-setting, Peer learning, and Relaxation and Recreation Strategies. Based on the findings, it was found that Technological Competency challenges has the lowest salient met by learners. Different coping mechanisms were employed to cope with these challenges. The least commonly used method was the peer-learning which ranked fifth among other strategies. Hence, among the schools, the learners in Colot Aligado IP School have experienced the greatest extent of challenges and the lowest extent of challenges is experienced by the learners of Banisil National High School.

Keywords: *Remote Learning, Grade 9 Learners, Coping Mechanisms*

INTRODUCTION

Remote learning has been adopted as an alternative means of education even before the COVID-19 pandemic struck the whole world. Its first use was traced as early

as 1858, when the University of London became the first university to offer distance learning courses (eLearning Industry). The objectives of distance learning are straightforward. It was designed as an alternative means of learning for students, learners, and institutions that are facing difficulties when it comes to physical or face-to-face classroom setups.

However, the implementation of remote learning isn't that simple, especially on countries where the physical and support infrastructures needed for this setup aren't that readily established. For instance, Philippines ranks low when it comes to internet speed and connectivity as compared to other ASEAN countries (Philstar, 2020). Furthermore, majority of its population are in the marginalized sectors, proving that their access to laptops, computers, and conducive learning environments outside school is limited.

In National Context, during the advent of COVID-19, the Philippine school system was forced to adopt the remote learning setup to ensure the continuity of learning and prevent the educational sector from collapsing. Despite the efforts of the Department of Education, Commission on Higher Education, and other linked agencies, remote learning has been a difficult world to navigate, especially in public schools situated in rural areas. The global pandemic has exposed our current education systems' flaws and disparities. Building resilience begins with school cultures and individual attitudes toward implementing new teaching and learning strategies (Microsoft et. al, 2020).

Remote learning, despite being applied to practice by various academic institutions, is still a discipline that requires further analysis and exploration. Specifically, there's no in-depth, comprehension research that compares the effectiveness of remote learning and traditional learning.As a research gap, it is an important analysis as it will showcase the viability of remote learning as a standard means of teaching. As recently observed, June Ahn and Andre McEachin (2017) have exhibited the adverse sides of remote learning to students across secondary and primary schools. It found that students in these schools have lower Math and reading grades than those enrolled in traditional schools. It also has been shown that parents have struggled in the remote learning setup. They have expressed that their children have difficulties keeping up with their school tasks. Aside from that, they are worried that their children aren't as motivated as when they are schooling in physical classrooms.

In the Local context, Tambler District, three of its secondary schools are in agro-industrial areas—which are mostly rural in nature. Because of this, many students don't have access to stable internet connections, laptops, computers, and even smartphones. Furthermore, they experienced difficulties in coping with the modules, given that they are more used to the traditional learning approach rather than the self-taught one.

To respond to this problem, schools must create strategies to further lessen the problems experienced by learners in the remote learning setup, analyze all the limitations of remote learning,and reveal the different strategies learners used, and how it can be improved for future implementation. It is along with these reasons that the researcher was prompted to pioneer this study.

Research Questions

This study aimed to investigate the outcomes of remote learning challenges and coping mechanisms of Grade 9 learners of Tambler District. Specifically, the following research questions were addressed:

1. What is the extent of challenges encountered by the Grade 9 learners
    1.1 Self regulation challenges;
    1.2 Technological literacy and competency;
    1.3 Student Isolation;
    1.4 Learning resource; and
    1.5 Learning environment?
2. What is the most common coping mechanisms employed by selected Grade 9 learners of Tambler District
    2.1 Adaptation
    2.2 Cognitive aptitude enhancement;
    2.3 Goal- setting
    2.4 Peer-learning; and
    2.5 Relaxation and recreation?
3. Is there a significant difference in the extent of challenges experienced by the Grade 9 learners in Tambler District?
4. Based on the findings of the study, what enhanced program may be designed to alleviate the challenges encountered by the Grade 9 learners across schools in Tambler District?

METHODOLOGY

The study employed the descriptive-comparative methods research design. The primary idea of this strategy suggests that quantitative data and results provide a general picture of the research problem; more analysis. When it comes to quantitative element, descriptive-comparative.

The respondents of the study consisted of 267 Grade 9 students of Deped-Gensan Tambler District who were identified through purposive sampling.They were chosen regardless of their age and gender. The respondents were appropriated based on the school size. This technique is appropriate for this study as Cresswell, and Plano Clark (2011) implied that purposive sampling is identifying and selecting individuals or group of people who are particularly informed or experienced about a subject of interest. It covered three public high schools: Banisil National High School Bawing National High School and Colot Aligado IP High School. These participants have been engaged in remote learning for at least two years in both synchronous and asynchronous modalities.

In conducting the study, firstly, the researcher constructed a letter of permission to the Schools Division Superintendent of Department of Education in General Santos City.

Likewise, a letter of permission was also given to the Public Schools District Supervisor of Tambler District as well as to the Principals and School Head of three public high schools in the District allowing her in the conduct the study. She then asked permission to the *National Commission on Indigenous People* Regional Office to conduct the said study.

Upon the approval of the letter, she then talked to the curriculum head of Grade 9 for the administration of the said study. With that, informed consent was sought from the participants prior to their involvement. Before students signed the informed consent form, they were oriented about the objectives of the study and the extent of their involvement. They were also briefed about the confidentiality of information, their anonymity, and their right to refuse to participate in the investigation.

Finally, the respondents were informed that there was no additional cost from their participation. The questionnaire was conducted online via Google form, Facebook Messenger and/or Google meet, respectively for the learners who have access in the internet such as in the case of Banisil National High School and Bawing National High School. For the case of learners in Colot Aligado IP High School where technology is hardly reached and gadgets such as cellular phones were not widely available, a hard copy of the questionnaires were given to them provided that health protocol and social distancing were followed. And since most of them speak Blaan dialect, an interpreter-teacher who is a pure blooded Blaan together with the researcher visited the school premise to guide them in answering.

RESULTS AND DISCUSSION

The extent of challenges encountered by the Grade 9 learners in the remote learning scheme is described using five indicators. These are self- regulation challenges technological literacy and competency, student isolation, learning resource, and learning environment.

Table 1 The extent of challenges encountered by the Grade 9 learners in the remote learning scheme in terms of Self-regulation Challenges (SRC)

Indicator	WM	Std. Deviation	Description
I…			
1. delay tasks related to my studies so that they are either not fully completed by their deadline or had to be rushed to be completed.	3.22	1.106	Moderate Extent

2. fail to get appropriate help during online or modular classes.	3.10	1.047	Moderate Extent
3. lack the ability to control my own thoughts, emotions, and actions during online or modular classes.	3.15	1.109	Moderate Extent
4. have limited preparation before an online or modular class.	3.20	1.138	Moderate Extent
5. have poor time management skills during online or modular classes.	3.02	1.095	Moderate Extent
6. fail to properly use online or modular peer learning strategies (i.e., learning from one another to better facilitate learning such as peer tutoring, group discussion, and peer feedback).	3.02	1.088	Moderate Extent
Mean	**3.12**	**.64666**	**Moderate Extent**

Legend: Very high extent- 4.50-5.00; Highly extent- 3.50-4.49; Moderately extent- 2.50-3.49;Low extent- 1.50-2.49; Very low extent-1.00-1.49

Table 1 show the extent of challenges encountered by the Grade 9 learners in the remote learning scheme in terms of Self-Regulation Challenges (SRC). The top two challenges encountered by the learners are they delay tasks related to their studies so that they are either not fully completed by their deadline or had to be rushed to be completed $(M = 3.22)$ and they have limited preparation before an online or modular class $(M = 3.20)$. Both are described as moderate extent.

This means that the learners sometimes fail to perform their assignments and activities on time hence they cram as the deadlines are about to come. In addition, they have poor time management skills during online or modular classes $(M = 3.02)$ and they fail to properly use online or modular peer learning strategies for example learning from one another to better facilitate learning such as peer tutoring, group discussions, and peer feedbacks $(M = 3.02)$.

This has a mean of 3.12 which is also described as moderate extent. This result indicates that the learners meet challenges when they do not do their tasks immediately. When they daily-dally their work, they would really be encountering challenges. The results reflect to what Zimmerman (2012) mentioned about self-regulation, stating that it is an important aspect for young learners to be able manage their actions and reactions

in various learning process. Meanwhile, those who have poor self-regulation skills would be overwhelmed by the challenges they encounter.

Table 2. The extent of challenges encountered by the Grade 9 learners in the remote learning scheme in terms of Technological literacy and competency challenges (TLCC)

Indicator	WM	Std. Deviation	Description
I…			
7. lack competence and proficiency in using various interfaces or systems that allow me to control a computer or another embedded system for studying.	3.16	1.038	Moderate Extent
8.resist learning technology.	3.10	1.094	Moderate Extent
9.am distracted by an overly complex technology.	3.06	1.117	Moderate Extent
10. have difficulties in learning a new technology.	2.96	1.051	Moderate Extent
11. lack the ability to effectively use technology to facilitate learning.	3.10	1.062	Moderate Extent
12. lack knowledge and training in the use of technology.	3.09	1.079	Moderate Extent
13.am intimidated by the technologies used for learning.	3.08	1.061	Moderate Extent
14. resist and/or am confused when getting appropriate help during online or modular classes.	2.95	1.123	Moderate Extent

15.have poor understanding of directions and expectations during online or modular learning.	3.07	1.123	Moderate Extent
16.perceive technology as a barrier to getting help from others during online or modular classes.	2.99	1.007	Moderate Extent
Mean	**3.06**	**.61930**	**Moderate Extent**

Legend: Very high extent- 4.50-5.00; Highly extent- 3.50-4.49; Moderately extent- 2.50-3.49; Low extent- 1.50-2.49; Very low extent-1.00-1.49

Relative to **Technological Literacy and Competency Challenges (TLCC)** in Table 2 the learners have encountered challenges that they lack competence and proficiency in using various interfaces or systems that allow them to control a computer or another embedded system for studying $(M = 3.16)$, they resist learning technology $(M = 3.10)$, and they lack the ability to effectively use technology to facilitate learning $(M = 3.10)$. Moreover, they meet challenges in learning a new technology $(M = 2.96)$ and in resisting or they are confused when getting appropriate help during online or modular classes $(M = 2.95)$. These are all described as moderate extent. This includes the mean of 3.06 which is also described as moderate extent. This shows that the learners have average difficulties in technological literacy. They have average knowledge on how to use various interfaces in the computers or systems that allow them to control a computer or another embedded system for studying.

They moderately have difficulties in learning the technology and they know how to facilitate their knowledge using the technology. This was reflected based from European Commission (2017) stating that in today's quickly digitizing world and information economy, digital literacy is now necessary for successfully living, studying, and working. This is the new reality of modern life, as illustrated by governments' growing worry that many citizens lack basic digital skills.

Table 3. The extent of challenges encountered by the Grade 9 learners in the remote learning scheme in terms of Student isolation Challenges (SIC)

Indicator	WM	Std. Deviation	Description
I…			
17. feel emotionally disconnected or isolated during online or modular classes.	3.11	1.132	Moderate Extent

18. feel disinterested during online or modular class.	2.91	1.132	Moderate Extent
19. feel unease and uncomfortable in using video projection, microphones, and speakers.	3.09	1.112	Moderate Extent
20. feel uncomfortable being the center of attention during online or modular classes.	3.25	1.155	Moderate Extent
Mean	**3.09**	**.78341**	**Moderate Extent**

Legend: Very high extent- 4.50-5.00; Highly extent- 3.50-4.49; Moderately extent- 2.50-3.49; Low extent- 1.50-2.49; Very low extent-1.00-1.49

In the case of **Student Isolation Challenges (SIC)**, the top is the students feel uncomfortable being the center of attention during the online or modular classes $(M = 3.25)$ and the lowest is they feel disinterested during the online or modular classes $(M = 2.91)$. Taken as a whole, it obtains a mean of 3.09 and is described as moderate extent. This shows that the students sometimes feel alone in their online classes. They feel disconnected and uneasy when they are called or tease during online classes.

They also sometimes feel not interested in the topics at hand. Curtis (2020) stated that when students are solitary, they may contact instructors at all hours, make many attempts to engage in nonacademic issues, and speak negatively about themselves.

Table 4. The extent of challenges encountered by the Grade 9 learners in the remote learning scheme in terms of Learning Resource Challenges (LRC)

Indicator	WM	Std. Deviation	Description
I…			
21. have an insufficient access to library resources.	3.12	1.047	Moderate Extent
22. have an insufficient access to laboratory			Moderate Extent

equipment and materials.	3.22	1.124	
23. have limited access to textbooks, worksheets, and other instructional materials.	3.19	1.140	Moderate Extent
24. experience financial challenges when accessing learning resources and technology.	3.18	1.126	Moderate Extent
Mean	**3.18**	**.77417**	**Moderate Extent**

Legend: Very high extent- 4.50-5.00; Highly extent- 3.50-4.49; Moderately extent- 2.50-3.49; Low extent- 1.50-2.49; Very low extent-1.00-1.49

On the **Learning Resource Challenge (LRC)**, the highest among the indicators is the insufficient access to laboratory equipment and materials $(M = 3.22)$ and the lowest is the learners have an insufficient access to library resources $(M = 3.12)$. The mean of 3.18 is described as moderate extent. This shows that the learners have moderate extent of challenges in the learning resource. It was also posited by Padmanabhan (2013) stating textbooks and resource materials are vital elements for effective teaching and learning. Furthermore, adequate human resource planning for appropriate instructional materials and physical infrastructure to support educational initiatives is vital.

Table 5. The extent of challenges encountered by the Grade 9 learners in the remote learning scheme in terms of Learning environment Challenges (LEC)

Indicator	WM	Std. Deviation	Description
I…			
25. experience online distractions such as social media during online or modular classes.	3.33	1.158	Moderate Extent

26. experience distractions at home as a learning environment.	3.26	1.123	Moderate Extent
27. have difficulties in selecting the best time and area for learning at home.	3.17	1.090	Moderate Extent
28. home set-up limits the completion of certain requirements for my subject (e.g., laboratory and physical activities).	3.21	1.120	Moderate Extent
Mean	**3.24**	**.80931**	**Moderate Extent**

Legend: Very high extent- 4.50-5.00; Highly extent- 3.50-4.49; Moderately extent- 2.50-3.49; Low extent- 1.50-2.49; Very low extent-1.00-1.49

Table 5 presents the extent of challenges encountered by the Grade 9 learners in the remote learning scheme in terms of Learning Environment Challenges (LEC). On top of the responses is they experience online distractions such as social media during online or modular classes $(M = 3.33)$ and the lowest is they have difficulties in selecting the best time and area for learning at home $(M = 3.17)$. Both are described as moderate extent. This has an over-all mean of 3.24 which is also described as moderate extent. This means that the learners have also experienced average extent of challenges in terms of the learning environment. Although they have experience online problems such as limited home learning environment connectivity and social media distraction, these are just to average extent. The results reflect to what UNESCO (2020) mentioned that learning environment challenges issues can have an impact on a range of educational components, including the crucial student-teacher contact for student progress. However, this demonstrated that learning can continue through distant education, particularly through digital methods, without students' physical presence in classrooms, despite some limitations.

Table 6. Summary on the extent of challenges encountered by the Grade 9 learners in the remote learning scheme

Indicator	WM	Std. Deviation	Description
Self-Regulation Challenges (SRC)	3.12	.64666	Moderate Extent

Technological Literacy and Competency Challenges (TLCC)	3.06	.61930	Moderate Extent
Student Isolation Challenges (SIC)	3.09	.78341	Moderate Extent
Learning Resource Challenges (LRC)	3.18	.77417	Moderate Extent
Learning Environment Challenges (LEC)	3.24	.80931	Moderate Extent
Over-all Mean	**3.14**	**.54898**	**Moderate Extent**

Legend: Very high extent- 4.50-5.00; Highly extent- 3.50-4.49; Moderately extent- 2.50-3.49; Low extent- 1.50-2.49; Very low extent-1.00-1.49

In the summary, **the learning environment** is the **highest challenge** met by the learners with **mean of 3.24**. This is followed by **learning resource challenge** with **mean of 3.18**. The least challenge they met is in the **technological literacy and competency challenge with the mean of 3.06**. **An over-all mean of 3.14 is described as moderate extent.** This implies that the learners have encountered many distractions through social media and even at home distractions. However, these distractions are manageable. This is in line with what Hobbs (2020) said that a significant number of students have difficulties in coping up with the setup due to the absence of technologies and support infrastructure. Teachers who have no experience in remote learning also encountered difficulties in disseminating lessons and assignments. The ranking of coping strategies used by the Grade 9 learners in Tambler District are presented in table 3. The indicators include adaptation, cognitive aptitude enhancement, goal- setting, peer-learning, and relaxation and recreation.

Table 7. The ranking of coping strategies used by the Grade 9 learners in Tambler District

Coping Strategies	**SRC**		**TLCC**		**SIC**		**LRC**		**LEC**	
	f	**rank**	**f**	**rank**	**f**	**rank**	**f**	**rank**	**f**	**rank**
Adaptation	134	(2)	126	(3)	103	(5)	114	(1)	71	(1)
Cognitive Aptitude Enhancement	105	(4)	146	(1)	118	(1)	95	(2)	53	(5)

Goal-setting	120	(3)	112	(4)	107	(3)	79	(4)	58	(2)
Peer-learning	76	(5)	128	(2)	112	(2)	89	(3)	56	(3)
Relaxation and recreation	141	(1)	105	(5)	104	(4)	75	(5)	56	(4)

Legend: SRC=Self-regulation challenges; TLC= Technological literacy and competency challenges; SIC= Student isolation challenges; LRC= Learning resource challenges; LEC= Learning environment challenges

Table 7 presents the ranking of coping strategies used by the Grade 9 learners in Tambler District. Relative to **Self-regulation challenges**, the learners usually applied in relaxation and recreation (f=141), followed by adaptation (f=134), goal-setting (f=120), then Cognitive aptitude enhancement (f=105) and Peer-learning is least used in self-regulation challenges with f=76.

This supports the statement of Center for intercultural human service (2012) that relaxation can be quite beneficial in combating and managing stress and anxiety. It is necessary to always have good relaxation strategies to avoid stress.

On **Technological literacy and competency challenges**, the learners ranked cognitive aptitude enhancement as first (f=146), followed by peer-learning (f=128), then adaptation (f=126), and goal-setting (f=112) and the least used is relaxation and recreation with f=105. This was reflected based on Farah et. Al (2014) stating that the greatest significant advancements in the ability to process information have been made in computers and information technology to date. And the list of potential internal, biological upgrades has gradually grown as cognitive neuroscience has progressed.

On **student isolation challenges**, the rank 1 is using cognitive aptitude enhancement with (f=118), followed by peer-learning with f=112 in their coping strategies, then goal setting (f=107), and relaxation and recreation (f=104). The lowest is adaptation with f=103 In line with Farah et. Al (2014) statement that the amplification or expansion of core capacities of the mind by improvement or augmentation of internal or external information processing systems can be improved through different targeted interventions.

In **learning resource challenges**, the highest coping strategy of the learners is adaptation with (f=114) and followed cognitive aptitude enhancement with f=95, then peer-learning (f=89), goal-setting (f=79). The least is relaxation and recreation with f=75. In connection with Curtis (2020), he emphasized that when students are solitary, they may contact educators at all hours, make many attempts to engage in nonacademic issues, and speak unfavorably about themselves.

In the case of **learning environment challenges**, the learners consider adaptation as the highest coping strategy with f=71, then goal- setting with f=58, followed by peer-learning (56), then relaxation and recreation (f=56) The least is in using cognitive aptitude enhancement with (f=53). This was relevant as what was stated in National Geographic (2016) that Wallace and Darwin both went beyond mere adaptation to describe how organisms adapt and evolve when they developed the notion of natural selection. Wallace believed that organism evolution was linked to organism adaptability to changing environmental conditions in some way.

When we consider which among coping strategies are the most useful, it is the **adaptation** that ranked first, followed by **cognitive aptitude enhancement**, then by **relaxation and recreation**. The fourth one is **goal- setting** and then the least is **peer-learning.**

Table 8. Difference in the Extent of Challenges Experienced by the Grade 9 learners in Tambler District

Indicator	**School**					**Remark**
	I	**II**	**III**	**F**	**p-**	
	M	***M***	***M***	**ratio**	**value**	
Self- Regulation Challenges	3.12	3.13	2.70	1.068	.345	Not Significant
Technological Literacy and Competency	3.08	3.05	2.56	1.730	.179	Not Significant
Student Isolation	3.19	2.94	3.10	3.211	.042	Significant
Learning Resource	3.25	3.00	4.65	13.811	.000	Significant
Learning Environment	3.38	3.00	3.90	9.514	.000	Significant
Over-all	**3.20**	**3.02**	**3.38**	**4.063**	**.018**	Significant

Legend: I - Bawing National High School; II – Banisil National High School; III– Colot Aligado IP High School

It is shown in table 8 the extent of challenges experienced by the Grade 9 learners in Tambler District. Over-all results reveal that **there is a significant difference** in the responses of Grade 9 learners as evidenced by an **F-ratio of 4.063 and a p-value of**

.018. A p-value of less .05 (p=.018 < .05) indicates that **the difference is significant.** The **learners in Colot Aligado IP School** have experienced the highest extent of challenges **with mean of 3.38** and the lowest extent of challenges with **mean of 3.02.** is experienced by the learners in **Banisil National High School.**

It is also noted that **student isolation** $(F = 3.211,\ p = .042)$, **learning resource**, $(F = 13.811,\ p = .000)$, **learning environment** $(F = 9.514,\ p = .000)$ remarked **significant.** It is still the learners in **Colot Aligado IP High School** who have experienced the **highest mean in learning resource and learning environment**, while the learners in **Bawing National High School** have experienced the highest in **student isolation.**

On the contrary, **the learners do not differ in their experienced** challenges in **self- regulation challenges** and **technological literacy and competency** as supported by a p-value of greater than .05.

Intervention Program

The study examined the remote learning challenges and most common coping mechanism of Grade 9 learners. Technological competency challenges was the least challenge met by the learners and the least strategy they used was peer-learning. To address the challenges, Synchronized Oral reading through Project E.D.O.N.G. was created. It is an acronym that stands for "Educational Dynamic Over-the-air Networked Guidance."

This innovative FM-based reading program is designed to provide educational support to individuals who lack reading fluency. Utilizing the power of radio waves, **E.D.O.N.G.** provides a unique platform for learning that is accessible to anyone with a radio receiver and/or lapel. The program is designed to promote literacy and enhance critical thinking skills, with a focus on providing learners with the tools they need to succeed. By harnessing the power of radio technology, it is helping to bridge the digital divide with the use of “Read After Me” Series of Dr. Genoveva Melendez Ablanque and provide a pathway to educational success for individuals around the world. The primary goal of Synchronized Oral Reading through Project E.D.O.N.G “Educational Dynamic Over-the-air Networked Guidance” session for learners of Banisil National High School can be a dynamic and engaging way to deliver content, particularly for learners who may struggle with traditional instructional methods. By using music, sound effects, and other multimedia elements, this project can help to capture students' attention and keep them engaged in the learning process.The impact of this will depend on a variety of factors, including the quality of the instructional materials, the expertise of the instructors, and the level of support provided to learners. However, by providing access to high-quality educational content and supporting learners' engagement and comprehension, Project EDONG can be an effective way to improve literacy outcomes and enhance educational opportunities for learners of all ages.

Conclusions

Based on the result of the study, it has been found that the learning environment of these learners is the biggest hindrance that they face. It is followed by self-regulation challenges or the personal struggles and difficulties they encounter in the remote learning setup. Meanwhile, learning resource challenges follow and technological competency challenges was the least challenge they met, respectively. The study discovered that adaption remains to most utilized strategy so that they can cope with isolation challenges, as inherently brought by the pandemic. It is followed by improving their cognitive skills so that they can learn even in the absence of teachers. The least strategy they used was peer-learning. Then, the study unveiled that there is a significant difference, the Grade 9 learners of Colot Aligado IP High School experience the severity of challenges that come along with the remote learning setup. However, this is no longer surprising. After all, the school is situated in a far-flung area, with limited to no access to the internet and other online infrastructures. On the flip side, the learners of Banisil National High School and Bawing National High School are slightly doing better in handling the challenges brought by remote learning. This is due to the proximity of the school to facilities and resources needed to execute online or modular learning.

Recommendations

In the light of the findings from the data, the researcher recommends that the teachers in the schools of Tambler District should employ Synchronized Oral Reading Through Project E.D.O.N.G and coordinate with the DepEd Division to tie up with corresponding departments and agencies, such as the Department of information and Communications Technology, to have a partnership with the Department of Education-Schools Division of General Santos City. This partnership entails a program that would enhance the technological literacy of the learners, especially those belong to remote areas. Since peer-learning is the least strategy used by learners. Learners must be encouraged to talk with one another, share ideas, and allow them to freely express their thoughts. Moreover, they should continually use the available tools to connect with their classmates, such as smartphones, laptops, and computers. Lastly, encourage the Department of Education to prioritize the development of these IP and far-flung schools, especially in the aspect of technology provision and literacy through synchronized oral reading through Project EDONG.

Compliance with Ethical Standards

The author had emphasized to the respondents that they don’t have conflicts of interest regarding the research, authorship, and/or publication of this endeavor. The author accomplished this study in compliance with the research ethics protocol. Informed

consent was given to each respondent before the conduct of the study. The data were treated with utmost confidentiality

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RESEARCH COMPETENCIES AND PERCEIVED DIFFICULTIES ENCOUNTERED BY GRADE 12 STUDENTS IN THESIS WRITING AT NATIONAL UNIVERSITY BULACAN INCORPORATED: A BASIS FOR DEVELOPMENT OF CAPACITY ENHANCEMENT PROGRAM

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ABSTRACT

As part of learners' curriculum, completion of a thesis has always been perceived as a challenge. Even though writing is one of the core academic skills being taught from primary level, academic paper is different. Several studies showed factors affecting thesis writing. This led the researchers to conduct this study utilizing descriptive comparative research design to review the association and differences between research competencies and perceived difficulties in thesis writing. The researchers selected two hundred eight (208) Grade 12 students from STEM, ABM, and HUMSS strands through stratified random sampling method. Based on the results of the study, it was revealed that there is a highly significant difference in the information seeking (F=18.7; p=0.001) and methodology skills (F=30.0; p=0.001) of the students. Moreover, it showed that respondents have significant differences in terms of personality (F=5.3; p=0.01) and linguistic factors (F=5.56; p=0.048). Findings also revealed significant association between personality factors (Pearson = -0.141; -0.257) and sociocultural (Pearson = -0.214; -0.304) with research competencies. This implies that as the research skills of the Grade 12 students improve, it would greatly help them in minimizing the challenges in completing thesis writing. The researchers look forward to this study being utilized as a useful reference by future researchers who would be exploring further the connections between research competencies and perceived difficulties in thesis writing. The researchers recommend looking further on sociocultural and its effect on thesis writing. Lastly, an interview to extend the clarity of the data from survey questionnaires.

Keywords - *thesis writing, personality factors, sociocultural factors, linguistic factors, research skills, research competency*

INTRODUCTION

Thesis-writing gives students a chance to contribute new findings to their areas of concentration and is a significant element of academic achievement. This course involves literature evaluation, data collecting, data analysis, as well as having a well-established research question or hypothesis for conducting a deep study of a certain topic. Organizing a thesis involves planning, presentation and orderly development and presentation of the ideas, arguments, and results. It is a record of the subject areas studied by a student where the student can also demonstrate his or her capability of studying individually as well as showing rationality and communication skills. Thesis writing provides definite skills that are useful in students' further academic and occupational progress.

National University has been recognized as a research and teaching institution. In a recent final research defense in Practical Research 2 subject,13 out of 14 groups got high scores in usage of statistical treatment, grammar and spelling, review of literature, and data gathering. However, the researchers could not remove in the picture the actual experiences of the students while conducting the study. It includes choosing the right topic, looking at related studies, proper choosing of methodologies to be used, writing in a thematic manner, incorrect format and even issues within researchers' collaboration. Thesis writing challenges among Master students and he concluded that even these Palestinian MA students have difficulties in 1. Selecting appropriate topic; 2. Methodology Skills; 3. Linguistic and Writing issues; 4. Lack of confidence in writing; 5. Citation and Documentation challenges; 6. Insufficient feedback; and 7. Limited resources (Abu Alyan, 2022). With this, the researchers decided to look into these aspects further.

One of the four macro skills in language is writing. Writing skills do not just include the physical act of writing. Skills like researching, planning and outlining, editing, revising, spelling and grammar, and organization are critical components of the writing process (Kaplan, 2024). Also, writing is a necessary skill in the modern world. Most people have a mobile device that they use for e-mailing, social media, as an alarm clock to start the day, reading the news, searching for information, ordering food, managing transportation (e.g., monitoring traffic, accessing public transit), or for relaxing pursuits, such as watching a movie or listening to music. However, many students struggle with composing longer prose, especially for academic tasks (Dunn, 2021) .

In the educational field, academic writing may include essays, research papers or thesis, reports and so on. In actuality, most of the studies show difficulty mainly in academic writing. Conducting a research or writing thesis is conducted globally to address opportunities or to answer questions that are significant to different fields. In general, an academic paper like writing research seeks to answer certain questions which so far have not been answered or studied already but the outcomes may change depending on circumstances. In the study of Earl Robert Babbie, research is a systematic inquiry to

describe, explain, predict, and control the observed phenomenon (Qiu, Qui, and Zeng, 2022).

In line with this, academic writing needs a lot of study time and practice in order to develop learners' writing skill (Oshima and Houge, 2023). Also, research does not come without its challenge from exploring new ideas to discussions of findings (Chartier, 2023). Conducting a research study is a difficult task where students have to acquire a deeper knowledge in the target field and plan the study according to a fitting research objectives and methodologies (Qasem & Zayid, 2019).

Additionally, lacking local learning experiences, difference in learning expectations, and social isolation (Ma, 2020). Locally, it is pointed out that challenges include difficulties in research and statistical tools, expressing knowledge and ideas, identifying relevant research problems, and writing literature reviews (Pangket, 2023). Moreover, when it comes to the difficulties faced by thesis writers, money plays an important role in practically all attempts. Communication, limited resources, and presenting ideas are all frequent financial issues (Natividad-Franco, 2022) . As proposed in Sound Writing, The Six-Step Process was established which focuses on articulating of ideas, gathering of knowledge, identifying patterns, formulating questions that respond to the prompt, listening to evidence, and developing a working thesis. A working thesis is essential in the early stages of writing because it helps you read selectively, in the same way that your issue-based question guides your inquiry. Reading raises questions, helping you see what you know and need to know, and challenging you to read on (Chun et.al, 2020).

Learners might have engaged in thesis writing without knowing the basic factors or what difficulties may face in the process of completion. It might be the students' personality factors itself, or their society and cultural factors, or even the linguistic factors. Nevertheless, in order to reveal the difficulties in research writing, further research of the factors on the difficulties of writing thesis is needed. Therefore, this research would like to analyze the differences in research competencies and perceived difficulties encountered by Grade 12 students. In addition, the researchers will look into the association of research competencies and perceived difficulties in thesis writing. The findings of the researchers will aid in proposing a research capacity enhancement program. This program is targeted support that is suited to the students' challenges, enhancing academic support systems, and strengthening students' research abilities.

Review of Related Literature

Information Seeking Skills

These skills are important for academic success, professional development, and personal decision-making. Information-seeking is driven by recognizing an information gap or a specific information need. These skills can enhance chances of finding relevant and reliable information. Hence, these are the following methods of information seeking (1) online search; (2) library research; (3) expert consultation; (4) peer communication; (5) literature review; (6) observation and experiment; (7) professional networks and

conference; and (8) social media and online communities. The best results are frequently obtained by combining several methods to increase knowledge, make well-informed judgments, and remain up to date with the most recent advancements in the areas of interest (Md. Ashikuzzaman, 2023). Moreover, the effective information seeking such as intelligent searching, critical source evaluation, and systematic organization tends to have a high academic achievement (Weber et al., 2018).

Methodology Skills

These skills are necessary for conducting research, gathering and analyzing data, and approaching problems systematically. These are part of the research where the researcher finds confusion to assess the appropriate methodology used in their research paper. Students find it difficult to apply in designing experiments, collecting data, and applying statistical analysis. Appropriate methodology used in research is essential to ensure reliability and validity of the results (Diocos, 2022). An appropriate methodology helps control for any biases, provides a clear framework for data collection and analysis, and ensures the reliability and accuracy of the results. It enables researchers to methodically approach study issues and hypotheses, improving the generalization and the consistency of the results (Hassan, 2024).

Linguistic Factors in Thesis Writing

From that, the most difficulties that the students found in their writing thesis are related to their English proficiency is still low and limited (Lestari, 2020). Hence, that becomes the first cause that they cannot develop their writing thesis well. Most of the students are having difficulty in using English grammar, choosing the right vocabulary, spelling, and punctuation correctly (Fitria, 2022). It is also reported that language proficiency emerged as a main difficulty like avoiding grammatical errors, unfamiliarity with specific terms (Farizawati, Cendana & Nuraiza, 2024).

Personal Factors Thesis Writing

These factors have a crucial role in thesis writing. Individual student traits have a vital role in navigating the challenging process of writing a thesis. These traits include intrinsic motivation, self-efficacy, time management, and prior research experience. Students with high intrinsic motivation in their abilities were more likely to persevere through challenges (Criado-Davila et al. 2024) or it could be due to poor self-esteem (Farizawati, Cendana & Nuraiza, 2024). Moreover, one of the key reasons causing challenges in writing a thesis is the students' lack of conceptual understanding about the necessary learning. The participants showed that they lacked critical thinking, applied theory skills, and had failed to establish the limits of a research problem while selecting a research topic. They also struggled to choose the right research strategy, method, and data gathering tools according to (Ameen et.al, 2019). In addition, the difficulties of writing a thesis include inappropriateness in presenting different chapters of the research and lack of academic writing skills (Rizwan, 2022).

Sociocultural Factors Thesis Writing

It is said that students tend to have difficulty in understanding the culture department of the university or the educational institution regarding the format of thesis

writing. This contributes to the misalignment and multiple revisions (Puspita, 2021). Also, sociocultural issues affect the students in thesis writing. Cultural norms and expectations, such as adherence to established frameworks that may hinder creativeness, have an impact on undergraduates' academic methods and cause them to struggle with writing their theses. Furthermore, students' readiness and confidence in writing are influenced by their educational backgrounds, which are affected by their cultural preferences (Rizwan, 2022). Additionally, learners may collaborate and help each other in editing, revising, and improving their academic papers through peer discussion (Motlhaka, 2020). Academic deficiency could be due to lack of some academic writing skills and their limited knowledge about thesis writing and research whereas the socio-cultural barriers are lack of support from supervisor and from the family, lack of cooperation of the sample for the research, and insufficient academic background (Bakhou & Bouhania, 2020)

Calibration is associated with learning and performance. Hence, there is a need for school institutions and teachers to offer strategies and tools to assist students improve their writing skills. For example, it helps if the teacher offers a rubric or a description of the required components, as well as some examples of high- and low-quality examples. In this case, a parameter of what should and should not be done is set. Teachers should consider the characteristics of each learner when providing intervention to address the motivational and writing skill challenges of students, such as the planning stage of writing a research. Jotting down notes of each idea can greatly assist. Some writers like to use graphic organizers to define key ideas, and then sub points or examples. This may give students an illustration of what they should do to the next steps (Kolovelonis, 2024).

This study was anchored on constructivism theory by Jean Piaget and Lev Vygotsky. This theory highlights that knowledge is constructed by individuals based on their experiences and interactions with the world. Based on Piaget's theory, children acquire knowledge at different stages of cognitive development through interactions with their surroundings. Moreover, Vygotsky's theory emphasizes the social component of learning, social interaction and cultural context are essential for the development of cognitive abilities. These two theories support the idea of learners actively engaging in their own learning process. (Constructivism Learning Theory & Philosophy of Education, 2024)

In this modern era that advancement of research is becoming a trend and being focused by educational institutions, it is essential to determine what are the challenges encountered by the students. Identify if the teachers are knowledgeable about it and what are the initiatives they do. Given that there are tools that may be used for efficient thesis writing, teachers must focus as well in helping students on their vocabulary and language skills as these skills are fundamental in starting and finishing of their academic writing.

Conceptual Framework

The framework represents the summary of the research that explains the processes involved. This directs the researchers in coming-up with a series of actions required in the entire duration of the given educational research.

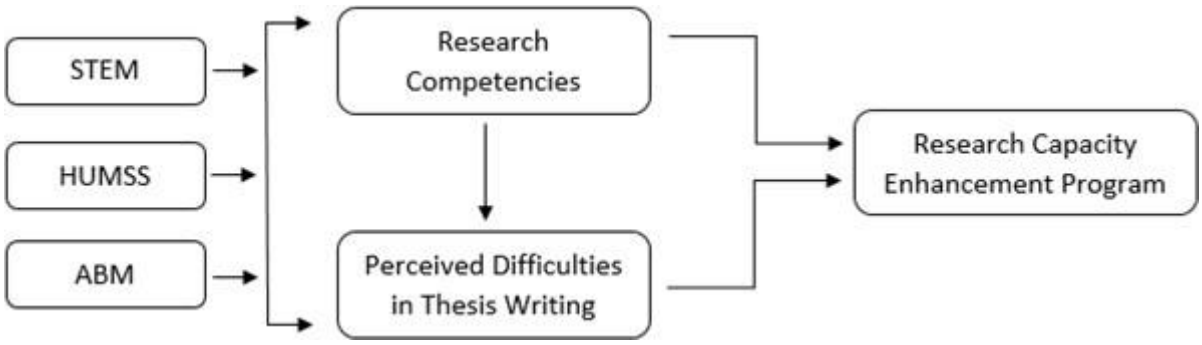


Figure 1. Conceptual Framework

Research Questions

This study aims to explore the differences in research competencies and encountered difficulties in thesis writing and the association between the mentioned variables of Grade 12 students of STEM, HUMSS, and ABM at National University Bulacan during the Academic Year 2023 – 2024.

Specifically, this research aims to address the following research questions:

1. How may the research competencies be described by the students in terms of:
   1.1 Information seeking; and
   1.2 Methodology skills?
2. How may the students perceived difficulties in thesis writing be described in terms of:
   2.1 Personality;
   2.2 Socio cultural; and
   2.3 Linguistics?
3. Are there significant differences on the research competencies and perceived difficulties in thesis writing among the strands?
4. Is there a significant association between students' research competencies and perceived difficulties in thesis writing?
5. What capacity enhancement program can be developed based on the result of the study?

Hypotheses

This study was guided and tested by the following hypotheses:

There is no significant association between students' research competencies and perceived difficulties in thesis writing.

There is no significant difference between the research competencies and perceived difficulties in thesis writing among Grade 12 STEM, HUMSS and ABM strands.

Significance of the Study

The purpose of the study was to explain the differences in research competencies and perceived difficulties encountered by Grade 12 students in thesis writing and look into the association between the said variables. The research findings may help the

students be knowledgeable of the opportunities they have in thesis writing. Hence, could focus on addressing it. As for teachers, they may use this as a basis of which to focus on and elaborate during research classes.This may offer important insights about how a student's completion of a thesis is affected by the thesis writing research competencies and perceived difficulties. These results may be used by educational institutions to initiate a prescribed action to better meet and further improve students' thesis writing ability. Lastly this study may provide insights to future researchers on ideas about the research gap and may use the capacity enhancement plan in the next study.

METHODOLOGY

Locale of the Study



Figure 1. Map of Baliwag, Bulacan. Uploaded by RMN Network on April 23, 2020



Figure 2. NU Bulacan Incorporated. Uploaded by NU Baliwag at wikimapia on 2020

This study was conducted at NU Bulacan Incorporated. It is located at SM Baliwag Complex, Doña Remedios Trinidad, Highway, Brgy. Pagala, Baliuag, Bulacan, Philippines, 3006.

Respondents and Sampling

The respondents in this study are the Senior High School Students of National University Bulacan Incorporated. The study aims to investigate the differences in research competencies of the Grade 12 STEM, HUMSS, and ABM students and perceived difficulties in thesis writing. Moreover, the researchers also analyzed the association between research competencies and perceived difficulties in thesis writing. In gathering the total number of respondents in this study, the researchers utilized Raosoft Calculator with a 5% margin of error and 95% confidence level. The researchers came up with a total of 208 samples and this was equally distributed as follows: STEM (319 : 147); HUMSS (55 : 25); and ABM (77 : 36).

The respondents were selected using stratified random sampling techniques in which the population of Grade 12 students were stratified based on strands then used proportionate sampling to maintain correct representations from each strand.

Research Design

This study utilized the non-experimental quantitative research design. Specifically, the descriptive evaluation, comparative, and correlational were used. Descriptive evaluation was employed to describe the research competencies of the students in terms of information seeking agreement and methodology skills satisfactory. This was also applied to describe the students' perceived difficulties in thesis writing in terms of personality, socio-cultural, and linguistics. Additionally, descriptive comparative quantitative research design was used to assess the significant differences on the research competencies and perceived difficulties in thesis writing among the strands. Lastly, descriptive correlational quantitative research design was utilized to determine the significant association between students' research competencies and perceived difficulties in thesis writing.

The subject of the study will be selected Grade 12 Senior High School students from the National University Bulacan Incorporated. The teachers are not included as the researchers would like to focus on the side of learners. Two adopted survey questionnaires were used from Natividad-Franco, V. (2022) and Meerah, et.al (2012). The questionnaires included the statements about information seeking skills, methodology skills, personal, social, and linguistic factors. The questionnaires will be uploaded in google form. Descriptive statistics like weighted mean and standard deviation were used to analyze the data gathered. The researchers did not conduct a post interview due to limited time allocated for completing the study, a relatively important source of insights that could support the analyzed numerical data. Hence, triangulation was not administered.

Data Gathering Procedures

The researchers looked for standardized questionnaires for research competencies and perceived difficulties in thesis writing. These were validated by the research professor to ensure alignment on the objectives of the study. Secondly, the researchers submitted a letter of request to conduct the study and request for the population of the target respondents. Upon the receipt of the approval of the letter from the Schools Academic Office, the data-gathering procedure in the participating Senior High School Strands commenced. The researchers administered the questionnaires using Google Form to the respondents through Facebook Messenger Group Chats and a consent and assent letter were used and a clear instruction was indicated before the actual instrument. The gathered responses were checked if it had satisfied the required number of samples.

Instrumentations

This study utilized the two different Likert-scale instruments to assess the students' research competencies and perceived difficulties in thesis writing.

Research Skills

To identify the research competencies of Grade 12 students, the researchers adopted the 5 point Likert Scale instruments crafted by Meerah, et.al (2012) on the study entitled “Developing an Instrument to Measure Research Skills’’ which is divided into two parts; Information Seeking Skills (26 items) and Methodology Skills (13 items). The reliability of the scale was measured through Cronbach’s alpha that resulted in reliability ranging from 0.78 – 0.93.

Perceived Difficulties in Thesis Writing

Second survey-questionnaire was adopted from study of Natividad-Franco (2022) entitled “Difficulties and challenges of Library and Information Science students in thesis writing during the pandemic’’ but was adapted by Natividad-Franco from Puspita (2019) which focuses on the learners’ difficulties in Thesis writing in terms of Personality (19 items), Socio-Cultural (7 items), and Linguistic Factors (4 items). The three factors are measured through 5-point Agreement Likert Scale. The reliability of the scale was measured through Cronbach’s alpha that resulted in .945, .924, and .919 for personality, sociocultural, and linguistic factors respectively.

Data Analysis

The data gathered from research competencies and perceived difficulties in thesis writing were tabulated in Jamovi, a statistical spreadsheet software. Descriptive statistics were applied in analyzing the responses including frequency, weighted mean and standard deviation. The mean and standard deviation were utilized to describe the information seeking, methodology skills, personality factors, sociocultural factors and linguistic factors. It is further analyzed using inferential statistics, specifically, One-way Analysis of Variance was used to determine if there are significant differences between research competencies of the Grade 12 Students from STEM, HUMSS and ABM including the differences on their perceived difficulties in thesis writing. Multiple regression analysis was employed to determine the significant association between students’ research competencies and perceived difficulties in thesis writing.

RESULTS

In this study, 147, 25, and 36 respondents from Grade 12 STEM, HUMSS, and ABM, respectively, were included in descriptive and inferential analyses. The results aimed to assess and compare the differences between the personalities and social behavior of each birth order and to determine any statistically significant differences experienced by these birth orders. One-Way ANOVA was implemented individually on personality and birth order to find the significance level and a post-hoc analysis was conducted to provide specific differences between the different birth order positions and the different personalities and social behaviors.

Table 1. *Total Mean of Research Competencies*

Skills	STEM		ABM		HUMSS	
Information Seeking	3.977	A	3.790	A	4.149	A
Methodological	3.958	S	3.390	SS	4.169	S

Legend:	*Rating Scale*	*Description*	
	1.00-1.80	*Strongly Disagree (SD)*	*Very Poor (VP)*
	1.81-2.60	*Disagree (D)*	*Poor (P)*
	2.61-3.40	*Neither Agree nor Disagree (N)*	*So so (SS)*
	3.41-4.20	*Agree (A)*	*Satisfactory (S)*
	4..21-5.00	*Strongly Agree (SA)*	*Very Satisfactory(VS)*

Table 1 presents the total mean scores for research competencies, including information-seeking and methodological skills, across the STEM, ABM, and HUMSS strands. HUMSS garnered the highest mean (4.149) with the verbal interpretation of "Agree" while ABM garnered the lowest mean of (3.790) with the verbal interpretation of "Agree". Moreover, in terms of methodological skills, HUMSS garnered the highest mean of (4.169) which was interpreted as satisfactory while ABM garnered the lowest mean of (3.390) which was interpreted as So so (SS). Furthermore, STEM students remained in between ABM and HUMSS strands.

Table 2. *Total Mean of Perceived Difficulties in Thesis Writing*

	STEM		*ABM*		*HUMSS*	
Personality Factors	2.974	N	3.031	N	2.808	N
Socio Cultural Factors	2.715	N	2.813	N	2.606	N
Linguistic Factors	2.816	N	2.986	N	2.600	D

Legend:	*Rating Scale*	*Description*
	1.00-1.80	*Strongly Disagree (SD)*
	1.81-2.60	*Disagree (D)*
	2.61-3.40	*Neither Agree nor Disagree (N)*
	3.41-4.20	*Agree (A)*
	4..21-5.00	*Strongly Agree (SA)*

Table 2 shows the overall mean of students' perceived difficulties among strands in thesis writing. Among strands, the students find neither agree nor disagree from the perceived difficulties such as personality factors, socio-cultural, and linguistic factors in thesis writing. ABM strands garnered the highest mean among the perceived difficulties factors while HUMSS garnered the lowest perceived difficulties factors in thesis writing.

Table 3. *Regression Analysis of Research Competencies and Difficulties in Thesis Writing*

		Pearson	*p*	*Interpretation*	*Decision*
Personality Factors	Information Seeking	-0.141	0.042	Significant	Reject the Null Hypothesis
	Methodology	-0.257	0.001	Highly Significant	Reject the Null Hypothesis

	Information Seeking	-0.214	0.002	Highly Significant	Reject the Null Hypothesis
Sociocultural Factors	Methodology	-0.304	0.001	Highly Significant	Reject the Null Hypothesis
	Information Seeking	-0.113	0.104	Not Significant	Accept the Null Hypothesis
Linguistic Factors	Methodology	-0.130	0.061	Not Significant	Accept the Null Hypothesis

Table 3 shows the regression analysis of research competencies and difficulties in thesis writing. The calculated p-values for information seeking and methodology in personality factors (0.042 and 0.001) and socio-cultural factors (0.002 and 0.001) are less than the alpha value (0.05). This indicates that personality factors and socio-cultural factors are significantly associated with research competencies. Consequently, the null hypothesis is rejected, signifying highly significant associations between research competencies and personality as well as socio-cultural factors. However, the calculated p-values for information seeking and methodology in linguistic factors (0.104 and 0.061) are greater than the alpha value (0.05). This means that research competency skills are not significantly associated with linguistic factors. Therefore, the null hypothesis is accepted, indicating no significant association between research competencies and linguistic factors.

Table 4. *One-Way Analysis of Variance of Research Competencies*

Groups	F	P	Interpretation	Decision
Information Seeking Skills	18.70	0.001	Highly Significant	Reject the Null Hypothesis
Methodology Skills	30.00	0.001	Highly Significant	Reject the Null Hypothesis

*Note. *p<0.05, **p<0.01,p<0.001*

Table 4 shows the one-way analysis of variance of research competencies among the STEM, ABM, and HUMSS strands. Both information seeking and methodological skills have a p-value of 0.001, which is less than the alpha value of 0.05. This implies that research competencies are highly significantly different among the STEM, ABM, and HUMSS strands. Consequently, the null hypothesis is rejected, indicating highly significant differences in information seeking and methodological skills among the STEM, ABM, and HUMSS strands in thesis writing.

To further check which strands differ significantly from one another, a post hoc analysis was conducted. The results revealed that information seeking skills and methodological skills of STEM (M=3.98 / 3.96; SD=0.227 / 0.124), ABM (M=3.79 / 3.74; SD=0.198 / 0.118), and HUMSS (M=4.15 / 4.17; SD=0.224 / 0.165) yielded p-values less

than 0.05. This indicates that there are significant differences in research competencies among the strands.

Table 5. *One-Way Analysis of Variance of Perceived Difficulties in Thesis Writing*

Groups	***F***	***P***	***Interpretation***	***Decision***
Personality Factors	5.30	0.010	Highly Significant	Reject the Null Hypothesis
Sociocultural Factors	3.29	0.077	Not Significant	Accept the Null Hypothesis
Linguistic Factors	5.56	0.048	Significant	Reject the Null Hypothesis

*Note. *p<0.05, **p<0.01,p<0.001*

Table 5 shows the one-way analysis of variance of students' perceived difficulties in thesis writing. The calculated p-value for personality factors (0.01) is less than the alpha value (0.05). This means that the null hypothesis is rejected, indicating a significant difference in personality factors among the STEM, ABM, and HUMSS strands in thesis writing. Moreover, the p-value for linguistic factors (0.048) is also less than the alpha value (0.05). Therefore, the null hypothesis is rejected, signifying significant differences in linguistic factors among the strands in thesis writing. However, for socio-cultural factors, the calculated p-value (0.077) is greater than the alpha value (0.05). This indicates that the null hypothesis is not rejected, signifying no significant differences in socio-cultural factors among the strands in thesis writing.

To confirm these results, a post hoc analysis was conducted. In terms of personality factors, the difference between STEM and ABM (p=0.681) is regarded as insignificant. On the other hand, socio-cultural factors revealed significant differences only between ABM and HUMSS (p=0.020). Lastly, difficulties in linguistic factors indicate significant differences only between ABM and HUMSS (p=0.014).

Table 6*. Proposed Capacity Enhancement Program (RCEP)*

Component	Objective	Strategy	Person Responsible	Budget
DAY 1 Chapter 1: *Introduction*	• Understand the organization of chapter 1 • Determine a research problem • Craft the research questions • Identify	• Browse through assignments and activities for topic inspiration • Create mind map of what interests me • Write objectives then amend based on feedback	Research Instructors and Strand Coordinators	Php.300

	independent and dependent variables	• Guide for writing thesis title		
DAY 2 Chapter 2: *Review of the Related Literature*	• Understand the thematic organization of RRLs • Utilize proper transitional devices in sentence construction. • Cite references format • Avoid plagiarism	• Refresh information seeking skills • Grammar Practice • Introduction of online databases like Google Scholar, ERIC, Scopus and Research Gate. • Paraphrasing and Citation Worksheets	Research Instructors and English Teachers	Php.1000
DAY 3 Chapter 3: *Research Method*	• Determine the research design, proper statistical tool, and sampling techniques • Write a research instrument • Understand data gathering from dissemination of questionnaires to collecting responses. • Familiarize common statistical tools and data measurement scales	• Critique proposed methodology • Amend proposed research instruments based on feedback and alignment on research questions. • Problem Solving through Statistical Tools • Introduction of Google / MS forms	Research Instructors and Statistics Teachers	Php.300
DAY 4 Chapter 4:	• Presentation, Analyzation	• Incorporation of statistical	Research Instructors	Php. 1000

Results and Discussion	and Interpretation of data	software like Jamovi, SPSS, Raosoft and Microsoft Excel ● Data Analysis Activities	and Statistics Teachers	
DAY 5 Chapter 5: *Conclusion and Recommendations*	● Write conclusion ● Analyze what can be improved on the study	● Presentation of examples ● Practice writing skills	Research Instructors and Principal	Php.500

The results of the study may be an important baseline for the future researchers. However, the identified strands were limited as these were the only offered programs at National University, future studies may consider looking into ICT, GAS, HE and other strands. Extending the possible aid of the results in future studies, the researchers crafted a proposed Research Capacity Enhancement Program (RCEP).

Research Advising and Paneling Advocates (RAPA)

Selected teachers from the Senior High School department are encouraged to be part of Research Advising and Paneling Advocates (RAPA). This committee is mainly composed of research instructors, linguistics and mathematics teachers. They will act as overall in charge of the Research Capacity Enhancement Program. Furthermore, they will design the plan, coordinate with other departments, monitor and evaluate the results. and supervise the overall implementation. These advocates will be the same teachers to sit as research panelists and research advisers throughout the school year to ensure alignment and linear advising.

DISCUSSION

Based on the results from addressing the research problem, this study has revealed several significant findings.

1. All strands agreed on having strong information-seeking skills, with HUMSS students achieving the highest mean scores According to the study by Pabustan et al. (2024), students in the HUMSS strand possess robust information-seeking and communication skills. This strand naturally emphasizes communication skills such as speaking, writing, and critical thinking, which contribute to greater proficiency in these areas. Furthermore, all strands demonstrated satisfactory levels in methodological skills, with HUMSS students obtaining the highest mean scores. This indicates that HUMSS students exhibit superior methodological skills compared to their STEM and ABM students. This contrasts with the findings of Monica et al. (2020), which suggest that brain dominance plays a significant role

in shaping students' academic preferences and has a substantial impact on their future educational and professional trajectories. The STEM curriculum, which emphasizes analytical, logical, and critical thinking skills associated with left-brain dominance, contrasts with the HUMSS curriculum that caters to right-brained students, who tend to exhibit creativity and artistic abilities. In contrast, ABM students recorded the lowest mean scores in both information-seeking and methodological skills. This suggests that ABM students lack confidence in these two skills related to thesis writing. This finding contrasts with Gepila Jr. et al. (2022), who reported that ABM students demonstrate good methodological skills, particularly in effective data interpretation and basic problem-solving. However, their study also revealed challenges with critical thinking and innovative problem-solving, especially in real-world business contexts.

2. Overall mean of students' perceived difficulties in thesis writing. Among the STEM, HUMSS, and ABM strands, students have neutral positions regarding personality factors, socio-cultural factors, and linguistic factors. This implies that students in these strands neither agree nor disagree with these factors as difficulties in thesis writing. HUMSS has the lowest mean in all factors, indicating that students in this strand experience fewer difficulties in thesis writing, particularly in linguistic factors, compared to STEM and ABM. The nature of the HUMSS curriculum aids in improving students' communication skills. The curriculum's emphasis on understanding and analyzing a variety of social, cultural, and ethical concerns helps develop students' diverse perspectives and enhances their ability to express complex concepts (Pabustan et al., 2024).
3. The calculated p-values for information seeking and methodology in personality factors and socio-cultural factors are less than the alpha value. The null hypothesis is rejected, signifying highly significant associations between research competencies and personality as well as socio-cultural factors. As research competency skills increase, the perceived difficulties in thesis writing decrease. This finding is supported by the study of Aristya, Sabarun, and Siminto (2024), which mentioned that personality traits significantly affect the ability to write effectively, organize, and structure sentences. Additionally, poor self-esteem (Farizawati, Cendana, & Nuraiza, 2024) and comprehension of research methods and chapter 4 (Fitria, 2022) are primarily linked to difficulties in writing a thesis. However, the calculated p-values for information seeking and methodology in linguistic factors are greater than the alpha value. Therefore, the null hypothesis is accepted, indicating no significant association between research competencies and linguistic factors. This contrasts with the study by Fitria (2022), which stated that learners tend to have difficulty using English grammar, choosing the right vocabulary, and correctly applying spelling and punctuation when completing a thesis.
4. Both information seeking and methodological skills have a p-value, which is less than the alpha value. This implies that research competencies are highly significantly different among the STEM, ABM, and HUMSS strands. Consequently, the null hypothesis is rejected, indicating highly significant differences in information seeking and methodological skills among the STEM, ABM, and

HUMSS strands in thesis writing. The post hoc analysis also supports that there are significant differences in research competencies among the strands.

5. The calculated p-value for personality factors is less than the alpha value. This means that the null hypothesis is rejected, indicating highly significant differences in personality factors among the STEM, ABM, and HUMSS strands in thesis writing. This finding aligns with Puspita's (2019) study, which stated that confidence is indeed a driver of difficulties in thesis writing. Moreover, the p-value for linguistic factors is also less than the alpha value. Therefore, the null hypothesis is rejected, signifying significant differences in linguistic factors among the strands in thesis writing. However, for socio-cultural factors, the calculated p-value is greater than the alpha value. This implies that the null hypothesis is accepted, signifying no significant differences in socio-cultural factors among the strands in thesis writing. Post hoc analysis confirms all strands have significant differences among research competencies and perceived difficulties in thesis writing.

Conclusions

This study aims to evaluate the research competency and perceived difficulties among grade 12 STEM, ABM, and HUMSS students in thesis writing. Hence, these are the drawn conclusion of the researchers:

1. Among the different strands, HUMSS students demonstrate more proficient information-seeking and methodological skills compared to their STEM and ABM counterparts. Conversely, ABM students show a lack of confidence in both information-seeking and methodological skills. Research competency skills may be developed depending on the nature of the strand.
2. All strands maintain a neutral stance regarding difficulties related to personality, socio-cultural, and linguistic factors in thesis writing. The research indicates that HUMSS students experience fewer difficulties compared to STEM and ABM students, particularly in relation to linguistic factors.
3. There is a significant association between research competency skills and both personality and socio-cultural factors across all strands. This suggests that as students' research competency skills improve, their perceived difficulties related to personality and socio-cultural factors decrease. However, no significant association is found between research competency skills and linguistic factors across the strands.
4. Research competencies differ significantly among strands. Additionally, perceived difficulties related to personality and linguistic factors show significant differences among the strands, while socio-cultural factors do not exhibit significant differences.
5. The researchers crafted a proposed program entitled “Research Capacity Enhancement Program based on the findings of the study which shows that all strands have significantly different research competencies and perceived difficulties level. This program will help the students to learn holistically and improve their information-seeking and methodological skills simultaneously.

Recommendations

The study adds information on abilities of different senior high school strands in terms of academic writing. The researchers look forward to this study being utilized as a useful reference by future researchers who would be exploring further the connections between research competencies and perceived difficulties in thesis writing. To obtain beneficial data, the researchers recommend adapting standardized instruments but legally modify the contents if needed, stick on using 4 point likert scale and abandon the inclusion of neutral scale to get a clearer view of what the respondents are experiencing. Research further on association between linguistic factors and methodology skills. Furthermore, sociocultural factors are revealed having association with perceived difficulties, therefore it is recommended to look at what is the best way to divide students into groups of researchers; be it teacher's choice or students' choice. Lastly, the researchers recommend conducting a post interview with the respondents to help explain the numerical data.

Compliance with Ethical Considerations

Since selected students at National University Bulacan Incorporated were needed, some ethical issues were discussed. The researchers seek the following letters of approval: first letter to conduct the study at NU Bulacan Incorporated, second, letter for data privacy act, lastly letter for the respondents. The researcher considered the following factors that are required to protect participants' privacy and safety from ethical concerns that will be taken into account during the research process, such as confidentiality and consent. In accordance with the Data Privacy Act of 2012, also known as RA 10173, all responses provided by respondents will be kept private and utilized exclusively for academic purposes. The researchers provided the chosen respondents with crucial information about the study, such as its goal and purpose, in order to obtain their consent. Additionally, the respondents will be informed that they are under no obligation to continue with the research and can back out at any time which is included in google forms. By withholding the participants' names and other personal information from the research, the participants' confidentiality will also be guaranteed. The questionnaire only inquired about pertinent information that aided in addressing the research questions. The findings will be interpreted as what results may be revealed based on the gathered data. After the analyses and interpretation of data, the raw responses are no longer needed to be stored, hence, the researchers deleted the file and google form link.

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RESIDENTIAL PERSPECTIVES ON SOLAR POWER TECHNOLOGIES IN TANAUAN CITY, BATANGAS: LEVELS OF AGREEMENT AND OVERCOMING ADOPTION BARRIERS

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ABSTRACT

The research delved into the dynamics of solar power technology adoption in Tanauan City, Batangas, a context marked by frequent power interruptions and steep electricity charges. Utilizing quota sampling and descriptive analysis, the study examined residents' attitudes, particularly focusing on awareness, affordability, infrastructure compatibility, and government policies. Results revealed a generally positive outlook, with 62% of respondents showing agreement across the dimensions of awareness and knowledge, affordability, infrastructure compatibility, and government incentives and policies. However, a substantial proportion of respondents remained neutral (28%) or held negative views (10%), indicating significant knowledge gaps and awareness deficiencies within the community. Identified challenges encompassed a lack of understanding about solar energy benefits, financial constraints hindering affordability perceptions, concerns about infrastructure readiness, and limited awareness regarding government initiatives supporting solar adoption. Action plans guided by the Technology Acceptance Model (TAM) suggested a focus on Photovoltaic (PV) solar technology. To address these issues, a multifaceted action plan was proposed: educational campaigns to bridge gaps, advocacy for financial support, infrastructure enhancement initiatives, and awareness campaigns on government policies. These efforts aimed to empower residents with knowledge and resources, fostering a sustainable future in Tanauan City, Batangas, and contributing to broader renewable energy transitions.

Keywords: *Residential Perspective, Solar Power Technologies, Awareness and Knowledge, Affordability, Infrastructure Compatibility, Government Policy, and Incentives,*

Photovoltaic (PV) solar technology, Technology Acceptance Model (TAM), Levels of Agreement, Adoption Barriers

INTRODUCTION

Electricity is vital for daily life, which was crucial for industry, infrastructure, and societal well-being (Strielowski et al., 2021; IEEE Power and Energy Magazine, 2018). The impact of power outages on households and manufacturing firms emphasized the importance of electricity reliability and infrastructure development for safety, security, and economic development (Nduhuura 2021). The Philippines largely relied on fossil fuels to generate electricity, and challenges arose from disruptions in fossil fuel supplies due to Russia's invasion of Ukraine and the depletion of the Malampaya natural gas fields, which were projected to be exhausted by 2024 (ITA, 2022; Reuters, 2022).

In Batangas, Philippines, power outages raised significant concerns, especially for the safety and well-being of the community. The Batangas II Electric Cooperative, Inc. (BATELEC II), which supplied most of the power in the province, including Tanauan City, had a poor track record in promptly maintaining utility infrastructure and addressing line malfunctions, posing reliability challenges for electricity services. Furthermore, the challenges were intensified by much higher electricity costs, averaging 1.27 PHP per kWh, compared to other power providers (Source: BATELEC II & Meralco official websites), which added a burden to the vulnerable residents of Tanauan City.

Despite regional power challenges, Tanauan City underwent a transformative shift towards sustainable energy. According to the UN development program, Solar panels played a crucial role in achieving the Sustainable Development Goals (SDGs) by providing clean, renewable, and affordable energy solutions. These technologies were integral to addressing global challenges outlined in SDG 7 (Affordable and Clean Energy), SDG 13 (Climate Action), and SDG 9 (Industry, Innovation, and Infrastructure). The study proposed a pioneering solution — the adoption of solar power technologies aimed at empowering communities to become independent energy generators, enhancing energy security, and contributing to sustainable economic development. The research examined several key dimensions that significantly influenced consumer perceptions and behaviors, including awareness and knowledge, affordability, infrastructure compatibility, and government policies and incentives.

Research Questions

The research questions guided the study by addressing specific concerns and achieving its objectives.

1. What factor/s influence/s the level of agreement among residents in Tanauan City, Batangas towards the possibility of using solar power technologies, in terms of the following dimensions:

a. Awareness and Knowledge
b. Affordability
c. Infrastructure Compatibility
d. Government Policies and Incentives

2. What are the barriers and challenges faced by residents in Tanauan City, Batangas when considering the adoption of solar power technologies as an alternative energy source along the following dimensions:
a. Awareness and Knowledge
b. Affordability
c. Infrastructure Compatibility
d. Government Policies and Incentives

3. What alternative solar power technologies can be adopted to address and minimize power disruptions in the communities?

METHODOLOGY

Research Design

The research design was a descriptive quantitative approach that systematically addressed the residents' perceptions of the four dimensions of factors, barriers, and alternative technologies related to solar power technology. The emphasis was on the structured examination, quantification, and measurement of acceptance levels, barriers, and the exploration of technological alternatives. The use of surveys and structured questionnaires enhanced objectivity and precision by collecting numerical responses. The systematic analysis of numerical data through statistical techniques contributed to the reliability, validity, and credibility of the research findings.

Research Locale

The research focused on selected communities in Tanauan City, Batangas, which had a population of 193,936 according to the 2020 Census. It was chosen because it experiences frequent power interruptions compared to other cities in Batangas. Additionally, its proximity to the researcher's location and time constraints for data collection influenced the selection. Conducting research in a familiar local context streamlined data collection and interaction with participants. The research aimed to provide alternative power solutions for Tanauan, addressing global energy resilience and environmental sustainability issues. Its goal was to improve the quality of life in Tanauan and effect real, positive change.

Sampling Method

The sampling method was quota sampling, with 100 respondents who were heads of households, decision-makers, or homeowners within families residing in Tanauan City,

Batangas. It was chosen to ensure diverse representation and allow the research to gather insights from those directly affected by energy challenges. Barangays were categorized into large, medium, and small size groups based on population density to capture diversity within the city, ensuring a representative sample.

In terms of Sex, 70% of respondents were male, and 30% were female, suggesting potential gender-specific factors influencing attitudes toward solar power adoption. The majority of respondents, 43%, fell within the age range of 31-40. In the category of Occupation, 68% were employed. Regarding the Household Level of Income, the majority (57%) fell below the 20K income bracket. Lastly, for Household Size, 43% of respondents had 3-4 members, while 35% had 5-6 members.

Research Instrumentation

A survey questionnaire was administered to the study's participants using an online survey tool or a conventional survey tool. In section I, questions focused on the profiling of the respondents, including gender, age, occupation, monthly income, and household size. In section II, there were three questions per dimension.

For Awareness and Knowledge (a), the questions aimed to assess respondents' understanding of solar power technology and its environmental benefits. Moving to Affordability (b), the questions delved into the financial aspect of solar adoption, probing residents' willingness to allocate a budget for solar technology installation, prioritize renewable energy sources, and their interest in government subsidies or incentives for solar adoption. Infrastructure Compatibility (c) questions focused on the practical considerations of integrating solar power systems into residences, including the suitability of roofs, readiness of electrical systems, and perceived convenience of integration. Lastly, Government Policies and Incentives (d) were evaluated through questions exploring residents' awareness of government support for solar adoption, utilization of incentives, and perceptions of government support.

Cronbach’s alpha was calculated before the survey to evaluate the reliability of the 5-point Likert scale, which included demographics and four indicators: Awareness and Knowledge, Affordability, Infrastructure Compatibility, and Government Policies and Incentives. A pre-test at various locations in Batangas gathered responses from residents, which were used to assess the questionnaire's reliability before the survey began. A result of 0.70 or higher indicates that the instrument is reliable according to Statistical Consulting Group (2021). The Cronbach’s alpha figures calculated are above the threshold with the equivalent of the summary result by 0.887 suggesting that all items in the established survey questionnaire were consistent. Thus, the questionnaire is reliable.

To verify that the questions contributed to the overall research objectives, they underwent content validity. Validators were asked to check each question and compare it with the research objectives to ensure that each question addressed an objective. During this process, the logical order of questions was also checked. Face validity was

also conducted, with a grammarian serving as one of the validators. Grammar, syntax, and mechanics were checked as part of language checking to ensure ease of answering on the part of the respondents.

Data Gathering Procedure

Data was gathered either electronically or personally. After collecting the survey responses, they were tabulated to prepare for the next step in the research process: data analysis. This involved organizing the raw survey data into a structured format, typically using spreadsheet software or statistical analysis tools. Respondents ranked four dimensions in question 18, with one indicating the highest barrier to solar power adoption and four indicating the lowest. Question 19 in the survey was an open-ended question, valuable for investigating complex topics like solar power adoption in the area under review. These questions allowed for detailed and nuanced responses, offering insights beyond closed-ended questions.

Research Process Analysis

In the research study, descriptive analysis summarized key data insights by examining statistical measures like the percentage of agreement across demographic variables and the four dimensions. This approach identified patterns and trends, including residents' preferences for solar power benefits, and enabled subgroup comparisons by demographics, exploring variations in perceptions, barriers, and acceptance across population segments. Likert scale questions related to solar power adoption in the identified areas of dimensions were analyzed using frequency distribution to visualize response distribution, aiding in understanding agreement levels among respondents. Modal responses, representing common viewpoints, were particularly insightful.

Scope and Limitation

The study employed the quantitative research method to assess the level of agreement among Tanauan City residents on dimensions influencing their adoption of solar power technologies, including knowledge and awareness, affordability, infrastructure compatibility, and government policies and incentives. Using quota sampling, the study targeted 100 respondents who were heads of households, decision-makers, or homeowners within families residing in the area. While this approach aimed to capture diverse perspectives, it may not have entirely eliminated biases or ensured complete representativeness of the population.

RESULTS AND DISCUSSION

RQ#1: Factor/s that Influence/s the Level of Agreement among residents in Tanauan City, Batangas

1.1 Awareness & Knowledge: The result indicated a significant portion expressing a combination of agreement and strong agreement related to solar literacy (68%), educational participation enhancing residential knowledge about the technology (82%), and the benefits of solar technology to the environment (70%). Studies by Kumar and Manish (2021) and Jiang et al. (2022) highlighted the role of understanding environmental benefits and education in influencing public perception and acceptance of solar power. Analyzing these findings through the Technology Acceptance Model (TAM), residents' high agreement levels indicated perceived usefulness and ease of use of solar technology.

Overall, the Tanauan residents' attitudes toward solar power adoption revealed a majority awareness level of 62.3%, with 29.0% expressing neutrality and 8.7% disagreeing, highlighting the need for better education.

1.2 Affordability: The results highlighted the significant willingness of respondents to embrace solar power technology. 57% of respondents expressed readiness to allocate a portion of their budget for solar power installation, with an equal percentage prioritizing renewable energy source in household expenses. Moreover, 73% of respondents showed interest in availing government subsidies or incentives for solar power adoption. These findings resonate with existing literature emphasizing the financial attractiveness of solar power adoption and the role of government policies in promoting renewable energy. The results suggest a positive attitude toward the affordability of solar power technology among Tanauan residents, indicated a potential willingness to invest in renewable energy solutions with the right support mechanisms in place. Through the lens of the Technology Acceptance Model (TAM), respondents' attitudes aligned with the model's concepts of perceived usefulness and ease of use, reflecting their recognition of the benefits and feasibility of solar energy adoption, especially with external support.

Overall, the residential survey in Tanauan City, Batangas, highlighted affordability as a crucial factor in solar power adoption. While 62.3% of residents perceived solar technologies as affordable, 29.0% remained neutral, and 8.7% disagreed, indicating the need to address financial barriers and clarify long-term cost-effectiveness.

1.3 Infrastructure compatibility: The results illustrated varying levels of agreement among respondents regarding the compatibility of their infrastructure with solar power technology. A substantial percentage of respondents, totalling 61%, indicated that their roofs were suitable for solar panel installation, while 56% expressed positive perceptions about the readiness of their home's electrical system for solar panel integration, and an equal percentage found the integration of solar power technology convenient in their homes. However, a minority, ranging from 7% to 15%, disagreed or strongly disagreed with these statements. Addressing specific concerns raised by those expressing

disagreement or neutrality was crucial to facilitate widespread adoption, underscoring the need to overcome infrastructure-related challenges effectively.

Overall, the survey in Tanauan, Batangas revealed that 63.7% of residents perceived solar technologies as compatible with existing infrastructure, but 25% expressed doubts, indicating a need to address technical feasibility and reliability concerns. Smaller households showed higher confidence in roof suitability for solar panels, while larger households had more varied opinions, highlighting the need for tailored approaches.

1.4 Government Policies and Incentives: The results provided insights into varying levels of awareness and perception regarding government policies and incentives related to solar power adoption. For awareness, 46% of respondents indicated positive agreement, while 36% remained neutral, suggesting uncertainty. Regarding support for solar power adoption, 54% expressed positive interest, with 35% remaining neutral. Similarly, 74% perceived government support positively, while 20% remained neutral. A notable 7.2% disagreed with these statements on average. Analyzing through the Technology Acceptance Model (TAM), respondents' perceived usefulness of government measures indicated potential barriers in understanding, reflected in the sizable neutral responses. While positive perceptions suggested the perceived usefulness of government initiatives, challenges in ease of use were apparent, impacting adoption readiness.

Overall, the survey in Tanauan City, Batangas revealed that while 57.7% of respondents agreed on the importance of government policies and incentives for solar power adoption, 30.3% were neutral and 12.0% disagreed, highlighting the need for improved transparency and accessibility.

RQ#2: Barriers & Challenges adoption of Solar Power Technologies faced by residents in Tanauan City, Batangas when considering the adoption of solar power technologies as an alternative energy source

2.1 Awareness & Knowledge: The survey in Tanauan City identified knowledge gaps and a lack of awareness hindering solar power adoption, particularly among specific demographic groups like lower-income households. Tailored educational initiatives targeted vulnerable populations and emphasized the benefits of solar technology. The Technology Acceptance Model (TAM) provided insights into addressing these barriers by focusing on users' perceptions and emphasizing the benefits and ease of use of solar technology.

2.2 Affordability: The survey highlighted affordability perceptions and financial barriers influencing solar power adoption, alongside concerns about high initial costs and regulatory uncertainties. Financial assistance programs and policy adjustments could lessen these barriers, while tailored communication strategies and the application of TAM principles enhanced affordability perceptions and promoted adoption.

2.3 Infrastructure Compatibility: Perceived infrastructure compatibility significantly influenced residential adoption of solar power technology, with positive perceptions correlating with higher adoption willingness. Holistic approaches involving awareness-building, tailored policies, and targeted incentives were necessary to address infrastructure compatibility concerns. TAM principles guided efforts to alleviate scepticisms and provide clear information, ensuring all segments of the population were equipped to make informed adoption decisions.

2.4 Government Policies and Incentives: It played a critical role in shaping solar power adoption, but awareness gaps existed among residents. Targeted education and communication efforts were essential to increase awareness and clarity about available support. TAM principles informed strategies to bridge the gap between interest and action, ensuring that information reached those who needed it most and facilitated wider adoption.

RQ#3: Alternative solar power technologies can be adopted to address and minimize power disruptions in Tanauan City

Table 1 shows the proposed solutions and strategies in general aimed at overcoming the identified barriers.

Table 1. General Proposed Solutions and Strategy

Dimension	Identified	Proposal Solution	Strategy
Awareness and Knowledge	Presence of knowledge gaps and lack of awareness	Targeted educational initiatives catering to vulnerable populations, providing easily accessible information on solar technology and its benefits. Emphasizing tangible benefits of solar technology (cost savings, sustainability) and simplifying the understanding and installation process. Collaborative efforts between stakeholders to amplify outreach and foster sustainable energy use.	1. Conduct a knowledge gap assessment. 2. Develop educational materials. 3. Organize community workshop and events. 4. Partner with local organizations. 5. Implement door-to-dorr campaigns. 6. Utilize technology platforms.
Affordability	Affordability perceptions and financial barriers	Financial assistance programs (government subsidies) to alleviate upfront costs. Policy adjustments to reduce regulatory barriers and provide clarity on government support mechanisms. Tailored education and communication strategies addressing demographic-specific attitudes and priorities. highlighting long-term cost-saving benefits and providing clear information on subsidies and assistance programs.	1. Raise awareness of governemnt subsidies. 2. Conduct financial literacy workshops. 3. Engage with financial institutions. 4. Ensure transparent pricing information. 5. Explore community solar programs. 6. Offer incentives for early adopters.
Infrastructure Compatibility	Perceived infrastructure compatibility	Awareness-building, tailored policies, and targeted incentives. Disseminating accurate information and raising awareness about the compatibility of solar technology with various types of infrastructure.	1. Provide root assessment and consultations. 2. Organize technical assistance. 3. Streamline regulatory processes. 4. Arrange community demonstration. 5. Partner with homebuilders. 6. Develop online resources and tools.
Government Plocies and Incentives	Lack of awareness regarding government initiatives	Targeted education and communication efforts, increasing awareness of government policies and incentives. Clarifying the process for accessing support and addressing uncertainties or skepticism through clear communication strategies,	1. Launch information campaigns. 2. Facilitategovernment-community dialogues. 3. Advocate for local government support. 4. Create online portals for information. 5. Organize community outreach events. 6. Establish feedback mechanism.

In referenced survey data, barriers, and challenges in the adoption of solar technology by Tanauan City residents were identified. Photovoltaic (PV) Solar Cells, as shown in *Table 2,* emerged as the most suitable solar power technology for residential adoption. PV Solar Cells provided a renewable energy source, reducing reliance on fossil fuels and minimizing environmental impact. Their widespread recognition and understanding among residents helped address awareness gaps and facilitated educational programs about their benefits. Technological advances and economies of scale significantly lowered installation costs, making PV systems more affordable. Various financing options and government incentives further improved their economic viability. Lastly, PV Solar Cells were identified as the best choice for residential use in Tanauan due to their ease of installation and adaptability.

Table 2. Proposed Photovoltaic Technology Package

PV Solar Panel Type	System Configuration	Price (Ave)/ Efficiency	Warranties	Liefspan/Maintenance
Polycrystalline	Grid-Tied	₱ 180,000 Package / 15% ~ 17%	Panels - 25 ~ 30 years Inverters - 5 ~ 10 years	25 years / 2 ~3 years with cost of ₱2,500

Conclusions

The research study in Tanauan City revealed a multifaceted landscape of factors that influenced residents' attitudes toward solar power technologies. Insights emerged across dimensions such as Awareness and Knowledge, Affordability, Infrastructure Compatibility, and Government Policies and Incentives, shedding light on both barriers and potential solutions. Applying the Technology Acceptance Model (TAM) focus on perceived usefulness and ease of use offered a structured framework for understanding perceptions, informing effective social action, policy development, and practical interventions. Awareness and Knowledge gaps were addressed through knowledge gap assessments and tailored educational materials. Affordability concerns were tackled by raising awareness of subsidies and financial literacy workshops. Infrastructure Compatibility issues were tackled through roof assessments and streamlined regulatory processes. Government Policies and Incentives awareness gaps were addressed through information campaigns and government-community dialogues. Stakeholders played a crucial role in fostering a favorable environment for solar adoption. Among solar technologies, PV Solar Cells emerged as the preferred option, with polycrystalline panels and grid-tied systems identified as suitable for residential adoption. Hybrid systems were proposed for blackout-prone areas. Achieving optimum adoption required balancing market demand, affordability, and regulatory support. Beyond addressing immediate energy needs, the adoption of solar power aligned with broader Sustainable Development Goals. Solar technology not only supported SDG 7 by promoting access to affordable and clean energy but also contributed significantly to SDG 13 by mitigating climate change impacts and advanced SDG 9 through innovation in renewable energy infrastructure.

Overall, the study laid the groundwork for advancing solar technology adoption in Tanauan City, Batangas, Philippines.

Recommendations

Research Question #1: Future studies delved deeper into demographic factors that influenced perceptions of solar affordability, such as differences across age groups, educational backgrounds, socio-economic status, and family income. Additionally, Future research should explore the effectiveness of community-based educational programs and outreach activities in improving residents' understanding of solar energy benefits. Involving communities in knowledge-sharing initiatives identified culturally relevant communication strategies and tailored educational materials to local needs.

Research Question #2: Barriers to solar power adoption, such as misconceptions and lack of trust, can be addressed through community engagement initiatives. Future studies aimed to investigate the impact of community-led initiatives on overcoming adoption barriers, with a focus on social norms and perceived risks. Further study was needed to enhance solar power cost analysis for informed decision-making, considering initial investment costs, long-term cost-effectiveness, and government incentives. Challenges included data complexities, requiring collaboration and monitoring of attitudes and adoption rates to gauge effectiveness.

Research Question #3: Tailoring alternative solar power technologies to local needs and conditions could enhance community resilience. Future research aimed to explore community preferences and priorities regarding solar technology options, ensuring solutions met specific needs and preferences. Additionally, conducting an in-depth analysis of neutral results was recommended to determine their influence on adoption rates and develop targeted interventions. Delving into the reasons behind neutral sentiments provided valuable insights for refining strategies aimed at promoting the widespread adoption of solar energy. Furthermore, in addressing barriers, several key factors were considered when planning solar installations, such as location and roof orientation, energy needs, cost and incentives, contracting company, durability, project length, and return on investment. Additionally, the research could explore the effectiveness of various types of solar power systems (e.g., off-grid, on-grid, hybrid) in meeting diverse consumer needs and preferences.

Compliance with Ethical Standards

The research study on solar power adoption in Tanauan City, Batangas, emphasized rigorous ethical considerations integral to its design and execution. Under the guidance and approval of the Letran Graduate School, the study employed closed-ended questions with predetermined response options to gather data. Ethical principles were woven throughout, beginning with the paramount issue of informed consent. Participants were meticulously informed about the study's purpose, procedures, and potential risks and benefits, ensuring their participation was voluntary and fully understood.

Confidentiality was another cornerstone of the study's ethical framework. Participants' privacy was rigorously protected through anonymization of data and secure storage practices, safeguarding their responses from identification or misuse. The ethical guidelines also prioritized respecting local customs and ensuring transparency in communication. This commitment to transparency extended to openly sharing research objectives, methodologies, and findings with the community, fostering trust and collaboration.

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SAFETY AND SECURITY OF PARAGLIDING AS A RECREATIONAL ACTIVITY

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ABSTRACT

This study aims to raise awareness of the safety and security of paragliding as a recreational activity to enhance and promote the tourism industry in Nueva Vizcaya, Philippines. The study utilized a qualitative descriptive approach, which involved conducting a site visit and group interviews using an interview guide. This was carried out with a cohort of nine proficient pilots who are actively engaged in operations at the paragliding site. Risk factors such as flying with low-level skills and accountability, poor knowledge of weather and terrain conditions, and inadequate strength and weight were significant dangers in paragliding. Safety precautions before, during, and after flights were found to be crucial, requiring careful adherence to guidelines and instructions. The study also uncovered various issues, including weather-related challenges, psychological readiness, lack of insurance coverage for passengers, and concerns among pilots regarding the cultural attitude, high danger, and expensive equipment costs. Furthermore, the research highlights the need for financial assistance for the United Grassroots and Tribes Paragliding Association (UGAT-PAC), the organization overseeing the paragliding site, due to the substantial investment required to develop a fly site. In conclusion, even though paragliding is risky, it can be enjoyed safely through proper preparation, skill development, and adherence to safety measures. The findings of this study contribute valuable insights to enhance the safety and security of paragliding as a recreational activity.

Keywords: *Safety, Security, Paragliding, Recreation, Risk Factors, Safety Precautions, Sports Tourism*

INTRODUCTION

Providing exceptional tourism requires a strong focus on safety and security. The ability to create a safe and secure environment for tourists determines a tourism destination's success or failure more than any other economic activity as stated by the United Nations World Tourism Organization (UNTWO, n.d.). Security is the process of making people or places secure. In contrast, safety is the state of being protected against harm or danger (King, 2021). In paragliding, safety entails accident-free flight to prevent sudden interruptions from reducing flight enjoyment. Learning more, developing your talents, and improving your judgement will keep you safe. The only way to grow effectively over time is to fly safely while expanding horizons (Pagen, 2001). The UNWTO defines tourism as "travelling to and staying in places outside their usual environment" for pleasure, work, or other reasons. As one of the main drivers of the economies of many nations, tourism frequently draws a large variety of enterprises created particularly to serve tourists from other regions.

The tourism industry has eight different sectors and one of these sectors is activities and attractions (Nour, 2019). Adventure tourism is a particular sector of the travel industry that focuses on experiences that give tourists a chance to have thrilling encounters. Adventure tourism is an immersive experience, enabling visitors to have a physical connection to the location they are visiting (Tjoe, 2021). One of the fastest-growing tourist segments is sports tourism. Whether sports are the major reason for the trip, more and more tourists are interested in participating in sports-related activities while they are away (UNWTO, 2021). Recreation is a necessary part of life that refreshes and rejuvenates a person's body and mind. Recreational activities help a person relax and decrease the effects of work-related and interpersonal stressors. These activities also allow an individual to sharpen communication, time management, motivational and disciplinary skills (studocu.com, 2019).

Ecostinger (2018) explained that Paragliding is an excellent flying sport that allows a pilot to navigate through the air using a small aircraft- the perfect activity for adventurous people. Many people use paragliding as a recreational activity, while others practice paragliding as a highly competitive sport. It is a recreational and competitive sport and a great way to experience the place’s natural beauty. Adventurous people opt to go to places where they can paraglide as it is a thrilling sport and a must-have experience. Paragliding has become famous over the past few years, with people taking it up for a great and fulfilling experience. Many consider paragliding one of the world’s most thrilling and awe- inspiring activities. Viewing the Earth’s colourful terrain from thousands of feet above, dangling from strings, and drifting through the air like a free-floating feather is exhilarating (Gaxiola, 2020). Depending on the source, the history of paragliding inventions varies (Ronca, n.d.). In Dennis Pagen's 2001 book, "The Art of Paragliding," Otto Lilienthal is celebrated as a flight pioneer for his 1880s bat-like wings and over 1000 flights from an artificial hill, which prefigured modern hang gliding. His innovations greatly

influenced the Wright brothers and the course of aviation history. Pierre Bétemps founded the first paragliding school in 1979, and Laurent de Kalbermatten began manufacturing the first wings in 1985. This period marked the beginning of paragliding's rise in popularity, especially in the United States during the late 1980s (United States Hang Gliding and Paragliding Association, n.d.). David Barish's development of the Vortex Ring parachute in 1955 and Domina Jalbert's invention of the Parafoil in the 1960s were pivotal to the evolution of paragliding.

The Philippines' tourism industry is still expanding. Although paragliding is still a new sport in the Philippines, as Medel (2022) noted on Windowseat, there are places to do it. Unbeknownst to many, the Philippines has several paragliding destinations. Paragliding in the Calabarzon Region can be done in Rizal's San Mateo, Cavite's Carmona, and Batangas's Lake Taal region. There are locations in Legazpi, Bicol, and Nueva Vizcaya, all within the broader Luzon area. You may try Oslob, Cebu in the Visayas, which is extremely well-liked by tourists. Sarangani, in Mindanao's South, is where you may find paragliding locations (Mangubat, 2020). Considering that local tourists are unfamiliar with this form of pleasure, evaluating the safety and security of paragliding in the Philippines is now more crucial than ever. Jaojela (n.d.) added that "The Philippines have a lot to offer, not only different breath taking places and outstanding services but also a sport like paragliding"; as a result, the potential of paragliding here in the Philippines will help to increase tourist arrivals for both domestic and foreign arrivals.

Rarely does Nueva Vizcaya appear on the list of Luzon's must-see locations. In reality, the province provides a variety of low- to high-adrenaline sports (Bennett, 2021). One of these activities is paragliding, which is run by Ms. Violet Lucasi- Elrays, founder of the United Grassroots and Tribes Paragliding Association (UGAT-PAC), a corporation of paragliding pilots from different cultural tribes in the Philippines. A team of Indigenous People and home-grown local pilots who dream of becoming professional air sports pilots that can make a mark in the international flying arena, the Philippines native who graduated from the Ateneo de Manila University, a licensed professional pilot, a YouTuber, and the proprietor of a log cabin in the neighbourhood of Sitio Naduntog, brgy. Tiblac, Ambaguio, Nueva Vizcaya. She acknowledged having mental health issues and how paragliding had helped her overcome them in her interview with Santos (2021). She urged her teacher to go to Nueva Vizcaya to investigate if it could be turned into a paragliding site, and they found that it offers some of the best wind conditions in the Philippines. She also mentioned that Ambaguio has the best geographical location and that not all mountains are good for paragliding. They introduced paragliding in Nueva Vizcaya for training and community development to make it "The Paragliding Mecca of the North," (7641 Island or the Philippines, 2020).

The sport has existed since the early 2000s. However, only a few people participate in it today, most of whom are from Metro Manila, as the sport did not initially take off but eventually gained popularity (Mangubat, 2020). Despite considerable concerns, paragliding is seen by Mitchell (2022) as a safe recreational activity. Like aerial activities, skydiving, hang gliding, and other extreme sports require caution. Without the correct instruction, things can go wrong, and occasionally, people sustain injuries in collisions,

become lost or trapped in distant locations, and are exposed to inclement weather. To reduce the possibility of harm or death, it's critical to take security measures. Familiarity with your equipment improves your ability to comprehend your instructor's communications. You may promptly comply when he commands you to "pull the rear risers" once you know where they are in control lines, risers, a canopy, a leading edge, and a harness (Pagen, 2001). There are several different types of paragliders on sale. They differ in terms of size, weight restrictions, and design. When selecting paragliding equipment, it's crucial to consult with a professional or an experienced pilot to ensure the gear matches your size and skill level. The market offers high-quality used gliders at competitive prices, but they must be in good condition and not overly used to ensure safety. The size of the glider is important; too small and you'll need to run faster for take-off and landing, too large and it may lose stability. For lighter pilots, a smaller glider within the weight range of 55 to 75 kilos is advisable for optimal control and an enjoyable flight experience (Pagen, 2001).

Table 1: *Preflight Chart*

• Harness straps • Leg straps • Buckles • Harness pack cloth • Seat • Both carabiners • All risers • Back support • Parachute handle • Parachute position	✓ Parachute bridle ✓ Riser quick links ✓ All lines ✓ Control lines ✓ Control line pulleys ✓ Control line toggles and knot ✓ Canopy material for damage ✓ Canopy debris ✓ Canopy layout (line over) ✓ Helmet

In paragliding, safety is paramount. Pilots must rigorously adhere to pre-flight checklists to ensure equipment is in optimal condition, as in-flight adjustments are not feasible. Equipment failure is a significant cause of accidents, making routine inspections and emergency preparedness essential. Tandem flights introduce additional weight considerations. It's vital to measure the combined weight of the pilot and passenger to prevent exceeding the canopy's capacity. Selecting a certified canopy that can accommodate the total weight is crucial for a safe paragliding experience (Magar, 2020). Paragliding is accessible to a wide range of ages and physical conditions, not requiring exceptional athleticism (Pagen, 2001). Regular participation in paragliding naturally improves muscle strength and control over the equipment. For optimal physical fitness, focus on leg exercises and ankle strengthening through uneven terrain running. Hydration is crucial, so drink water every 45 minutes (Adrenaline Parapente, n.d.).

Table 2: *Unfavourable Weather and its Risk Description*

Risk Title		Risk Description
Unfavourable Weather	• Rainy Day • Cloudy Day • Strong Wind	• Failure to achieve and retain sufficient lift • Loss of control • Unable to fly in the planned direction • Unable to land in the planned landing zone or unable to land safely anywhere • Being struck by lightning • Getting pulled up into a cloud • Light or heavy injuries or even death

One of the risk variables is the environment at the flight location. There aren't many places to land in an emergency when flying from rocky or difficult terrain. Additionally, sites with no wind indicators are to be avoided. The priority regulations should also be considered if the location should also be considered as packed (Adrenaline Parapente, 2021).

Table 3: *Environment and its Risk Description*

Risk Title		Risk Description
Environment	● Rocky or Rough ● Terrain Sites without wind indicators ● Overcrowded site	● Emergency landing areas were limited ● Unable to land safely ● Lost and stuck in an unfamiliar place ● Banging into objects such as trees, mountains or other pilots ● Can't paraglide back to the take-off area ● Light or heavy injuries or even death

It appeared that increased flying hours exposed pilots to a slight increase in risk, contrary to the belief that more flying reduces risk. Pilot errors in glider control and in decision-making, not in equipment malfunction, were the key issues, consistent with other disciplines. Future safety interventions should focus on improving back protection, pilot training, and glider control and encouraging timely reserve parachute deployment (Wilkes, et. al. 2022). Without the appropriate technical knowledge to execute these maneuvers successfully, pilots run significant dangers while in the air. Various factors may cause a paragliding accident. Pilot error, equipment malfunction, and unfavourable weather conditions are the most frequent causes of paragliding injuries. The main factor in paragliding accidents is pilot mistakes. It usually happens upon launching. This can also involve failing to follow protocol, making errors when landing, soaring, or trying maneuvers beyond your rating. One of the least likely reasons for accidents is equipment failure. This may involve faulty machinery or issues with the wing itself Mitchell (2022).

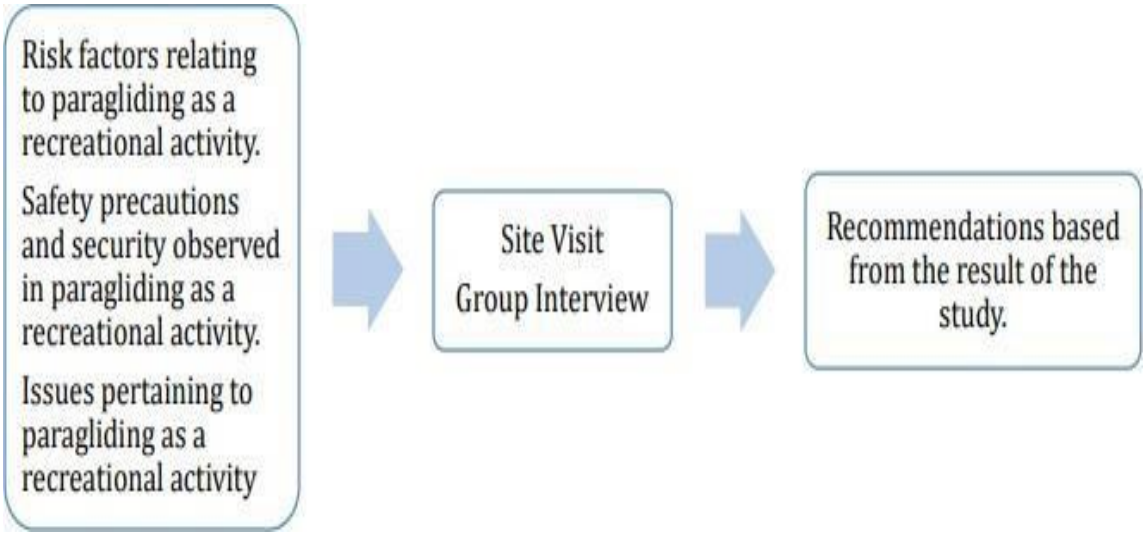
Table 4: *Technical Expertise and its Risk Description*

Risk Title		Risk Description
Technical Expertise	● Equipment failure ● Pilot error ● Poor decision making	● Banging into objects such as trees, mountains, or other pilots ● Falling out of the sky ● Getting lost ● Running into bad weather conditions ● Mistakes in take-off, soaring, and landing ● Malfunctioning equipment ● Light or heavy injuries or even death

An experienced pilot has the necessary credentials, insurance, and safety protocols. The USHPA establishes paragliding standards and gives pilots access to training materials. Pilot must finish an approved training course and pass a competency test to get certified. The USHPA also provides paraglider ratings, which show the pilot's level of training and experience. To be approved, your powered paraglider, powered paramotor, or paraglider must complete a series of tests administered by an aviation body. These evaluations assess performance, control, and stability (Mitchell, 2022). The only organization recognized by our Network Access Control (NAC) to issue national permits for paragliding and hang gliding with the International Pilot Proficiency Identification (IPPI) equivalent printed on them is the Philippine Paragliding and Hang-Gliding Association, Inc. (PPHGA). Visitor pilots are advised to carry their IPPI card along with their national license, certificate, or rating granted by their federations. They may apply for a PPHGA license. Filipino pilots are encouraged to have a national license issued by PPHGA, Inc. To safely operate the National Airspace System, pilots must also be conversant with the Civil Aviation Authority of the Philippines (CAAP) laws and airspace classifications (FAI, 2018).

The purpose of conducting the study is to raise awareness about the safety and security of paragliding in Ambaguio, Nueva Vizcaya as a recreational activity, thereby, potentially contributing to the promotion of paragliding as part of the tourism destination's activities and further assisting in the drive for a more dynamic and vibrant Tourism industry of Nueva Vizcaya, Philippines.

Table 5: *The Paradigm of the Study*



Research Objectives

This study explored the paragliding challenges encountered in Sitio Naduntog, Barangay Tiblac, Ambaguio, Nueva Vizcaya, Philippines as a recreational activity for the second semester of 2022-2023. Specifically, it sought to find answers to the following objectives:

1. To enumerate and discuss the risk factors of paragliding as a recreational activity.
2. To determine the safety precautions and security observed in paragliding as a recreational activity.
3. To document related issues about paragliding as a recreational activity.
4. To give recommendations on the safety and security of paragliding as a recreational activity based on the study results.

METHODOLOGY

Research Design

The researchers employed a qualitative descriptive method to interpret the collected data. This study utilized a group interview approach guided by a questionnaire focused on assessing the safety and security aspects of paragliding as a recreational activity in Ambaguio, Nueva Vizcaya.

Research Environment

The study was conducted in Sitio Naduntog, Barangay Tiblac, Ambaguio, Nueva Vizcaya, Philippines, located a 30-minute drive from the provincial capital of Bayombong. This area

serves as the site for paragliding activities and where the study's informants are based.The study was conducted in the first quarter of 2023.

Informants of the Study

Participants included nine experienced pilots who met specific criteria: each had completed a minimum of 40 solo or tandem flights, received training at three or more fly sites, held a PG1 license, and were active members of UGAT-PAC in Ambaguio, Nueva Vizcaya, Philippines. Pilots who did not meet these qualifications or opted out of participation voluntarily were excluded. This selection ensured a cohort well-versed in paragliding practices, contributing to the study's insights into their experiences and safety measures.

Table 6: *List of Pilots with Corresponding Flight Records as of March 21, 2023*

Pilot	Hours of Flight	No. of Flight	No. of Flysite	Flysites	Level of licensed
ALLEN EDWARD GAYO Airsports Academy Scholar	6.8	40	2	Tiblac, Ambaguio Sarangani	PG1
NESTOR LOGMAYO JR. Airsports Academy Scholar	7.5	50	3	Tiblac, Ambaguio Nagtipunan, Quirino Sarangani	PG1
ZURIEL LUCASI Airsports Academy Scholar	10	50	3	Tiblac, Ambaguio Nagtipunan, Quirino Sarangani	PG1
FRANCIS MORALES Airsports Academy Scholar	18	65	3	Tiblac, Ambaguio Nagtipunan, Quirino Sarangani	PG1
ALY PUGONG Airsports Academy Scholar	25	120	5	Tiblac, Ambaguio Nagtipunan, Quirino Sarangani Nongkhai, Thailand KCH Lahrn, Thailand	PG2
SERI PUGONG Airsports Academy Scholar	26	125	5	Tiblac, Ambaguio Nagtipunan, Quirino Sarangani Nongkhai, Thailand KCH Lahrn, Thailand	PG2
MARTES BUGTONG	28	185	6	Highlander, Bayombong Bangan Hill Tiblac, Ambaguio	PG2

Solo Pilot Ambaguio, PDP Batch 1				Nagtipunan, Quirino	
				Cardona, Rizal	
				Sarangani	
KELVIN LIYANGNA Solo and Tandem Pilot Airsports Academy Scholar	200+	230 Solo Flight 210 Tandem Flight	11	Tiblac, Ambaguio	T2
				Highlander, Bayombong	
				Bangan Hill, Bambang	
				Diadi	
				Nagtipunan, Quirino	
				Carmona, Rizal	
				Sarangani	
				South Cotabato	
				Ranau, Malaysia	
				Nongkhai, Thailand	
				KCH Lahrn, Thailand	

Table 6 shows the eight pilots of UGAT-PAC with corresponding flight records as of March 21, 2023. Divided into six columns, the pilots' flight hours, number of flights, number of fly sites, and their license level. 8 Pilots belong to the IPs from the different municipalities of Nueva Vizcaya. 4 pilots have PG1 or Novice IPPI Para2 license 6.8-18 hours for 40-65 flights in 2-5 different fly site, three pilots have PG2 or Independent IPPI Para3 license, 25-28 hours for 120-185 flights in 5-6 different fly site and one pilot have a T2 license or Commercial Tandem Pilot, 200 plus flying hours for 230 solo flights and 210 tandem flights in 11 different fly sites. Among the four local Pilots, 3 of them competed abroad (Thailand and Malaysia), representing the Philippines. Nueva Vizcaya Paragliding (2023) posted, "This start of the year has led us to finally pay off and acquire our international SPORTING LICENSE for 4 Indigenous Pilots (IPs) for 2023. This sporting license allows them to compete internationally and represent their hometowns (Ambaguio-Bayombong), the province of Nueva Vizcaya, and the Philippines".

Participants included nine experienced pilots who met specific criteria: each had completed a minimum of 40 solo or tandem flights, received training at three or more fly sites, held a PG1 license, and were active members of UGAT-PAC in Ambaguio, Nueva Vizcaya, Philippines. Pilots who did not meet these qualifications or opted out of participation voluntarily were excluded. This selection ensured a cohort well-versed in paragliding practices, contributing to the study's insights into their experiences and safety measures.

Research Instrument

The technical panel of experts and the research coordinator validate the research instruments. The researchers used group interviews and a guide questionnaire as the main instruments in this study to provide and gather as much information as possible for relevant evaluation. It was used to determine the safety and security of paragliding as a recreational Activity in Sitio Naduntog, Barangay Tiblac, Ambaguio, Nueva Vizcaya, Philippines. Prior to conducting the study, informed consent was obtained from all participants, ensuring their voluntary participation and understanding of the study's purpose. The participants were informed that all gathered information would be treated confidentially. The study aimed to explore three main aspects of paragliding as a

recreational activity through semi-structured interviews. Firstly, participants were asked to enumerate and discuss risk factors associated with paragliding. Secondly, safety precautions and security measures observed in paragliding were explored. Lastly, participants were prompted to share any additional issues related to paragliding as a recreational activity. Interviews were conducted in person to facilitate detailed responses from each informant.

Table 7. *Specifications of Interview Guide Questions aligned with Reviewed Related Studies and Literature*

Objectives of the study	Interview guide questions	Related Studies and Literature
● To enumerate and discuss the risk factors relating to paragliding as a recreational activity	● What are the common risk factors in paragliding you encountered as a pilot? ● What is the risk of paragliding in unfavorable weather like rainy, cloudy, and windy days? ● What risk do you encounter here (Ambaguio, Nueva Vizcaya) as your paragliding environment? ● What is the risk of paragliding in a rocky or rough terrain? ● What is the risk of paragliding in an overcrowded site? ● What is the risk of paragliding without having the necessary expertise? ● What Is the risk of equipment failure, pilot error, or poor decision-making in paragliding? ● What is the risk of not wearing proper clothes in paragliding? ● Does weight matter in paragliding? If so, what is the desired weight in solo and tandem flights? ● Does strength matter in paragliding? If so, what are the desired strengths in solo and tandem flights?	● Cameron (2020) ● Adrenaline Parapente (2021) ● Wilkes et al. (2020) ● Magar (2020) ● Mitchell (2022) ● Pagen (2019)
● To determine the safety precautions and security observed in paragliding as a recreational activity.	● What are the safety precautions and security that you do before, during, and after paragliding? ● What are the dos and don'ts before, during, and after paragliding?	● Magar (2020) ● King (2021) ● Pagen (2019)

	● What are the best conditions for paragliding as a recreational activity? ● What is the paragliding equipment that you use? Why are these important? ● What are the gears that you use?	
● To document related issues about paragliding as a recreational activity.	● What issues or problems have you encountered in the conduct of paragliding as a recreational activity? ● Kindly narrate or describe these encountered issues. ● How did you solve or address these encountered issues?	
● To give recommendations on the Safety and Security of Paragliding as a Recreational Activity base on the result of the study	● What recommendations do you suggest to avoid possible issues or problems that may occur in the future about paragliding?	

Data gathering Procedure

The researchers administered the instrument to the informants through an on-site visit and a group interview. The following was the procedure the proponents used in gathering data:

1. The research Instrument was validated and approved by the panel of evaluators and the University Research Ethics Board (UREB). Certification was given to approve and validate the paper and research instrument.
2. Booked an appointment for paragliding through Nueva Vizcaya Paragliding official page.
3. On-site visits were made for the researchers to try paragliding themselves, and then the informants' consent was asked for participation, and a schedule was set based on their available time for the interview.
4. Another on-site visit to proceed with the group interview, depending on the available Pilot on the agreed time and date at the Paragliding site in Sitio Naduntog, Barangay Tiblac, Ambaguio, Nueva Vizcaya, Philippines, for at least an hour.
5. Another on-site visit and interview if some of the informants are unavailable or data gathering is not yet done.
6. Data was evaluated, interpreted, and treated after the data was gathered.
7. After analyzing and interpreting the data, recommendations were given based on the study.

Treatment of Data

This study utilized information gathered from the interview: these are the time of visit and group interview. Thematic analysis treatment was used to treat the data and w a s arranged according to the components presented in the objective of the problem.

RESULTS

Section 1. Risk Factors Relating to Paragliding as a Recreational Activity

Table 8. *Risk factors in paragliding the pilots encountered*

RESPONSES	Frequency	Percentage
Flying with low-level skills and accountability.	5	55%
Flying with poor knowledge of weather and terrain.	2	22%
Weight	1	11%
Strength	1	11%

Section 2. Safety Precautions and Security Observed in Paragliding as a Recreational Activity

Table 9. *The do's and don'ts in tandem and solo flight before, during and after paragliding as a Recreational Activity.*

DO'S AND DON'T'S BEFORE PARAGLIDING	
TANDEM	**SOLO PILOT**
DO's • Book a flight or walk-in • Wear appropriate clothing • Bring personal necessities, snacks, and entertainment • Receive proper orientation • Ensure both pilots and passengers are mentally, emotionally, and physically prepared • Check and prepare gears and equipment • Assess the wind conditions and wait for favorable wind	**DO'S** • Book a flight and bring gears and equipment (incoming pilot) • Tandem with a local pilot to assess and familiarize with the fly site, landing site, terrain, and weather • Wear appropriate clothing • Be mentally, emotionally and physically prepared • Use suitable equipment • Check and prepare gears and equipment • Assess the wind conditions and wait for good wind
DON'T'S • Schedule important meetings on the	**DON'T'S** • Forgetting the gear and equipment

flight date • Eating a huge meal • Not getting enough sleep • Wearing inappropriate clothing • Stepping on or touching the pilots' equipment • Arriving late or not showing up on the scheduled date	• Being mentally, emotionally, or physically unstable • Not checking the equipment or gears before launching • Leaving the gears and equipment unattended • Not getting enough sleep • Flying at night
DO'S AND DON'T'S DURING PARAGLIDING	
TANDEM	**SOLO PILOT**
DO's • The pilot focuses on maneuvers and entertains the passenger while ensuring the passenger sits comfortably and enjoys flying. • Maintain proper airspeed. • Passengers can shout, scream, and talk to the pilot. • Raise or leg-up during landing	**DO'S** • Maintain proper airspeed • Be alert and aware of the surroundings at all times • Land safely
DON'T'S • Jump, sit, and stop running during the launch. • Looking down too much, moving too much, and touching the control	**DON'T'S** • Flying without assessing the wind • Flying during strong or weak wind • Reckless flying while on air • Reckless landing
DO'S AND DON'T'S AFTER PARAGLIDING	
TANDEM	**SOLO PILOT**
DO's • The pilot checks or asks the passenger if they are okay, and checks the gear and equipment before storing it properly. • Wait for the car if the landing area is in the Jamboree Site, Masoc, Bayombong Nueva, Vizcaya.	**DO'S** • Assess the whole body for possible injuries • Check and store equipment properly. • Wait for the car if the landing area is in the Jamboree Site, Masoc, Bayombong Nueva, Vizcaya. •
DON'T'S • Wandering or leaving the landing area in Jamboree Site, Masoc, Bayombong Nueva, Vizcaya • Touching, stepping, or playing with the pilots' equipment.	**DON'T'S** • Do not wander or leave the landing area at the Jamboree Site, Masoc, Bayombong Nueva, Vizcaya.

Section 3: Related Issues On Paragliding as a Recreational Activity.

The study found that the issues faced by tandem passengers include dependency on weather, psychological preparedness of passengers, and lack of insurance coverage. On the other hand, paragliding pilots in Ambaguio, Nueva Vizcaya, Philippines, face some challenges, such as the high cost of equipment and over all training and operations, lack of proper training, and character behavior on wanting quick results. In addition, issues

related to fly site development include high costs associated with establishing outdoor destinations.

DISCUSSION

Table 1 depicts that 5 (55%) of the responses indicate flying with low-level skills and accountability was one of the risk factors of paragliding. As stated by Pilot Aly, “The risk of the environment in Ambaguio is its height, which is too high for beginners. Therefore, beginners cannot fly here since the landing spot is too far away. Similarly, some pilots do not reach the landing when the wind is weak. The wind is also gusty, which is fine, but it may also be turbulent and dangerous for flying.” She also stated, “It is risky and prone to mishaps without the necessary experience or training. For example, foreign pilots who claimed to be expert pilots came to fly here, yet an accident occurred. They dangled from a tree and never arrived at the landing zone. Examining the environment (fly site, landing area) is vital. Your ability level must meet the required skill level to fly in that place because many things might go wrong if you lack flight training and knowledge.” Although learning to fly is a lot of fun, it must be done with a safe, educational program. The best course of action is to train under a reputable, knowledgeable instructor. The demands can be best met by the instructor, who can customize the classes. Afterwards, start on ground training and lessons with tandem instruction or move from flat groundwork to actual flying and glider control from various heights. The instructor or local guide familiarizes students with paragliding by showing them the actual flying place or using films and images. Someone prone to accidents is probably negligent or has little regard for their safety such as a pilot paraglider without the requisite training. In that case, they will not be able to control the glider, take off or land effectively and will make bad landing decisions (Pagen,2001).

Two (22%) of the responses indicate that flying with poor knowledge of weather and terrain is another risk factor of paragliding thus pilots need to learn and be knowledgeable about the different types of weather and terrain of a fly site. As mentioned by Pilot Kevin, “The wind is strong when it is raining. It is not good for paragliding because you are more likely to get harmed.” Pilot Ally also said that, “The first risk factor is the wind, as we cannot control the wind directions. Another risk is the slope of the take-off or fly site area. There are times when the slope is tough for take-offs, but there are also times when it is easy. If the terrain is rocky and an emergency landing is required, it is hazardous, especially for the pilot, because even if you followed the proper landing procedure, any part of your body can be hurt as the landing place is rocky.” Unpredictable weather poses a serious risk that shouldn't be disregarded. Some of these are heavy rain, strong winds, clouds or fog, excessively warm or cold temperatures, poor visibility, and sudden weather changes when flying (Cameron, 2020). Gusty means a sudden strong wind.

Last March 12, 2023, the researcher scheduled a flight at 11 a.m. and experienced gusty wind during landing. The pilot tried to land several times but failed due to gusty wind. As a result, the flying time extended to 20 to 30 minutes. The wind is usually quiet through the night and becomes stronger by 9 or 10 in the morning. The sun's heat agitates the

environment, and it is responsible for this. By late afternoon, the wind peaks, and by nightfall, it starts to diminish (Pagen,2001). One of the risk variables is the environment where the flight will take place. There won't be many places to land safely if you come from rocky or harsh terrain (Adrenaline Parapente,2021). The slope's steepness ranges from 10 to 20 degrees, allowing you to dash at takeoff speeds. The training location should ideally be high enough for you to climb the slope gradually. The ideal hill is becoming increasingly rare since we don't live in a perfect world, and the land is getting harder to come by. Therefore, most schools employ some hills to accommodate varying wind directions and ability levels. The instructor pointed out each lesson's appropriate location to the pilot (Pagen,2001).

The data reveals that 11% weight is a risk factor. The heavier the person, the harder it is to control lines. However, wings have sizes that can accommodate different weights. The desired weight is not more than 100kg for both solo and tandem. Pilot Kelvin stated that “For each weight, there is a particular wing range. The larger the wing, the greater the weight, and vice versa. Weight is an important component. For example, if I am light and my wing is large, the air will easily carry me away.” A small glider will require faster running during takeoff and landing. Use caution when utilizing equipment, especially if you're inexperienced, because you might not know how to evaluate its quality or suitability for your needs based on size. Before using a new glider or harness, please seek professional advice on whether it suits your size and ability level (Pagen,2001).

The length of the wing also affects the minimum weight for paragliding. It is preferable to choose a smaller- sized paraglider if you are small-framed. The lightest paraglider can carry between 121 and 165 pounds (55 to 75 kilos). Problems associated with being under the minimum weight include wing collapses and decreased control. Paragliders use the forces of gravity, high winds, and glider wing power to maintain flight. Each paraglider will, therefore have a maximum and minimum weight range depending on size. Certain single paragliders have been specifically engineered to carry more oversized loads. There are logical and practical justifications for the weight restrictions. Paragliding uses gravity and wind force, as was already established. You will profit immensely if you precisely weigh the paraglider load and don't overload it because you can fly longer and travel farther (Mark, 2019). Weight implies that the pilot should maintain a healthy weight to reduce the risk of injury during take-off and landing. Pilots should use suitable equipment based on their skills and weight.

Findings suggest that strength is also a risk factor, with 11%. Paragliding is primarily a sports activity. Pilots are athletes and strength training is part of the course. Pilots should be fit enough to raise their wings and run. Pilot Ally stated that strength matters, “Yes, soaring solo in a weaker state influences your decision.” Because you'll be carrying the glider and ascending hills at first, the physical effort required for paragliding's first stages is frequently the highest. Naturally, this technique is more straightforward for you if you are in better form.

Eat well before you work out. This calls for a hearty breakfast and many carbohydrates (starches like potatoes, pasta, or bread) the night before. Exercises that increase

endurance through aerobics and flexibility training are advised. To enable total muscle usage, stretching activities that limber you up are prescribed (Pagen,2001). While flying the wing, having upper, solid body muscles is advantageous. The arm muscles will strengthen as you fly and maneuver the wing. Flexibility, mobility, and range of motion are all improved and increased. The upper body strength will increase as you exercise and participate in the sport more. This will help control the paraglider more effectively and strengthen the arm muscles. Although arm strength is essential for controlling the glider, lower body strength is needed to accelerate because it's a must to push on a speed bar with legs. This implies that strength is required in paragliding. The pilot should be strong Enough to carry the gears and equipment, flexible enough in an emergency requiring flexibility, stamina for continuous training, strong legs and ankles for landing, and strong muscles to maneuver in the air and lastly, the pilot should eat properly.

Table 2 highlights similarities and differences in procedures for tandem and solo paragliding flights. While both types share general safety protocols, tandem flights require additional steps for gear preparation and passenger management. Adherence to strict safety precautions before, during, and after paragliding is crucial to ensure a smooth, safe, and enjoyable flight experience. These precautions include thorough checks of terrain, weather conditions, equipment, take-off and landing sites, strict adherence to instructor or guide instructions, wearing appropriate protective gear and clothing, and avoiding risky maneuvers or distractions. By following these guidelines, paragliders can significantly reduce the risk of accidents and injuries while maximizing the joy and fulfillment of soaring through the sky. When approached with proper preparation and caution, paragliding, despite its inherent risks, can be safely enjoyed.

Paragliding requires mental preparation or anxiety management, as with most physically demanding activities. The whole point is to progressively learn to operate the glider while controlling danger to reduce anxiety. In essence, a fear of heights is a fear of falling. You could be high while feeling confident and fearless (Pagen,2001).

Upon arriving at the fly site, staff or the safety guards help the first passenger put on safety gear and help the pilot prepare the equipment while waiting for the good wind. The paragliding gear includes a helmet, windbreakers, shoes, gloves, a facemask (made of fabric), a chest belt, a waist belt, a leg belt, and a knee pad. The Paragliding equipment includes a reserve parachute, a canopy (wing), a harness, a variometer, radios, airspeed indicators, an altimeter, risers, and lines (Pagen,2001). Pilot Kelvin asserted that, "The leg belt is essential because it holds you in place after you ran for takeoff. You must always double-check if the equipment is still in good condition because once you're at the top, you must consider the reality that your one foot is in the pit, so you must always double- check." Pilot Ally mentioned that, when doing an emergency landing, not wearing adequate clothing is dangerous. For example, you are safe while dangling from a tree, but you will have bruises and scrapes as a result of wearing inappropriate clothing, such as shorts." Therefore, it is crucial to wear appropriate clothing that shields passengers from the sun's heat and provides protection against potential scratches or bruises that may occur due to incidental contact with hard surfaces or similar objects.

Finding and fixing equipment and gear issues on the ground is much easier than doing it in the air. Every safe flight must include a preflight check. From this point on, it should be included in your launch and layout procedures. All of the glider's critical components are examined for integrity as part of the preflight examination. A pre-flight inspection is performed to evaluate your glider for wear and damage and ensure that all preparations have been made for it to fly (Pagen,2001).

At the fly site, only one passenger and staff member are permitted to enter to ensure minimal crowding and enhance safety for both people and equipment. Adjacent to the paragliding site's left side is a designated waiting area where passengers' families and friends can observe the flights. The pilot inflates the canopy when wind conditions are favorable and directs the passenger to run. Both pilot and passenger run together, supported by additional pilots on either side acting as "para boys" to aid in take-off. Passengers are instructed to refrain from jumping, sitting, or stopping during the launch process. Pilot Kelvin noted that, **"**Guests at Sky Escape 360 are not permitted to enter the fly site, especially during operations. This strict rule is in place to prevent accidents, as there is a high risk of the canopy (wing) hitting them if they are present during pilot landings. For their safety, guests must remain in the designated waiting area at the fly site or within Sky Escape 360."

During flight, pilots focus on maneuvering and attending to passengers, while passengers enjoy a comfortable ride. They can relax, capture video or photos using a GoPro by adjusting it horizontally or vertically, voice concerns or comments, inform the pilot of any discomfort (such as dizziness), converse with the pilot, and appreciate the scenery and the flight. Passengers should refrain from looking downward excessively, moving excessively, or touching the controls. Solo pilots should avoid flying without assessing the wind conditions, flying in strong or weak winds, engaging in reckless flying, and landings. Favorable wind conditions allowed the take-off area to double as the landing site. However, in cases of weak wind, landings were directed to the Jamboree Site in Masoc, Bayombong, Nueva Vizcaya. After landing, a vehicle transported the pilot and passenger back to the log cabin, where initial orientation and payment procedures took place. It is recommended that neither the pilot nor the passenger stray from the designated landing site after touchdown.

Section 3. Paragliding is a sport that requires dedication, patience, and passion. Paragliding pilots can enjoy this sport safely and responsibly by following the proper process and caring for the equipment. To overcome these challenges, United Grassroots and Tribes Paragliding Association (UGAT-PAC), a local organization, has developed a curriculum and a system to provide quality education and support for aspiring and experienced pilots. UGAT- PAC also raises funds and uses 100% of the income from tandem operations to support the training of pilots.

Weather forecasts may differ from actual conditions, which cannot be controlled. Passengers may become frustrated if unable to fly on the scheduled date and sometimes disregard crew decisions, such as cancellations due to stormy or rainy weather, restrictions on heavy passengers, or rescheduling for optimal wind conditions. To mitigate

these challenges, pilots and staff provide comprehensive pre-flight information online and conduct thorough orientations. Passengers also often experience anxiety and fear, particularly upon arrival at the flight site. Crew members, including pilots and staff, undergo training to effectively manage and alleviate passenger anxieties and fears, ensuring a comforting and reassuring experience.

Another significant issue is the absence of insurance coverage for paragliding in the Philippines, as it is classified as an extreme sport and lacks third-party insurers willing to provide coverage. To ensure passenger safety, tandem flights are exclusively conducted with licensed and experienced pilots. Presently, among the 13 pilots, only one IP pilot holds a T2 license, enabling them to pilot tandem or commercial flights. The remaining pilots possess licenses ranging from pre-PG1 to PG2 levels.

Additionally, the paragliding sport is subject to taxation, despite misconceptions that it brings substantial wealth to pilots in Nueva Vizcaya. In reality, the operational costs including equipment and training expenses, are exceptionally high. To address these challenges, partnerships have been formed with locals to plant grasses at the fly site. This initiative not only aims to mitigate erosion but also promotes an advocacy where 100% of the proceeds contribute to empowering Indigenous Peoples (IP) and local pilots. The IP Pilot recommends proper training and education to avoid potential issues in paragliding. It's advised not to fast-track education, only work with reputable instructors, fly with experienced pilots, adhere to all checklists, invest in the right equipment, establish a proven operational system, and develop a top-tier fly site. Training pilots with values focused on quality rather than profit is crucial. However, this does not negate the importance of safety and security. Any professional paragliding instructor will provide essential safety tips for paragliding. Like any sport or activity, paragliding has rules and regulations in place to enhance pilot safety and security and protect those in the vicinity. While paragliding offers an exhilarating experience accessible to everyone, even a minor mistake can lead to serious injuries and damages. Experienced flyers typically have a thorough understanding of these rules to prioritize safety for themselves and others. Paragliding, is a safe activity if you learn with a good instructor.

Section 4. Paragliding is a thrilling sport that requires proper health and education, equipment, and guidance. The UGAT-PAC should build a strong and lasting partnership with the local community and develop a high-class fly site for paragliding activities. To achieve this, the UGAT-PAC should seek the assistance of the regional officials and the DOT, train pilots with spiritual values, and organize fundraising events online and offline. A first-aid package and a paragliding pharmacy must be readily available for emergency medical assistance in case of an accident. In case of an incident, responsible authorities should be notified promptly using an accessible contact list, emergency radios, whistles, and emergency flares. Identify and designate at least one additional landing spot in case of emergencies, enabling pilots to land quickly and safely if needed. To create mutual benefits and cross-promotion, the DOT can facilitate partnerships between local paragliding pilots and tourism-related businesses, such as hotels, resorts, and travel agencies. Organizing fundraising events can help promote paragliding by planning and hosting events such as paragliding competitions, airshows, or awareness campaigns to

raise funds. Engage with local communities, sponsors, and aviation enthusiasts to generate financial support through this sports activity and the Department of Tourism partnership. Finally, the DOT can support infrastructure development, such as dedicated launch sites, landing zones, and safety facilities, to ensure a safer and more convenient experience for pilots and tourists.

Conclusions

It is concluded that paragliding, while not entirely risk-free, is not disproportionately dangerous compared to other recreational activities or forms of aviation. Paragliding is a thrilling and rewarding recreational activity requiring strict and careful execution and preparation before, during, and after. As enthusiast explore new locations and opportunities, adherence to safety protocols, proper training, and awareness of personal limitations mitigate risks and ensure the continued enjoyment and viability of paragliding as a recreational pursuit. Lastly, Nueva Vizcaya Paragliding has no record of major accidents, making it a safe environment for recreational paragliding.

Recommendations

Further research is recommended to expand and explore different settings, contexts, perspectives, conditions and cultures. In extent focusing on enhancing safety protocols and risk management strategies identifying gaps or inconsistencies that may affect safety, accessibility, or sustainability of paragliding and other sports activities, and further investigate the effectiveness of different safety gear, training methods, and emergency procedures to improve overall participant safety and security. For the Tourism Management and the Hospitality Management Curricula to be integrate topic in Risk Management as Applied to Safety, Security, and Sanitation, tour and travel Operations and Tourism marketing subjects. For paragliding sites also to be added as destinations in the Tour Guiding course as students can learn about safety protocols, regulations, and best practices for guiding tourists in these environments.

Compliance with Ethical Standards

The study followed ethical guidelines by obtaining consent from nine experienced paragliding pilots in Ambaguio, Nueva Vizcaya, Philippines, who met specific criteria, and securing approval from the Saint Mary's University Research Ethics Board (SMU-REB). There was no conflict of interest that could affect the integrity of the study's findings, which aimed to fulfill academic requirements and conduct research. Confidentiality was maintained through data anonymization and secure storage, ensuring participant identities were protected. Vulnerable participants were handled sensitively, ensuring voluntary participation and data security. Participants did not receive direct benefits, while the study aimed to assess paragliding safety and security as a recreational activity, acknowledging risks such as COVID-19 to both researchers and participants.

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SERVICE QUALITY AND INTERNAL AND EXTERNAL STAKEHOLDERS' SATISFACTION IN THE CITY SCHOOLS DIVISION OF CABUYAO

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ABSTRACT

Service Quality and stakeholders' satisfaction are two significant elements in organizational management and sustainability. The operational conditions, as well as the high level of competition, are forces that require the company to strictly adhere to excellent services. Stakeholders' satisfaction is a modern approach to quality in businesses and organizations and it contributes to the formation of truly client-focused organizations and cultures. Measuring stakeholders 'satisfaction provides fast, relevant, and objective input on the preferences and expectations of stakeholders. In this manner, a company's performance may be evaluated for a set of satisfaction dimensions that show a corporate organization's strong and weak aspects. A better organization with standard quality service and objectives that enable enhanced employee competencies emerges from increasing stakeholders' satisfaction. The research determined the relationship between the level of service quality and the level of internal and external stakeholders' satisfaction in the City Schools Division of Cabuyao and discussed the issues and concerns, as well as the difficulties encountered, that could potentially impede meeting the goal of stakeholders' satisfaction and retention. A total of 470 surveys were collected at random using an adopted instrument and the model was analyzed and evaluated using the Mean, Four-point Likert Scale, T-test and Pearson Product-moment Correlation. The analysis revealed the existence of a small but significant positive relationship between the level of service quality and stakeholders' satisfaction. Furthermore, the study proposed an action plan to develop and improve additional techniques to reinforce the ongoing service quality and increase the productivity and confidence of SDO employees.

Keywords: *Service Quality, Stakeholders' Satisfaction*

INTRODUCTION

Due to global economic shifts, a variety of service industries have changed the way they conduct business in an effort to draw and retain clients. In today's highly competitive business landscape, organizations are constantly seeking ways to gain a competitive edge, drive growth, and deliver exceptional value to their customers. One crucial avenue for achieving these objectives lies in the effective utilization of comprehensive services. As it is, services play a pivotal role in supporting businesses across various sectors, enabling them to optimize their operations, enhance customer experiences, and unlock new opportunities for success. By examining the wide range of services available, their benefits, and their influence on different aspects of organizational functioning, aiming to shed light on the critical role that services play in enhancing overall business performance.

In the study of Willot (2020), fifty-two percent (52%) of customers continuously patronized products and services from a company for they were experiencing high service quality. These figures suggested that a lot of elements, including customer satisfaction and service quality, were crucial for a business to be profitable. However, finding ways to obtain and keep such variables was still, and had always been, a crucial problem.

One of the significant challenges encountered in maintaining service quality here in the Philippines is consistently delivering a high standard of service across various customer interactions and touchpoints. One of the main factors in a customer's decision to come back is frequently the perception of quality service. Building a stronger relationship is the first step in providing better service.

In recent decades, both the public and private sectors in the Philippines demonstrate a strong commitment to achieving the highest levels of customer satisfaction. The main factors identifying customer satisfaction include safety, technical and efficiency, personal attention, and personnel providing a sense of comfort. Customers' needs are evolving quickly, and this shows that businesses need to be proactive in meeting those needs. One of the significant challenges encountered in achieving customer satisfaction is meeting ever-increasing customer expectations. In today's highly connected and competitive world, customers become more discerning and demanding. They expect personalized experiences, prompt responses, and seamless interactions across various touchpoints.

Service quality is a critical factor in customer satisfaction and loyalty, and businesses face several challenges in ensuring a consistent and exceptional service experience. Based on the study conducted by Suciptawati et al. (2019), customer satisfaction and service quality were seen as essential elements in any organization since they had a direct impact on how well a business retains its customers. Indeed, customer happiness was believed to come through providing high-quality services.

Studies are developed to determine the pre-existence of internal and external stakeholders' satisfaction and considering that internal and external stakeholders' satisfaction varies based on many other factors. The one who set up higher level service quality retains higher level client satisfaction and can achieve a sustainable global competitive advantage. By investigating the complex dynamics between service quality and customer satisfaction, this research contributed to the existing body of knowledge in the service industry. The findings and recommendations derived from this research assisted City Schools Division of Cabuyao in designing and implementing effective strategies to optimize service quality, meet customer expectations, and ultimately achieve higher levels of customer satisfaction.

For the past years, service quality provided in the City Schools Division of Cabuyao has received little attention. This meant that deliberate efforts and standard operating procedures were supposed to be utilized to direct the delivery of services or to control the quality of its service to gain client satisfaction. Unread comments and unsolicited feedback have occasionally made it difficult to respond right away. Therefore, the study has contributed to gathering a large amount of feedback from the stakeholders receiving the service. Client satisfaction has been an area of concern in any government agency that built trust, achieve competitive advantage and sustainable growth through service quality. The neglect of service quality has led to unwanted feedback, negative image and reputation, loss of trust from public and stakeholders.

Finally, this study determined the critical dimensions of service quality and their association to internal and external stakeholders' satisfaction. By conducting a comprehensive analysis of the existing literature, this study provided valuable insights for organization seeking to enhance the service offerings and improve overall client satisfaction. The researcher was highly motivated to identify the relationship between service quality and internal and external stakeholders' satisfaction in the City Schools Division of Cabuyao.

Research Questions

The main idea of the study was to determine and gain an understanding of the service quality and internal and external stakeholders' satisfaction in the City Schools Division of Cabuyao. To develop a program, the Division Office identified the significant difference and relationship between service quality and internal and external stakeholders' satisfaction. Specifically, this study answered the following questions:

1. What is the level of service quality in the City Schools Division of Cabuyao as assessed by internal and external stakeholders in terms of:

    1.1 Reliability,
    1.2. Responsiveness,
    1.3. Empathy,
    1.4. Assurance, and
    1.5. Tangibility?

2. What is the level of satisfaction among internal and external stakeholders in the City Schools Division of Cabuyao in terms of:

2.1 Responsiveness,
2.2. Reliability,
2.3. Access and Facilities,
2.4. Communication,
2.5. Cost,
2.6. Integrity, and
2.7. Assurance?

3. Is there any significant difference between the assessment of the internal and external stakeholders on the level of service quality and level of satisfaction in the City Schools Division of Cabuyao?

4. Is there any significant relationship between the level of service quality and level of satisfaction among the internal and external stakeholders in the City Schools Division of Cabuyao?

5. Based on the findings of the study, what program may be proposed?

METHODOLOGY

This study utilized a quantitative research design. The descriptive-correlational method of research describes the current state of a variable and is used to evaluate the extent of a relationship between the variables using statistical data. This study also utilized two questionnaires namely: Service Quality, and Internal and External Stakeholders' Satisfaction Assessment Tool to collect the data which were gathered from 235 teaching/non-teaching personnel (internal stakeholders) and 235 parents of the students (external stakeholders) in the City Schools Division of Cabuyao. The study used a G power program to identify the number of respondents with an effect size of .15, a margin of error of .05, and a confidence level of .95

RESULTS

Table 1.1

Level of Service Quality in the City Schools Division of Cabuyao as Assessed by Internal and External Stakeholders in terms of Reliability

Indicators in terms of Reliability	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao personnel provide service as promised.	3.52	VG	3.55	VG	3.54	VG	1
2. SDO Cabuyao personnel are dependable in handling clients' service problems.	3.41	VG	3.44	VG	3.43	VG	3
3. SDO Cabuyao personnel perform services right the first time.	3.38	VG	3.38	VG	3.38	VG	4.5
4. SDO Cabuyao personnel inspire trust and confidence in clients.	3.42	VG	3.34	VG	3.38	VG	4.5
5. SDO Cabuyao personnel have speed and ease of procedures.	3.49	VG	3.45	VG	3.47	VG	2
GENERAL ASSESSMENT	3.44	VG	3.43	VG	**3.44**	**VG**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/ Very Good
2.50 – 3.24 Agree (A)/ Good
1.75 – 2.49 Disagree (D)/Fair
1.00 – 1.74 Strongly Disagree (SD)/ Poor

Table 1.2

Level of Service Quality in the City Schools Division of Cabuyao as Assessed by Internal and External Stakeholders in terms of Responsiveness

Indicators in terms of Responsiveness	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao personnel are prompt in service to clients.	3.44	VG	3.40	VG	3.42	VG	4.5
2. SDO Cabuyao personnel are sympathetic and reassuring.	3.46	VG	3.38	VG	3.42	VG	4.5
3. SDO Cabuyao personnel are always ready for needed documents.	3.38	VG	3.49	VG	3.44	VG	3
4. SDO Cabuyao personnel are responsive to the needs of clients.	3.42	VG	3.49	VG	3.46	VG	1.5
5. SDO Cabuyao personnel are friendly and courteous.	3.45	VG	3.47	VG	3.46	VG	1.5
GENERAL ASSESSMENT	3.43	VG	3.45	VG	**3.44**	**VG**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/ Very Good
2.50 – 3.24 Agree (A)/ Good
1.75 – 2.49 Disagree (D)/Fair
1.00 – 1.74 Strongly Disagree (SD)/ Poor

Table 1.3

Level of Service Quality in the City Schools Division of Cabuyao as Assessed by Internal and External Stakeholders in terms of Empathy

Indicators in terms of Empathy	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao personnel are giving clients individual attention.	3.46	VG	3.33	VG	3.40	VG	2
2. SDO Cabuyao personnel are never too busy to respond to requests.	3.41	VG	3.31	VG	3.36	VG	3
3. SDO Cabuyao personnel have the best interest at heart.	3.40	VG	3.28	VG	3.34	VG	4
4. SDO Cabuyao personnel understand your specific needs.	3.40	VG	3.24	VG	3.32	VG	5
5. SDO Cabuyao personnel are approachable and readily available.	3.48	VG	3.40	VG	3.44	VG	1
GENERAL ASSESSMENT	3.43	VG	3.31	VG	**3.37**	**VG**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/ Very Good
2.50 – 3.24 Agree (A)/ Good
1.75 – 2.49 Disagree (D)/Fair
1.00 – 1.74 Strongly Disagree (SD)/ Poor

Table 1.4

Level of Service Quality in the City Schools Division of Cabuyao as Assessed by Internal and External Stakeholders in terms of Assurance

Indicators in terms of Assurance	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao personnel maintain clients' confidentiality.	3.46	VG	3.38	VG	3.42	VG	1.5
2. SDO Cabuyao personnel are well-versed in procedure explanation.	3.43	VG	3.40	VG	3.42	VG	1.5
3. SDO Cabuyao personnel can meet the allotted response time.	3.40	VG	3.36	VG	3.38	VG	3
4. SDO Cabuyao personnel provide high-quality information.	3.40	VG	3.26	VG	3.33	VG	4
5. SDO Cabuyao personnel can answer question with confidence.	3.39	VG	3.31	VG	3.35	VG	5
GENERAL ASSESSMENT	3.42	VG	3.34	VG	**3.38**	**VG**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/ Very Good
2.50 – 3.24 Agree (A)/ Good
1.75 – 2.49 Disagree (D)/Fair
1.00 – 1.74 Strongly Disagree (SD)/ Poor

Table 1.5

Level of Service Quality in the City Schools Division of Cabuyao as Assessed by Internal and External Stakeholders in terms of Tangibility

Indicators in terms of Tangibility	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao has an accessible service place.	3.33	VG	3.23	VG	3.28	VG	5
2. SDO Cabuyao has displayed signages.	3.37	VG	3.29	VG	3.33	VG	3
3. SDO Cabuyao has a spacious waiting area.	3.38	VG	3.40	VG	3.39	VG	2
4. SDO Cabuyao has enough light and air circulation.	3.34	VG	3.26	VG	3.30	VG	4
5. SDO Cabuyao provides tables and chairs.	3.43	VG	3.43	VG	3.43	VG	1
GENERAL ASSESSMENT	3.37	VG	3.32	VG	**3.35**	**VG**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/ Very Good
2.50 – 3.24 Agree (A)/ Good
1.75 – 2.49 Disagree (D)/Fair
1.00 – 1.74 Strongly Disagree (SD)/ Poor

Table 2.1

Level of Satisfaction among Internal and External Stakeholders in the City Schools Division of Cabuyao in terms of Responsiveness

Indicators in terms of Responsiveness	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao personnel are willing to help and assist.	3.52	FS	3.45	FS	3.49	FS	1
2. SDO Cabuyao personnel respond promptly to your needs and requests.	3.42	FS	3.42	FS	3.42	FS	5
3. SDO Cabuyao personnel show the frequency of the service.	3.52	FS	3.43	FS	3.48	FS	2
4. SDO Cabuyao personnel show professionalism.	3.43	FS	3.44	FS	3.44	FS	3.5
5. SDO Cabuyao personnel are swift in delivering the result.	3.45	FS	3.43	FS	3.44	FS	3.5
GENERAL ASSESSMENT	3.47	FS	3.43	FS	**3.45**	**FS**	

Legend: 3.25 – 4.00 Strongly Agree(SA)/Fully Satisfied
2.50 – 3.24 Agree(A)/Satisfied
1.75 – 2.49 Disagree (D)/Partially Satisfied
1.00 – 1.74 Strongly Disagree(SD)/Not Satisfied

Table 2.2

Level of Satisfaction among Internal and External Stakeholders in the City Schools Division of Cabuyao in terms of Reliability

Indicators in terms of Reliability	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao personnel provide what was needed and what was promised, in accordance with the policy and standards, with zero to a minimal error rate.	3.42	FS	3.41	FS	3.42	FS	1
2. SDO Cabuyao personnel provide promises to do something by a certain time.	3.37	FS	3.38	FS	3.38	FS	4.5
3. SDO Cabuyao personnel show a sincere interest in solving problems.	3.37	FS	3.40	FS	3.39	FS	3
4. SDO Cabuyao personnel make information easily obtainable by the clients.	3.37	FS	3.39	FS	3.38	FS	4.5
5. SDO Cabuyao personnel provide accurate information and services.	3.40	FS	3.41	FS	3.41	FS	2
GENERAL ASSESSMENT	3.38	FS	3.40	FS	**3.39**	**FS**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/Fully Satisfied
2.50 – 3.24 Agree(A)/Satisfied
1.75 – 2.49 Disagree (D)/Partially Satisfied
1.00 – 1.74 Strongly Disagree (SD)/Not Satisfied

Table 2.3

Level of Satisfaction among Internal and External Stakeholders in the City Schools Division of Cabuyao in terms of Access and Facilities

Indicators in terms of Access and Facilities	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao has a convenient location, ample amenities for a comfortable transaction, clear signages, and modes of technology	3.30	FS	3.26	FS	3.28	FS	5
2. SDO Cabuyao has modern equipment.	3.32	FS	3.29	FS	3.31	FS	3.5
3. SDO Cabuyao has shelves, customer service counters, computers, and lights that are visually appealing.	3.32	FS	3.30	FS	3.31	FS	3.5
4. SDO Cabuyao provides drinking water and restrooms.	3.35	FS	3.36	FS	3.36	FS	2
5. SDO Cabuyao holds professional appearance.	3.39	FS	3.41	FS	3.40	FS	1
GENERAL ASSESSMENT	3.34	FS	3.33	FS	**3.34**	**FS**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/Fully Satisfied
2.50 – 3.24 Agree(A)/Satisfied
1.75 – 2.49 Disagree (D)/Partially Satisfied
1.00 – 1.74 Strongly Disagree (SD)/Not Satisfied

Table 2.4

Level of Satisfaction among Internal and External Stakeholders in the City Schools Division of Cabuyao in terms of Communication

Indicators in terms of Communication	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao personnel act keeping citizens and businesses informed in a language they can easily understand, as well as listening to their feedback.	3.49	FS	3.50	FS	3.50	FS	1
2. Client received clarity and accuracy of information.	3.43	FS	3.46	FS	3.45	FS	4
3. SDO Cabuyao personnel effectively convey the intended message during the communication process.	3.47	FS	3.48	FS	3.48	FS	2
4. SDO Cabuyao personnel actively listen to your needs and concerns.	3.42	FS	3.44	FS	3.43	FS	5
5. SDO Cabuyao personnel has knowledge of the subject matter being discussed.	3.46	FS	3.46	FS	3.46	FS	3
GENERAL ASSESSMENT	3.45	FS	3.47	FS	**3.46**	**FS**	

Legend: 3.25 – 4.00 Strongly Agree(SA)/Fully Satisfied 1.75 – 2.49 Disagree (D)/Partially Satisfied
2.50 – 3.24 Agree(A)/Satisfied 1.00 – 1.74 Strongly Disagree(SD)/Not Satisfied

Table 2.5

Level of Satisfaction among Internal and External Stakeholders in the City Schools Division of Cabuyao in terms of Cost

Indicators in terms of Cost	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. Satisfaction with the timelines of the billing, billing process/es, preferred methods of payment period, value for money, acceptable range of costs, and qualitative information on the cost of each service.	3.53	FS	3.42	FS	3.48	FS	1
2. Cost of the service align with your expectations and the level of quality you received.	3.43	FS	3.39	FS	3.41	FS	4
3. SDO Cabuyao provide with clear and transparent pricing information before utilizing the service.	3.49	FS	3.37	FS	3.43	FS	2
4. SDO Cabuyao provide you with an itemized breakdown of the costs involved, such as service fees, additional charges, or taxes.	3.46	FS	3.38	FS	3.42	FS	3
5. Cost of the service accurately reflects the level of professionalism, expertise, and attention to detail exhibited.	3.43	FS	3.33	FS	3.38	FS	5
GENERAL ASSESSMENT	3.47	FS	3.38	FS	**3.43**	**FS**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/Fully Satisfied 1.75 – 2.49 Disagree (D)/Partially Satisfied
2.50 – 3.24 Agree(A)/Satisfied 1.00 – 1.74 Strongly Disagree (SD)/Not Satisfied

Table 2.6

Level of Satisfaction among Internal and External Stakeholders in the City Schools Division of Cabuyao in terms of Integrity

Indicators in terms of Integrity	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao personnel has the capability to perform their duties, product, and service knowledge, understand client needs, helpfulness, and good work relationships.	3.50	FS	3.44	FS	3.47	FS	1
2. SDO Cabuyao personnel are polite and respectful in conversation.	3.43	FS	3.45	FS	3.44	FS	4
3. SDO Cabuyao personnel are friendly.	3.43	FS	3.47	FS	3.45	FS	3
4. SDO Cabuyao personnel are caring and concerned to clients.	3.43	FS	3.48	FS	3.46	FS	2
5. Clients feel safe in their transactions with personnel at the counters.	3.39	FS	3.41	FS	3.40	FS	5
GENERAL ASSESSMENT	3.43	FS	3.45	FS	**3.44**	**FS**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/Fully Satisfied 1.75 – 2.49 Disagree (D)/Partially Satisfied
2.50 – 3.24 Agree(A)/Satisfied 1.00 – 1.74 Strongly Disagree (SD)/Not Satisfied

Table 2.7

Level of Satisfaction among Internal and External Stakeholders in the City Schools Division of Cabuyao in terms of Assurance

Indicators in terms of Integrity	Internal		External		Composite		Rank
	$\bar{X}$	VI	$\bar{X}$	VI	$\bar{X}$	VI	
1. SDO Cabuyao personnel are honest, fair, and trustworthy in each service while dealing with clients and businesses.	3.45	FS	3.49	FS	3.47	FS	3
2. SDO Cabuyao keep records with confidentiality and accuracy.	3.46	FS	3.44	FS	3.45	FS	5
3. SDO Cabuyao personnel are knowledgeable of the service offered.	3.46	FS	3.51	FS	3.49	FS	1.5
4. Clients have confidence and trust in personnel in service.	3.43	FS	3.48	FS	3.46	FS	4
5. Clients have a safe transaction with personnel.	3.46	FS	3.52	FS	3.49	FS	1.5
GENERAL ASSESSMENT	3.45	FS	3.49	FS	**3.47**	**FS**	

Legend: 3.25 – 4.00 Strongly Agree (SA)/Fully Satisfied 1.75 – 2.49 Disagree (D)/Partially Satisfied
2.50 – 3.24 Agree(A)/Satisfied 1.00 – 1.74 Strongly Disagree (SD)/Not Satisfied

Table 3.1

Test of Significant Difference on the Assessment of the Internal and External Stakeholders on the Level of Service Quality in the City Schools Division of Cabuyao

Sub-variables		Sum of squares	df	Mean square	F Ratio	Sig.	Remarks	Decision
Reliability	Between Groups	.019	1	.019	.066	.798	Not Significant	Accept H_o
	Within Groups	136.787	468	.292				
	Total	136.806	469					
Responsiveness	Between Groups	.038	1	.038	.138	.710	Not Significant	Accept H_o
	Within Groups	127.138	468	.272				
	Total	127.175	469					
Empathy	Between Groups	1.621	1	1.621	5.189	.023	Significant	Reject H_o
	Within Groups	146.191	468	.312				
	Total	147.811	469					
Assurance	Between Groups	.629	1	.629	2.170	.141	Not Significant	Accept H_o
	Within Groups	135.734	468	.290				
	Total	136.364	469					
Tangibility	Between Groups	.286	1	.286	.992	.320	Not Significant	Accept H_o
	Within Groups	135.083	468	.289				
	Total	135.369	469					

Level of significance 0.05

Table 3.2

Test of Significant Difference on the Assessment of the Internal and External Stakeholders on the Level of Satisfaction in the City Schools Division of Cabuyao

Sub-variables		Sum of squares	df	Mean square	F Ratio	Sig.	Remarks	Decision
Responsiveness	Between Groups	.123	1	.123	.416	.519	Not Significant	Accept H_o
	Within Groups	138.252	468	.295				
	Total	138.374	469					
Reliability	Between Groups	.014	1	.014	.050	.823	Not Significant	Accept H_o
	Within Groups	135.101	468	.289				
	Total	135.115	469					
Access and Facilities	Between groups	.017	1	.017	.049	.825	Not Significant	Accept H_o
	Within Groups	160.230	468	.342				
	Total	160.246	469					
Communication	Between Groups	.017	1	.017	.059	.808	Not Significant	Accept H_o
	Within Groups	132.107	468	.282				
	Total	132.124	469					
Cost	Between Groups	.974	1	.974	3.037	.082	Not Significant	Accept H_o
	Within Groups	150.149	468	.321				
	Total	151.123	469					
Integrity	Between Groups	.022	1	.022	.065	.798	Not Significant	Accept H_o
	Within Groups	155.721	468	.333				
	Total	155.743	469					
Assurance	Between Groups	.157	1	.157	.481	.488	Not Significant	Accept H_o
	Within Groups	153.061	468	.327				
	Total	153.219	469					

Level of significance 0.05

Table 4

Test of Significant Relationship between the Level of Service Quality and Level of Satisfaction among the Internal and External Stakeholders in the City Schools Division of Cabuyao

Service Quality	Satisfaction	r value	P value	Remarks	Decision
Reliability	Responsiveness	.409**	.000	Significant	Reject H_o
	Reliability	.422**	.000	Significant	Reject H_o
	Access and Facilities	.386**	.000	Significant	Reject H_o
	Communication	.400**	.000	Significant	Reject H_o
	Cost	.385**	.000	Significant	Reject H_o
	Integrity	.390**	.000	Significant	Reject H_o
	Assurance	.407**	.000	Significant	Reject H_o
Responsiveness	Responsiveness	.422**	.000	Significant	Reject H_o
	Reliability	.448**	.000	Significant	Reject H_o
	Access and Facilities	.402**	.000	Significant	Reject H_o
	Communication	.424**	.000	Significant	Reject H_o
	Cost	.387**	.000	Significant	Reject H_o
	Integrity	.411**	.000	Significant	Reject H_o
	Assurance	.418**	.000	Significant	Reject H_o
Empathy	Responsiveness	.372**	.000	Significant	Reject H_o
	Reliability	.371**	.000	Significant	Reject H_o
	Access and Facilities	.347**	.000	Significant	Reject H_o
	Communication	.336**	.000	Significant	Reject H_o
	Cost	.348**	.000	Significant	Reject H_o
	Integrity	.341**	.000	Significant	Reject H_o
	Assurance	.342**	.000	Significant	Reject H_o
Assurance	Responsiveness	.392**	.000	Significant	Reject H_o
	Reliability	.395**	.000	Significant	Reject H_o
	Access and Facilities	.361**	.000	Significant	Reject H_o
	Communication	.380**	.000	Significant	Reject H_o
	Cost	.368**	.000	Significant	Reject H_o
	Integrity	.380**	.000	Significant	Reject H_o
	Assurance	.366**	.000	Significant	Reject H_o
Tangibility	Responsiveness	.338**	.000	Significant	Reject H_o
	Reliability	.341**	.000	Significant	Reject H_o
	Access and Facilities	.350**	.000	Significant	Reject H_o
	Communication	.327**	.000	Significant	Reject H_o
	Cost	.325**	.000	Significant	Reject H_o
	Integrity	.336**	.000	Significant	Reject H_o
	Assurance	.298**	.000	Significant	Reject H_o

**Correlational at the level 0.01 *Correlational at the level 0.05(Two-tailed)

Table 5

Proposed Action Plan to Enhance the Service Quality in terms of Empathy in the City Schools Division of Cabuyao

***Project CARE**: Cultivating Authentic Relationship with Empathy*

KEY AREAS	OBJECTIVES	STRATEGIES/ ACTIVITIES	FREQUENCY	PERSONS INVOLVED	SUCCESS INDICATORS
Cultivating Leadership and Culture	To elevate leadership commitment and foster a culture of empathy	Leadership Modeling Recognition for Empathetic Leadership	Annually Quarterly	City Schools Division of Cabuyao Personnel	85-90% of employees elevate leadership commitment and foster a culture of empathy
Amplify Employee Training	To promote ongoing training and focus on active listening, understanding, and stakeholders' perspectives	Empathy Workshops Peer-to-Peer Learning	Annually	City Schools Division of Cabuyao Personnel	90-95% of employees promote ongoing training and focus on active listening, understanding, and stakeholders' perspectives
Refine Communication Skills	To improve communication skills, emphasize clear and positive communication and enhance both verbal and written interactions	Body Language Awareness Communication Style Assessments	Annually	City Schools Division of Cabuyao Personnel	85-90% of employees improve communication skills, emphasize clear and positive communication, and enhance both verbal and written interactions
Establish Stakeholders' Feedback Mechanism	To implement a systematic process for collecting stakeholders feedback to understand satisfaction levels	Real-time Feedback Tools Employee Training on Handling Feedback	Annually	City Schools Division of Cabuyao Personnel	90-95% of employees implement a systematic process for collecting stakeholders feedback to understand satisfaction levels

DISCUSSION

Table 1.1

Reliability was **Very Good (3.44)** in the City Schools Division of Cabuyao as assessed by Internal and External Stakeholders. All indicators were verbally interpreted as Very Good. Furthermore, the indicator “SDO Cabuyao personnel provide service as promised” had the highest computed mean of **3.54**. Meanwhile, the indicators “SDO Cabuyao personnel perform services right the first time” and “SDO Cabuyao personnel inspire trust and confidence in clients” had the lowest computed mean of **3.38**. It can be concluded that internal and external Stakeholders in the City Schools Division of Cabuyao are very satisfied in terms of Reliability. SDO Cabuyao personnel delivering services as promised. It makes sure that they are quick and simple to deal with while managing customer service issues. However, to enable employees to work toward certain objectives and targets connected to their commitment, they should concentrate more on delivering services correctly for the first time to inspire clients' confidence and faith. Identifying the actions that deserve praise and recognition is helpful.

To support the result, Varsanis et al. (2019) mentioned that service quality provision was one of the most important aspects of hotel businesses' attempts to fortify their position in the fiercely competitive environment and pursue sustainability, profitability, and growth prospects. A quality managerial staff with knowledge, skills, professionalism, interpersonal skills, conscientiousness, a high sense of responsibility, and consistency in the company's effort to continually improved the quality was found to be necessary for immediate and effective problem solving, quick and error-free or omitted service, quick and accurate information, compliance with the agreed upon, and the provision of personal and individualized care. Furthermore, Sherman (2019, as cited in Vu, 2021) studied the service quality importance did not just result through customer loss but had a significant positive impact when doing it correctly, such as operating costs reduction, lowering purchasing barriers and increasing sales. It required more time and money to attract new customers as opposed to retaining established ones.

Table 1.2

Responsiveness was **Very Good (3.44)** in the City Schools Division of Cabuyao as assessed by Internal and External Stakeholders. All indicators were verbally interpreted as Very Good. Furthermore, the indicators “SDO Cabuyao personnel are responsive to the needs of clients” and “SDO Cabuyao personnel are friendly and courteous” had the highest computed mean of **3.46**. Meanwhile, the indicators “SDO Cabuyao personnel are prompt in service to clients” and “SDO Cabuyao personnel are sympathetic and reassuring” had the lowest computed mean of **3.42**.

It is concluded that both Internal and External Stakeholders in the City Schools Division of Cabuyao are very satisfied with Responsiveness because they think SDO personnel were being kind and comforting, alertness is there that meet the needs of clients, provides consistent quality of service. SDO Cabuyao personnel has to make sure

they meet the customer perception and expectation, should be constantly prepared with the necessary documents needed by the clients to prevent future problems. Having said that, SDO personnel gives attention on providing timely service and someone who can really understand any situations, showing sympathy and a public servant who understand clients' feelings.

It is consistent with the findings of Dewi (2019) that excellent service quality was based not only on the service provider's perspective but also on service users' perceptions. The service user perception of service quality was a comprehensive assessment of a service. Customer's need was the key to service quality and a significant factor in business strategy. Factors influenced service users' perception included service encounters, evidence of service, company image, and service price. Quality of service that can satisfy customers is proven to increase profitability to be a competitive advantage tool. Excellent service quality created repeat purchases, positive word of mouth, customer loyalty, and competitive service differentiation. In addition, Fitzsimmons et al. (2018, as cited in Ting et al., 2019) stated that service quality refers to the overall excellence or superiority of the services provided by an organization. It was a measure of how well a service meets or exceeds customer expectations and requirements.

Table 1.3

Empathy was **Very Good (3.37)** in the City Schools Division of Cabuyao as assessed by Internal and External Stakeholders. All indicators were verbally interpreted as Very Good. Furthermore, the indicator "SDO Cabuyao personnel are approachable and readily available" had the highest computed mean of **3.44**. Meanwhile, the indicator "SDO Cabuyao personnel understand your specific needs" had the lowest computed mean of **3.32**.

The results infer that both internal and external stakeholders in the City Schools Division of Cabuyao are very satisfied in terms of Empathy. Clients have assessed SDO Cabuyao personnel as being accessible, friendly and each client has been given attention. Despite SDO Cabuyao personnel having lots of paperwork and workloads, they are never too busy to answer inquiries as part of value-added service quality and recognizing individual expectations.

Evidently, the study conducted by Sameena (2020) stated that two aspects of service quality, namely core and value-added service quality, have been the focus of attention in educational institutions. The fundamental service quality metrics created by the industry pioneer made up the core service quality. These were reliability, responsiveness, empathy, assurance, and tangibles. With every customer, or even just one customer all the time, service quality varies. As a result, marketing jobs are difficult. They must make sure that these aspects of the education services are used more effectively to satisfy the various needs of the clients. Moreover, Jones et al. (2019) stated that effective communication skills, including active listening and empathy, are essential for building rapport and understanding customer needs. Service providers who actively

listen, validate customer concerns and communicate understanding demonstrate empathy, contributing to enhanced service quality perceptions.

Table 1.4

Assurance was **Very Good (3.38)** in the City Schools Division of Cabuyao as assessed by Internal and External Stakeholders. All indicators were verbally interpreted as Very Good. Furthermore, the indicators “SDO Cabuyao personnel maintain clients’ confidentiality” and “SDO Cabuyao personnel are well-versed in procedure explanation” had the highest computed mean of **3.42**. Meanwhile, the indicator “SDO Cabuyao personnel can answer question with confidence” had the lowest computed mean of **3.35**.

It can be concluded that both internal and external stakeholders are very satisfied in terms of Assurance in the City Schools Division of Cabuyao. Client’s confidentiality is genuinely maintained by all departments in SDO Cabuyao as well the personnel are knowledgeable about explaining procedures to clear things to avoid confusion for both sides. SDO Cabuyao personnel ensures that they can be able to respond within the designated time and make necessary adjustments if needed in every transaction. Clients are more particular in delivering excellent information and must pay attention to prevent complaints and could correct existing conflicts or problems.

In like manner, Choi et al. (2022) mentioned that explicit service guarantees and policies provide customers with assurance regarding the quality and reliability of the service. Offering warranties, satisfaction guarantees, and refund policies communicates confidence in the service offering and mitigates perceived risks. Likewise, according to Valenzo et al. (2019), evaluating the quality of public transport service is an area of opportunity that should not be missed, as it is beneficial for meeting the necessities of society and allowing organizations to improve their activities. This gave them the opportunity to correct the problems presented in the service, to become a profitable business, without neglecting the users of this service.

Table 1.5

Tangibility was **Very Good (3.35)** in the City Schools Division of Cabuyao as assessed by Internal and External Stakeholders. All indicators were verbally interpreted as Very Good. Furthermore, the indicator “SDO Cabuyao provides tables and chairs” had the highest computed mean of **3.43**. Meanwhile, the indicator “SDO Cabuyao has an accessible service place” had the lowest computed mean of **3.28**.

It can be concluded that both internal and external Stakeholders in the City Schools Division of Cabuyao are very satisfied in terms of Tangibility. It is proven that SDO Cabuyao provides tables and chairs that can accommodate large number of clients visiting the offices with a spacious waiting area and has displayed signages allocating different offices. These are some of the features that can enhance customer services to meet the expectations and satisfaction of the clients.

Certainly, Johnson and Patel (2019) mentioned that well-designed and maintained physical facilities contribute to positive perceptions of service quality. Cleanliness, aesthetics, and comfort of facilities influence customer experiences and shape their overall satisfaction levels. Likewise, Fida et al. (2020, as cited in Dider, 2021) defined service quality as the fundamental abilities of a specific business or sector to satisfy the intended client expectations. Moreover, Zygiaris et al. (2022) mentioned that service quality can be considered crucial because it helped to increase an organization's competitiveness. Organizations specifically used this information about consumer perceptions of service quality as a tool to enhance their customer services. For instance, understanding the necessary customer service would make it easier to facilitate training programs aimed at educating all employees on how to enhance and provide high-quality client services. Besides, information about client services would be crucial in the firm's decision-making process regarding its marketing initiatives, giving it a competitive advantage in the market.

Table 2.1

Responsiveness was **Fully Satisfied (3.45)** in the City Schools Division of Cabuyao as assessed by the internal and external stakeholders. All indicators were verbally interpreted as Fully Satisfied. Furthermore, the indicator “SDO Cabuyao personnel are willing to help and assist” had the highest computed mean of **3.49**. Meanwhile, the indicator “SDO Cabuyao personnel respond promptly to your needs and requests” had the lowest computed mean of **3.42**.

It can be concluded that both internal and external stakeholders in the City Schools Division of Cabuyao are highly satisfied in terms of Responsiveness because SDO Cabuyao personnel are eager to lend a hand. It is the act of offering assistance and support to both new and current clients. It is a crucial component of the whole client experience. Employees at SDO Cabuyao are required to report on how frequently they meet customer requests and gauge their general level of satisfaction using the feedback facility on a weekly basis. Everyone also exhibits professionalism in any circumstance including a variety of client personalities and behaviors. SDO Cabuyao personnel ensures immediate response in delivering the result to surpass client expectations. Clients, however, expect a quicker response to their demands and inquiries.

Kotler (2019) provided evidence to support the findings stating that customer satisfaction was a feeling of happiness or dissatisfaction that someone experienced after comparing a product's performance to what was anticipated. Customer satisfaction was measured by whether performance meets or exceeds expectations. If performance falls short of expectations, there were unhappy customers; if performance surpasses expectations, there were satisfied consumers. Correspondingly, according to Muralidharan et al. (2023), customers were deemed to be individuals who were satisfied with any company unit, which incorporated into its master plan. The immediate calculation of the reward and client satisfaction were essential success measures. With a better grasp of consumer perception, businesses identified what efforts must be made to suit

the demands of their customers. It assisted in recognizing the company's own strengths and shortcomings, as well as mapping the route for future upgrades and advances.

Table 2.2

Reliability was **Fully Satisfied (3.39)** in the City Schools Division of Cabuyao as assessed by the internal and external stakeholders. All indicators were verbally interpreted as Fully Satisfied. Furthermore, the indicator “SDO Cabuyao personnel provide what was needed and what was promised, in accordance with the policy and standards, with zero to a minimal error rate” had the highest computed mean of **3.42**. Meanwhile, the indicators “SDO Cabuyao personnel provide promises to do something by a certain time” and SDO Cabuyao personnel make information easily obtainable by the clients” had the lowest computed mean of **3.38**.

It is concluded that the majority of SDO Cabuyao personnel fulfill their commitments and deliver on their promises in compliance with the policy and standards, with very little to no error rate which is why both internal and external stakeholders in the City Schools Division of Cabuyao are highly satisfied in terms of Reliability. SDO Cabuyao personnel deliver accurate information and services through client participation, and this kind of engagement not only improves the service but also raises customer satisfaction. When clients visit the office, they are eager to provide feedback and show willingness to spread the positive word-of-mouth because they perceive that SDO Cabuyao personnel genuinely cares about finding solutions to issues that are highly appreciated.

In supporting the findings, it is worth mentioning the research study by Wu et al. (2020), which confirmed that customer satisfaction lies on the traditional model of service, reflected a one-way distribution wherein customers get the service exactly how the provider distributed it to them. Yet, when the customer's willingness to assist in service building rises, customer participation quickly emerged throughout service delivery. The method of service delivery in the financial services sector has evolved and changed considerably over time. Service delivery had changed from being one-way to including clients in the process by expressing their wants. Such involvement not only enhanced the service but also increased consumers' satisfaction. This study evaluated whether customer participation increased customer satisfaction by examining the factors that influenced it, such as interactional fairness, customer education, affective commitment, and firm support. Markedly, Wirtz et al. (2012, as cited in Abidin, 2023) stated that customers who were satisfied and happy with the products or services provided tend to repurchase, spread positive word-of-mouth, and even become ambassadors for a company. Conversely, dissatisfied customers seek and switch to other products or service providers.

Table 2.3

Access and Facilities were **Fully Satisfied (3.34)** in the City Schools Division of Cabuyao as assessed by the internal and external stakeholders. All indicators were verbally interpreted as Fully Satisfied. Furthermore, the indicator “SDO Cabuyao holds

professional appearance" had the highest computed mean of **3.40**. Meanwhile, the indicator "SDO Cabuyao has a convenient location, ample amenities for a comfortable transaction, clear signages, and modes of technology" had the lowest computed mean of **3.28**.

It can be concluded that both internal and external stakeholders are highly satisfied with Access and Facilities in the City Schools Division of Cabuyao. Based on their knowledge, SDO Cabuyao personnel present themselves professionally to handle customer complaints and concerns to keep positive customer relations by allowing client to access each office for a certain transaction. SDO Cabuyao offers its clients drinking water and restrooms, which has turned into one of the services that is commendable. SDO Cabuyao is still improving and expanding its offerings, which included modern equipment, aesthetically pleasing lighting, computers, customer service counters and more.

The result was consistent with the recent study conducted by Marquez et al. (2019). It was stated that customer satisfaction served as the foundation for recognizing the issues experienced with the services provided by import processing firms, which served as a platform for the firms' future owners. Every single employee must be aware of how to manage client concerns and complaints to maintain good customer relations. The function of objectives in having a very satisfied client was fascinating and useful in terms of customer satisfaction. Because a client only interacts with a firm through customer service, it was crucial to an organization. Customers were essential to a business. Customers were the cornerstone of every business; without customers using their products or services, there would be no revenue to support operations. Undoubtedly, Ilfana et al. (2022) study resulted that product quality affected customer satisfaction, product quality affected customer loyalty, customer satisfaction affected customer loyalty, and product quality affected customer loyalty mediated by customer satisfaction.

Table 2.4

Communication was **Fully Satisfied (3.46)** in the City Schools Division of Cabuyao as assessed by the internal and external stakeholders. All indicators were verbally interpreted as Fully Satisfied. Furthermore, the indicator "SDO Cabuyao personnel act keeping citizens and businesses informed in a language they can easily understand, as well as listening to their feedback" had the highest computed mean of **3.50**. Meanwhile, the indicator "SDO Cabuyao personnel actively listen to your needs and concerns" had the lowest computed mean of **3.43**.

It is concluded that both internal and external Stakeholders in the City Schools Division of Cabuyao are extremely satisfied with the level of communication provided by SDO Cabuyao personnel, who act to inform clients in a language that is easily understood while also soliciting their feedback. One of the most crucial requirements to survive, satisfy and meet the needs of the clients is effective communication. Clients find that SDO Cabuyao personnel are knowledgeable about the topics being discussed and can effectively communicate the intended message during the communication process.

Considering the data presented above, Islam et al. (2023) mentioned that every business overcome obstacles to survive in the competitive market where clients are seen as the lifeblood of any business. Thus, customer satisfaction was an essential responsibility for every business. Similarly, Jones and Brown (2019) mentioned that effective communication and transparency in service delivery processes play a crucial role in assuring customers. Clear and timely information regarding service procedures, pricing, and potential risks fosters trust and reduces uncertainty, thereby enhancing satisfaction levels.

Table 2.5

The Internal and External Stakeholders in the City Schools Division of Cabuyao were **Fully Satisfied** in terms of **Cost** (Mean = **3.43**). All indicators were verbally interpreted as Fully Satisfied. Furthermore, the indicator "Satisfaction with the timelines of the billing, billing process/es, preferred methods of payment period, value for money, acceptable range of costs, and qualitative information on the cost of each service" had the highest computed mean of 3.48. Meanwhile, the indicator "Cost of the service accurately reflects the level of professionalism, expertise, and attention to detail exhibited" had the lowest computed mean of 3.38. It can be concluded that both internal and external stakeholders in the City Schools Division of Cabuyao are very satisfied with the following aspects of the cost: value for money, acceptable range of costs, preferred methods of payment period, timely billing, and qualitative information on the cost of each service. Before using the service, SDO Cabuyao provides clear and open cost information to clients to minimize any potential disputes, itemizes breakdown of the costs involved, such as service fees, additional charges, or taxes are being presented beforehand to meet client expectation toward the service cost. To support the result, according to Kotler and Keller (2016, as cited in Albari, 2020), customer satisfaction was the degree of a person's emotions after comparing the performance or results he felt with his expectations. Correspondingly, Zhou et al. (2019) stated that a firm fairly and effectively carried out manufacturing decision-making guidance proposed a way to assess customer satisfaction based on the fuzzy level kano-QDF model. As a result, the client obtained changed products in a timely and satisfactory manner.

Table 2.6

Integrity was **Fully Satisfied (3.44)** in the City Schools Division of Cabuyao as assessed by the internal and external stakeholders. All indicators were verbally interpreted as Fully Satisfied. Furthermore, the indicator "SDO Cabuyao personnel can perform their duties, product, and service knowledge, understand client needs, helpfulness, and good work relationships" had the highest computed mean of 3.47. Meanwhile, the indicator "Clients feel safe in their transactions with personnel at the counters" had the lowest computed mean of 3.40.

It can be concluded that both internal and external stakeholders in the City Schools Division of Cabuyao are highly satisfied in terms of Integrity because client see SDO

Cabuyao personnel can carry out their jobs, knowledgeable about products and services, able to understand the needs of their clients, helpful, and honest in their work relationship. The service quality is greatly executed because it has a big impact on client satisfaction. Having a friendly demeanor always helps to build and maintain enduring relationships with clients towards satisfaction. It is consistent with the findings of Khong et al. (2023), cited that to increase customer satisfaction and loyalty, manufacturing companies should focus more on developing and innovating services. Service that accompanied the product, strengthens communications, and maintains long-term relationships with customers. In today's competitive market, the quality of the accompanying services plays a decisive role in affirming the position of the products produced by the enterprise compared to similar products of the competitors. Likewise, Brown and Garcia (2021) stated that ethical behavior, including fairness, respect, and adherence to ethical standards, contributes to perceptions of integrity and trustworthiness. Customers appreciate service providers who prioritize ethical considerations in their decision-making processes and interactions, leading to increased satisfaction and loyalty.

Table 2.7

Assurance was **Fully Satisfied (3.47)** in the City Schools Division of Cabuyao as assessed by the internal and external stakeholders. All indicators were verbally interpreted as Fully Satisfied. Furthermore, the indicators “SDO Cabuyao personnel are knowledgeable of the service offered” and “Clients have a safe transaction with personnel” had the highest computed mean of 3.49. Meanwhile, the indicator “SDO Cabuyao keep records with confidentiality and accuracy” had the lowest computed mean of 3.45.

When it comes to assurance, it can be concluded that both internal and external stakeholders in the City Schools Division of Cabuyao are extremely satisfied because SDO Cabuyao personnel are knowledgeable of the service offered. They feel safe while doing transaction with the personnel in every way, being honest, fair, and trustworthy in each service while dealing with clients and businesses are those factors to build assurance that is one of the predictors of satisfaction. Similarly, Choi and Lee (2020) stated that efficient handling of service failures and prompt resolution of customer complaints were essential for maintaining assurance of satisfaction. Studies suggested that customers were often more satisfied when service providers acknowledged and rectified mistakes promptly, demonstrating their commitment to customer-centricity. Evidently, Patel and Williams (2020) claimed that explicit service guarantees and policies provide customers with assurance regarding the quality and reliability of the service. When service providers offer warranties, satisfaction guarantees, and clear refund policies, it reduces perceived risks and enhances satisfaction levels.

Table 3.1

This means that teaching, non-teaching personnel, and parents have the same perception about Reliability, Responsiveness, Assurance, and Tangibility. Several researchers including Kefalas (2019) mentioned that service quality was an indicator of a

successful business. By recognizing the individual expectations of customers, the dimensions of service quality, and its relative importance for customers in each section of the hotel industry, hotel managers can take on the issue of improving service quality. The fact that the level of expertise and talent of the server is always directly correlated with the quality of service in the hospitality sector is a significant barrier to standardizing services. Furthermore, it is impossible to legitimately standardize experiences because they are always subjective and vary from person to person. Correspondingly, Danish (as cited in Dider, 2021) described service quality as the comparison function connecting customer expectations to the service delivered. In contrast, Sibai et al. (2021) claimed that responsiveness, empathy and tangibility dimensions of service quality had a negative gap, which means that the expected services did not meet the perceived services on the cited service quality dimensions.

Table 3.2

There was no significant difference between the responses of the two groups of respondents on the level of satisfaction in terms of Responsiveness, Reliability, Access and Facilities, Communication, Cost, Integrity, and Assurance as shown in Table 3.2. The generated computed probability values were **.519, .823, .825, .808, .082, .798 and .488** respectively which were greater than the level of significance of 0.05; thus, the null hypothesis was accepted. This means that teaching, non-teaching personnel, and parents have the same perception with regards to Responsiveness, Reliability, Access and Facilities, Communication, Cost, Integrity, and Assurance.

In like manner with the study of Sibai et al. (2021), they concluded that when overall satisfaction was measured, students expressed satisfaction to the college services. Year level was a predictor for all measures of student satisfaction, while GPA was identified as a negative predictor to student satisfaction in terms of faculty. Students' satisfaction in terms of faculty was best predicted by responsiveness, assurance, tangibility. Meanwhile, assurance was a predictor of students' satisfaction in terms of curriculum. Responsibility, responsiveness, and assurance, on the other hand, were predictors of students' satisfaction in terms of students' services and facilities. Finally, overall student satisfaction was predicted by responsiveness, assurance, and tangibility. For this reason, Jiang et al. (2020) mentioned that by creating an evaluation model of customer satisfaction, it calculated customer satisfaction in different service industries and identified factors that influence customer satisfaction most.

Table 4

There was a **significant relationship** between the level of service quality and the level of satisfaction. The r values ranging from **.298 to .448** were interpreted as with a **moderate positive correlation** as to correlate level of service quality and level of satisfaction. The computed probability values of .000 were lesser than the level of significant ($P<0.05$); thus, the null hypothesis is rejected.

It can be concluded that the higher the service quality in the City Schools Division of Cabuyao, the higher the stakeholders' satisfaction.

Numerous researchers including Marnovita (2020, as cited in Wibowo, 2022) stated that service quality was a strategy used by businesses to continuously improve the processes, goods, and services they produced. Service quality dimensions or indicators included customer satisfaction levels, which are inversely correlated with service quality levels. Likewise, Mulyadi (2020) mentioned that customer satisfaction was influenced by service quality, if clients were satisfied with the quality of the service, then this will be able to raise the degree of customer satisfaction. Importantly, according to Twum et al. (2020), customer satisfaction was 100% observed by dimensions of service quality i.e. Tangibility, Responsiveness, Reliability, Assurance and Empathy, through that customer needs must be given an attention. Additionally, Tan et al. (2022) showed the result indicated that four service quality dimensions (tangibles, assurance, reliability, and empathy) have a significant effect on the customers' perceived service quality from the library. Empathy was the strongest predictor of customers' perceived service quality, followed by reliability, tangibles, and assurance. The study revealed that customers' perceived service quality from the library was a significant predictor of customer satisfaction. Stakeholders' satisfaction is an extremely important factor that has an impact on a company's overall performance. In the fiercely competitive world of today, offering high quality customer service is essential and the cornerstone of any prosperous business.

Table 5

By implementing this action plan, City Schools Division of Cabuyao can cultivate a more empathetic culture, leading to improved employee-stakeholder relationships, enhanced collaboration, and a positive impact on overall well-being. Enhancing service quality with a focus on empathy involves creating a customer-centric culture where stakeholders feel understood, valued, and supported. Below is an action plan for enhancing empathy in service delivery. **Project CARE** was proposed to emphasize the importance of cultivating authentic relationships through empathy in stakeholders' interactions. It included more strategies and activities to enhance the level of service quality focusing empathy that might produce a high level of stakeholders' satisfaction.

Conclusions

After presenting the summary of findings of the study, the following conclusions were drawn:

1. That the City Schools Division of Cabuyao has established a highly effective and customer-centric service culture. Internal and external stakeholders strongly agree that SDO Cabuyao personnel consistently demonstrate reliability, responsiveness, empathy, assurance, and tangibility in their service delivery. The organization has successfully satisfied stakeholders from its inception, with personnel consistently delivering promised services quickly and simply, showing kindness, alertness, and providing individual

attention. Despite significant workloads, personnel remain accessible, promptly addressing inquiries and recognizing individual expectations. Confidentiality is well-maintained, and personnel are knowledgeable about procedures, minimizing confusion. Timely responses and necessary adjustments are priorities in every transaction. The physical environment, including tables, chairs, and clear signages, contributes to an enhanced customer experience, aligning with the overall goal of meeting and exceeding stakeholders' expectations.

2. That the City Schools Division of Cabuyao has achieved a remarkable level of satisfaction among internal and external stakeholders. The positive feedback emphasizes the personnel's eagerness to assist, commitment to fulfilling promises with minimal errors, and proactive engagement in delivering accurate information through stakeholder participation. Stakeholders appreciate the genuine care exhibited by SDO Cabuyao personnel in finding solutions to issues and fostering positive word-of-mouth. The professional handling of complaints, provision of commendable services like drinking water and restrooms, and effective communication in easily understandable language contribute to a positive client experience. Transparent cost information and the personnel's capability, knowledge, helpfulness, and honesty further strengthen stakeholder relationships. The overall satisfaction is evident in stakeholders feeling safe during transactions, emphasizing the importance of trust, fairness, and honesty as key factors in building assurance, a significant predictor of satisfaction.

3. That teaching, non-teaching personnel, and parents have the same perception with regard to reliability, responsiveness, assurance, and tangibility. They have different perceptions with regard to empathy. In addition, teaching, non-teaching personnel, and parents have the same perception with regard to responsiveness, reliability, access and facilities, communication, cost, integrity, and assurance.

4. That when the level of service quality increases, the stakeholders' satisfaction also increases. However, when the level of service quality decreases, the stakeholders' satisfaction also decreases.

5. That Project CARE is needed to incorporate initiatives and strategies emphasizing the importance of cultivating authentic relationships through empathy in stakeholders' interactions which will lead to higher level of stakeholders' satisfaction.

Recommendations

Based on the above conclusions, suggestions and recommendations are listed below:

1. To maintain high-quality service, City School Division of Cabuyao may provide or conduct a series of programs for all personnel in the service at least twice a year. These initiatives are intended to improve service delivery methods, enhance customer expectations, and expedite response and resolve customer issues. Everyone in the

service may have an equal opportunity to gain knowledge and understand the importance of the training especially when it comes to dealing with internal and external stakeholders.

2. City Schools Division of Cabuyao top management may include reinforcement motivation for employees to be more engaged and increase desires and passion toward their job. A motivating stimulus, such as incentives or praise, is presented to reinforce desired behaviors. This increases the likelihood that the personnel will act in this way going forward. Employee motivation increases the likelihood that they will perform well overall, which boosts output and enhances customer satisfaction.

3. The Top Management, together with the Monitoring and Evaluation Section (M&E), may focus more on providing immediate solutions and effective intervention when there is undesirable feedback coming from internal and external stakeholders to show empathy towards the clients. The City Schools Division of Cabuyao may offer helpdesk support once a week at the very least to address and discuss stakeholder concerns that could aid in an urgent resolution.

4. To keep high performance and satisfaction, the need to deliver standard and necessary information to each employee in different departments through meetings monthly is thought to be essential to their ability to understand the processes of each department to avoid confusion on the part of the clients when there is a transaction. Thus, SDO personnel will be capable of keeping informed and spreading awareness on the processes and regulations among different units so that become a reliable source at the same time. Conducting meetings will also be very beneficial in disseminating information about the services being offered.

5. City Schools Division of Cabuyao may utilize Project CARE to enhance and further develop the satisfaction of its internal and external stakeholders, as this is the most important and reflection of service quality, which has a big impact on the divisions' image and reputation.

6. Although, there are lots of literature on the subject, more research on service quality, as well as how to maintain client satisfaction, may be conducted. To gain a deeper understanding of the client's experience of the service, it is also advised that future research use a qualitative strategy rather than a quantitative approach. As a result of this initiative, the City Schools Division of Cabuyao will have a great chance to perform all necessary analysis regarding the quality of its services.

Compliance with Ethical Standards

Ethical consideration is one of the most important aspects of the research. This research had the respondents' informed consent before the trial. The research survey respondents' dignity was not violated in any way and was given top attention. Finally,

during the process, consideration was given to maintaining the privacy and security of the information obtained.

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STREAMLINING ACADEMIC RESEARCH OPERATIONS: A BUSINESS PROCESS REENGINEERING CASE STUDY OF HOLY CROSS COLLEGE, STA. ROSA, N.E., INC.

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ABSTRACT

This study evaluates and reengineers the undergraduate research process at Holy Cross College, Sta. Rosa, N.E., aiming to bridge the gap between ideal and current states. Using a mixed-method approach, it assesses student perceptions across multiple research stages and identifies challenges such as time constraints, collaboration dynamics, and resource limitations. Findings highlight strong institutional support in stages like Research Final Defense but reveal opportunities for improvement in communication channels, preparation time, and publication support. Recommendations focus on enhancing these areas to optimize the research process for undergraduate researchers. Future studies could explore longitudinal impacts and technological solutions to further enhance research environments.

Keywords: *Undergraduate research, academic management, process reengineering, institutional support, student perceptions*

INTRODUCTION

In the rapidly evolving landscape of higher education, the optimization of academic research operations has become a critical priority for institutions striving to maintain academic excellence and enhance the research experience for their students (Wang, 2021). Efficient research operations directly impact the quality of research output and

the academic development of students (Rhaiem, 2017). Not only do streamlined processes save time and resources, but they also enhance the overall research experience, leading to higher satisfaction among researchers and better (Szromek & Wolniak, 2020). Thus, optimizing these processes is essential for academic institutions aiming to foster a robust research culture and maintain competitive standards.

However, research operations in academic settings often face numerous challenges. Bureaucratic delays, with multiple layers of approval and review, significantly slow down the research process (Thompson & France, 2010). Redundant processes, characterized by overlapping responsibilities and unnecessary steps, create inefficiencies that further complicate the workflow (Miranda & Lerner, 2018). Additionally, poor communication and coordination among faculty, researchers, and administrative staff can lead to misunderstandings and errors, exacerbating delays (Albalawi & Nadeem, 2020). Many institutions also rely on paper-based systems or outdated digital tools, which hampers efficiency and productivity (Santos & Jocson, 2021).

Business Process Reengineering (BPR) offers a strategic approach to addressing these challenges by fundamentally rethinking and redesigning processes to achieve significant performance improvements (Zaini & Saad, 2019). BPR focuses on streamlining operations, eliminating redundancies, and leveraging technology to enhance efficiency and effectiveness.

Numerous case studies highlight the successful application of BPR in academic settings. For example, Hasouneh et al. (2024) reported on the reengineering of administrative processes in universities, resulting in faster processing times and improved service quality. Similarly, Mostafa et al. (2022) discussed the transformation of academic advising and registration processes through BPR, leading to enhanced student satisfaction and reduced administrative workload. In the context of research operations, BPR can streamline approval processes by reducing the number of approval stages and introducing parallel processing, thereby shortening timelines (Popoola et al., 2024). Improved coordination and communication can be achieved by implementing collaborative tools and platforms that enhance communication among researchers, faculty, and administrative staff. Additionally, adopting digital tools for document management, data collection, and analysis can increase efficiency and accuracy.

Roberts (1994) as cited in Bhaskar (2018) introduces a structured BPR framework that commences with a gap analysis and culminates in a pathway towards continuous improvement (see Figure 4). his framework starts by identifying three critical questions: (1) defining how processes ideally should function, (2) assessing their current state, and (3) determining strategies to bridge the gap between these two states. By undertaking a comprehensive reassessment of workflows and integrating innovative solutions, institutions can streamline approval processes, introduce parallel processing to expedite timelines and enhance coordination through collaborative digital platforms.

Holy Cross College, Sta. Rosa, N.E., recognizes the importance of streamlining its research processes to foster an environment that supports efficient and effective

scholarly activities. The research process is structured into several key stages, as outlined in the College's research manual. These stages include the preparation and submission of research preliminaries, the development and defense of a research proposal, the ethical review, the completion of a full research paper, the final defense, and ultimately, the publication and presentation of the research output. Each of these stages involves specific procedures and requirements, designed to guide undergraduate researchers through a systematic and rigorous research journey.

Despite the well-defined framework, there may be gaps that can serve as opportunities to improve the efficiency and effectiveness of the research process. To address these gaps, this study adopts the Business Process Reengineering (BPR) framework with a gap analysis. This structured approach begins with defining the ideal state of research processes, which aligns with the detailed procedures outlined in Holy Cross College's research manual. The study then evaluates the current status of these processes through a thorough assessment of existing operations across various research stages.

The core objective of this study is to evaluate the overall research process and identify the challenges and potential improvements that arise from the gap between the ideal and current states of research operations at Holy Cross College. This will be achieved by formulating strategic recommendations for reengineering the current process based on the findings and insights derived from the assessment. These recommendations will focus on streamlining workflows, reducing bureaucratic hurdles, enhancing communication channels, and leveraging technological advancements to optimize the research process for undergraduate researchers.

By applying the BPR framework with gap analysis, Holy Cross College aims to set a precedent for other academic institutions seeking to optimize their research operations. The findings and recommendations presented in this paper will not only contribute to the enhancement of the College's research processes but also provide valuable insights for the broader academic community on the application of Business Process Reengineering in higher education research administration.

Research Questions

This study aims to bridge the gap between the ideal and current states of the undergraduate research process at Holy Cross College and seeks to answer the following research problems:

1. How may the evaluation of the undergraduate research process be described?
2. What are the primary challenges encountered by respondents in the undergraduate research process?
3. What suggestions for improvement were provided by respondents regarding the undergraduate research process?
4. What reengineered processes should be integrated with the current process based on the identified challenges and suggestions for improvement?

METHODOLOGY

This study employed a mixed-method approach to thoroughly investigate and reengineer the academic research operations at Holy Cross College, Sta. Rosa, N.E. The research design was descriptive, integrating quantitative and qualitative methodologies to comprehensively understand the current research processes and identify areas for enhancement (Matović & Ovesni, 2023).

The sample for this study was selected using purposive sampling, targeting 50 undergraduate researchers who were engaged in the current research process at Holy Cross College, Sta. Rosa, N.E., Inc. This sampling method ensured that participants possessed direct experience and insights relevant to the research objectives, spanning stages from research preliminaries to final defense and publication (Pacho, 2015).

Data collection utilized two main approaches: a structured survey employing a Likert scale to assess participants' perceptions of various research stages, focusing on aspects such as clarity of guidelines, adequacy of support mechanisms, and overall satisfaction. Additionally, open-ended questions were employed to solicit qualitative feedback on challenges encountered by researchers and opportunities for process improvement.

Quantitative data were analyzed using descriptive statistics—including means—to provide a quantitative overview of participant perceptions. Qualitative data underwent thematic analysis to uncover underlying patterns and themes within participants' narratives on the challenges encountered and their suggestions for improvement in the overall process, offering deeper insights into the dynamics of the research process.

RESULTS AND DISCUSSION

The objective of this study was to bridge the gap between the ideal and current states of research operations at Holy Cross College. By assessing the current processes and identifying key areas for improvement, the study aimed to formulate strategic recommendations for streamlining workflows, reducing bureaucratic hurdles, enhancing communication channels, and leveraging technological advancements to optimize the research journey for undergraduate researchers.

Evaluation of the Undergraduate Research Process

Table 1. Evaluation of the Undergraduate Research Process

	Stage	Weighted Mean	Verbal Description
1.	Research Preliminaries	3.65	SA
2.	Research Proposal	3.66	SA
3.	Research Proposal Defense	3.69	SA

4.	Approval of Request Letters	3.53	SA
5.	Full Research Paper	3.67	SA
6.	Research Final Defense	3.80	SA
7.	Research Output	3.76	SA
8.	Research Publication and Presentation	3.48	SA
	Overall	**3.65**	**SA**

The evaluation of the undergraduate research process at Holy Cross College, as summarized in Table 1, reveals generally positive perceptions across various stages, reflecting strong agreement (SA) with the effectiveness of support and processes. Key preparation stages such as Research Preliminaries (3.65), Research Proposal (3.66), and Full Research Paper (3.67) received high ratings, indicating satisfaction with the clarity of instructions, adequacy of support from advisory panels, and the constructive nature of feedback received.

Notably, the Research Final Defense stage garnered the highest overall rating of 3.80, emphasizing the structured and beneficial nature of this critical phase in validating research efforts. This high rating suggests that students felt well-prepared and supported during this crucial stage, which is pivotal in the academic validation of their research work. The Research Output stage also received a commendable rating of 3.76, indicating that the end products of the research process were perceived positively by the participants.

However, the Research Publication and Presentation stage received the lowest mean score of 3.48, implying the presence of challenges in the publication and presentation of the completed research output. This lower rating suggests that while students felt confident in their research process and final defense, they encountered difficulties in the final stages of disseminating their research findings. These challenges could stem from a lack of sufficient guidance or support in navigating the publication process, unfamiliarity with presentation formats, or difficulties in accessing appropriate platforms for dissemination.

Despite these challenges, the overall rating of 3.65 indicates a generally satisfactory experience for the undergraduate researchers. The positive feedback on most stages of the research process underscores the strengths of the current system, particularly in its early and middle stages, where clear guidelines and supportive advisory mechanisms seem to be effectively in place.

Overall, while Holy Cross College excels in many aspects of its undergraduate research process, there remains room for improvement. The challenges and suggestions for improvement based on the respondents' feedback were identified.

Challenges in the Undergraduate Research Process

Following the evaluation of the undergraduate research process, respondents identified significant challenges encountered across various stages. These challenges were consolidated into emerging themes, as shown in Table 2, reflecting common issues identified in prior research on academic research processes.

Table 2. *Identified Challenges in the Undergraduate Research Process*

	Stage	Identified Challenges
1.	Research Preliminaries	Clarity and Understanding of Procedures; Title and Topic Selection; Group Dynamics and Collaboration; Research Framework and Literature Review; Resource Constraints
2.	Research Proposal	Clarity and Structure of Research Proposal; Multiple Perspectives and Critiques; Time Management and Pressure; Revision and Framework Adjustments; Literature Review Challenges; Group Dynamics and Collaboration; Disagreement on Research Format; Topic Selection; Outdated Templates
3.	Research Proposal Defense	Language and Communication Proficiency; Constraints in Time and Resources; Group Dynamics and Dependency; Nervousness and Performance Anxiety
4.	Approval of Request Letters	Time Constraints; Grammar and Language Proficiency Challenges; Revision and Follow-up Requirements; Format and Template Errors; Revision Fatigue from Multiple Edits
5.	Full Research Paper	Repeated Revisions and Editing Burden; Grammatical Errors and Inconsistencies; Long Critique Times from English Critics
6.	Research Final Defense	Time Constraints and Preparation Burden; Revision and Alignment Issues; Nervousness and Overthinking; Technical Errors in Presentation; Multiple Recommendations and Re-Defenses
7.	Research Output	Revising and Incorporating Feedback; Financial Constraints
8.	Research Publication and Presentation	Financial Constraints; Time Management; Addressing Reviewer Comments; Transportation Issues

In the Research Preliminaries stage, students reported difficulties with clarity and understanding of procedures, title and topic selection, group dynamics, and resource constraints. These findings align with previous studies emphasizing the need for clear

guidelines and effective mentorship in the initial stages of research to prevent confusion and inefficiency (Gruber et al., 2020). Resource constraints further exacerbate these issues, as noted by Çamalan (2023), highlighting the importance of adequate resources for successful research outcomes.

During the Research Proposal phase, challenges such as clarity and structure of proposals, time management, and multiple perspectives emerged prominently. This is consistent with earlier research by Rastri et al. (2023), which found that the complexity of proposal development often leads to stress and confusion among students. Additionally, issues with outdated templates and disagreement on research formats underscore the need for updated, standardized materials, echoing recommendations from previous literature (Rosa, 2023).

The Research Proposal Defense stage was marked by language proficiency issues, time and resource constraints, and performance anxiety. These findings support earlier research by Anuyahong (2018), who reported that communication skills and anxiety are critical factors affecting students' performance during defenses. The dependence on group dynamics also highlights the importance of teamwork and collaborative skills (Santos, 2021).

For the Approval of Request Letters, students faced challenges with time constraints, grammar, and language proficiency, and revision fatigue. Similar issues were reported by Davis et al. (2022), who emphasized the need for streamlined administrative processes and better language support services to alleviate these burdens.

In completing the Full Research Paper, the burden of repeated revisions, grammatical errors, and lengthy critique times from English critics were major concerns. These challenges are consistent with findings by McKinley & Rose (2018), who pointed out that extensive revisions and language barriers often impede the timely completion of research papers.

The Research Final Defense stage presented issues with time constraints, revision alignment, and technical errors, alongside nervousness and overthinking. These challenges mirror those identified by Seals (2022), who stressed the need for comprehensive preparation and technical support to enhance students' confidence and presentation quality.

For the Research Output, revising and incorporating feedback, along with financial constraints, were significant hurdles. Previous studies, such as those by Cele et al. (2014), have also highlighted the financial challenges faced by students in producing final research outputs, underscoring the need for institutional support.

Finally, in the Research Publication and Presentation phase, financial constraints, time management, and transportation issues were prevalent. These issues align with earlier research by Garwe (2015), who noted that logistical and financial barriers often hinder students' ability to disseminate their research effectively.

Overall, the challenges identified in this study corroborate existing literature on the difficulties faced by undergraduate researchers. Addressing these challenges through targeted interventions and support mechanisms, as suggested by the respondents, can significantly enhance the research process and outcomes for students at Holy Cross College and similar institutions.

Suggestions for Improving the Undergraduate Research Process

To address the challenges encountered, respondents provided several suggestions for improving the undergraduate research process. These suggestions, consolidated into emerging themes as shown in Table 3, resonate with findings from previous research, highlighting their relevance and potential effectiveness.

Table 3. Identified Suggestions for Improvement in the Undergraduate Research Process

	Stage	Identified Suggestions for Improvement
1.	Research Preliminaries	Discussion of the Research Process; Sufficient Preparation Time; Literature Review and Resource Exploration; Clarity in Title Selection; Adviser Support
2.	Research Proposal	Timely Feedback; Template Accuracy; Sufficient Preparation Time; Literature Review and Resource Exploration
3.	Research Proposal Defense	Sufficient Preparation Time; Group Dynamics; Timely feedback; Communication of Defense Mechanics
4.	Approval of Request Letters	Letter Template Accuracy; Sufficient Preparation Time
5.	Full Research Paper	Sufficient Preparation Time; Develop Writing Process Outline
6.	Research Final Defense	Limit Presentation Time
7.	Research Output	Improved Communication Channels
8.	Research Publication and Presentation	Financial Support; Tools and Strategies for Managing Research Presentation

In the Research Preliminaries stage, recommendations such as discussing the research process, providing sufficient preparation time, facilitating literature review and resource exploration, ensuring clarity in title selection, and offering adviser support align with prior studies. Jeyaraj (2018) emphasized the importance of clear guidance and adequate preparation time in enhancing students' understanding and confidence during the initial stages of research. Additionally, the need for adviser support echoes the findings of Li (2019), who identified mentorship as a critical factor in navigating

early research challenges.

For the Research Proposal phase, suggestions for timely feedback, template accuracy, sufficient preparation time, and enhanced literature review and resource exploration are well-supported by existing literature. Mattson (2017) stressed that timely and structured feedback is crucial in helping students develop well-structured proposals. The emphasis on template accuracy addresses the issue of outdated and inconsistent formats, a problem highlighted by Rosa (2023).

The Research Proposal Defense stage recommendations—sufficient preparation time, group dynamics improvement, timely feedback, and clear communication of defense mechanics—reflect common themes in academic research. Lajom et al. (2023) noted that preparation time and clear communication significantly reduce performance anxiety and improve defense outcomes. Akindele (2012) also underscored the importance of effective group dynamics in collaborative research efforts.

For the Approval of Request Letters stage, focusing on letter template accuracy and sufficient preparation time addresses administrative challenges. Streamlining administrative processes and providing clear templates can reduce the time and effort required for approvals, improving overall efficiency (Tantua, 2022).

In the Full Research Paper stage, the recommendation for sufficient preparation time and developing a writing process outline aligns with Gopee and Deane (2013), who emphasized structured writing support to help students manage the demands of academic writing. Providing a clear outline and timeline for the writing process can reduce the burden of revisions and improve the quality of the final paper.

For the Research Final Defense, limiting presentation time addresses the issue of time constraints and preparation burdens. Krysik (2018) highlighted that concise and focused presentations are more effective and less stressful for students, improving their performance during defenses.

The suggestion for improved communication channels in the Research Output stage aims to facilitate the incorporation of feedback, a critical step identified by Armengol-Asparó et al. (2022). Efficient communication between students, advisers, and evaluators can streamline the revision process and ensure the timely completion of research outputs.

Finally, in the Research Publication and Presentation phase, the need for financial support and tools for managing research presentations is well-documented. Garwe (2015) found that financial constraints often limit students' ability to publish and present their work. Providing financial support and practical tools can significantly enhance students' opportunities for disseminating their research.

Overall, the suggestions for improvement are well-founded in previous research and offer a practical roadmap for enhancing the undergraduate research process at Holy

Cross College. By addressing identified challenges with targeted interventions, these recommendations have the potential to improve the quality and efficiency of student research through business process reengineering, ultimately leading to better academic outcomes.

Reengineering the Undergraduate Research Process

The findings from the identified challenges and suggestions for improvement served as a basis for the BPR approach to be applied in the undergraduate research process. Reengineering each stage of the undergraduate research process focused on improving efficiency, effectiveness, and student satisfaction.

Table 4. BPR Approach for Improving the Undergraduate Research Process

	Stage	Current Process	Reengineered Process
1.	Research Preliminaries	Students prepare and submit preliminary research to faculty for approval.	**Clarity and Training:** Implement workshops and orientation sessions at the beginning of the research preliminaries stage to discuss the entire research process, clarify procedures, and provide guidance on title and topic selection. **Resource Accessibility:** Develop an online repository with literature resources and a clear research framework template accessible to all students. **Adviser Allocation:** Assign dedicated research advisers early in the process to provide consistent support and address group dynamics and collaboration challenges.
2.	Research Proposal	Approved preliminaries lead to the preparation of a formal proposal with the help of the advisory panel.	**Feedback Mechanism:** Establish a structured timeline for timely feedback from advisers and peers to ensure continuous improvement and timely adjustments. **Template Standardization:** Update and standardize research proposal templates to avoid outdated formats and discrepancies. **Preparation Time:** Allocate sufficient preparation time and schedule regular check-ins to monitor progress and address time management issues. **Resource Support:** Enhance access to literature review resources and provide workshops on effective literature exploration techniques.

3.	Research Proposal Defense	Complete proposals are recommended for defense and presented before the defense panel.	**Preparation and Training:** Offer mock defense sessions and communication skills workshops to reduce nervousness and improve language proficiency. **Clear Defense Guidelines:** Develop and communicate detailed guidelines and mechanics for the defense process, ensuring students understand expectations.
4.	Approval of Request Letters	Letters are submitted for approval, with multiple revisions often required.	**Template Accuracy:** Create accurate, pre-approved letter templates to reduce errors and revision fatigue. **Streamlined Approval Process:** Implement an online submission and tracking system to streamline the approval process, allowing for easier follow-ups and status checks.
5.	Full Research Paper	Completion of research paper after obtaining ethics approval.	**Writing Support:** Develop a comprehensive writing process outline and provide ongoing writing workshops and one-on-one support sessions. **Revision Management:** Use collaborative tools for tracking revisions and feedback to minimize the burden of repeated editing. **Grammar Assistance:** Provide access to language and grammar support services to reduce inconsistencies and errors.
6.	Research Final Defense	Complete research papers are recommended for final defense and submitted to panelists.	**Presentation Training:** Conduct presentation skills workshops and offer tools to help students prepare concise and effective presentations. **Time Management:** Limit presentation time to ensure clarity and reduce preparation burden. **Technical Support:** Provide technical assistance and resources to avoid errors during presentations.
7.	Research Output	The final research output is checked, approved, and reproduced.	**Communication Channels:** Establish efficient communication channels between students, advisers, and faculty to ensure timely feedback and approvals.

8.	Research Publication and Presentation	Best papers are selected for publication and presentation.	**Financial Support:** Allocate funds and resources to support students in publishing and presenting their research. **Publication Assistance:** Assist students in navigating the publication process, including formatting and submission to relevant journals.

Conclusions and Recommendations

The evaluation of the undergraduate research process at Holy Cross College provides valuable insights into advancing the field of undergraduate research management and support. This study contributes to the field by systematically assessing student perceptions across multiple stages of the research process, from preliminaries to publication and presentation. The high ratings, particularly in stages like Research Final Defense, underscore effective institutional support and structured processes that validate student research efforts, thus reinforcing existing best practices in undergraduate research pedagogy.

By identifying persistent challenges such as time constraints, collaboration dynamics, and resource limitations, the findings substantiate the need for targeted interventions to enhance the undergraduate research experience. The recommendations for improvement, including better preparation time, clearer communication channels, and institutional support for publication, offer actionable strategies to mitigate these challenges. Implementing these suggestions not only addresses immediate undergraduate researcher needs but also contributes to the ongoing discourse on optimizing research environments and outcomes in the higher education sector.

Looking forward, future studies could explore the longitudinal impact of implemented improvements on student research outcomes and institutional research culture. Further investigation into the effectiveness of digital tools and technological solutions in streamlining research processes could also yield innovative approaches to enhance student engagement and scholarly productivity. Additionally, comparative studies across diverse institutional contexts and disciplines would provide insights into the generalizability of findings and the adaptation of best practices to different educational settings.

In conclusion, this study at Holy Cross College advances the field by offering empirical evidence and practical recommendations to enhance undergraduate research management. By addressing identified challenges and proposing systematic improvements, it contributes to the present state of knowledge in undergraduate research pedagogy and sets a foundation for future studies to build upon, thereby fostering continuous improvement in research education and student success.

Compliance with Ethical Standards

Ethical considerations were integral to the research design and implementation. Participants were provided with informed consent detailing the purpose, procedures, and voluntary nature of their participation. Confidentiality measures were strictly observed to protect participants' identities and ensure the anonymity of their responses. By adhering to these guidelines, the study aimed to respect the rights and well-being of participants while gathering valuable data to improve the undergraduate research process at Holy Cross College, Sta. Rosa, N.E.

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SUSTAINABLE STRATEGIES IN ONLINE FOOD DELIVERY BY FOOD ESTABLISHMENTS IN DUMAGUETE CITY

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ABSTRACT

Online food delivery is when you order food from a restaurant through the internet or a mobile app, and the restaurant delivers it to your doorstep. This study measures the sustainable strategies of food establishments utilizing online food deliveries in Dumaguete City using a descriptive-correlational design. Thirty food establishments in Dumaguete City served as the respondents of this research. The study examines sustainable strategies in Dumaguete City's food establishments, finding consensus among respondents on employment, safety, service accessibility, responsiveness, and environmental aspects. Challenges in food delivery services were acknowledged, prompting a need for sustainable strategies to guide managerial decisions. Significant correlations emerged between demographic profiles and sustainable practices, notably, operational tenure impacting employment dynamics, and gender/education influencing customer relations. Technology facilitated efficient order processing, particularly evident in establishments with well-educated owners. Interestingly, respondents' profiles did not affect pandemic-related challenges, highlighting the universality of sustainable strategies' importance. The study concludes a significant relationship between challenges and sustainable practices, emphasizing the role of a conducive work environment in mitigating hurdles. Advanced technology, notably online food delivery services, fosters innovation, and operational efficiency, underscoring its significance in enhancing food service establishments' performance.

Keywords: *Online Food Delivery, Sustainable Strategies, Restaurants, Correlational Research, Dumaguete City*

INTRODUCTION

The Online Food Delivery (OFD) service industry has emerged as a new wave in the food and beverage industry. The rise of the OFD industry has provided job opportunities for many people across a range of types of employment including chefs and administrative staff in restaurants, delivery people, or programmers behind the application/online platforms (Li, Mirosa, & Bremer, 2020). Owners and managers of the food service industry are continuously engaged in the use of OFD to minimize costs and increase profit (Kapoor & Vij, 2018). Customers no longer have to repeat delivery address, food order, fees, etc. to the phone operator after ordering via text message or e-mail. Eventually, the food delivery system transitioned to a mobile platform thereby providing patrons with an additional level of convenience. OFD strategically upgraded the apps making them more user-friendly and interactive. Because of numerous technological breakthroughs and globalization, e-commerce is geared towards virtual diversion. OFD's apps cater to almost all the demands of the market segmentation to achieve an enormous return on investment.

The Philippines is one of the countries that heavily utilize OFD services. OFD service apps provide almost everything that customer's need in regard to buying food and beverages. Utilizing these apps, customers can look up all nearby restaurants, see the menu options, and select the food or beverages of choice (Kapoor & Vij, 2018). Furthermore, food service industry enrolled in OFDS apps because it is equipped with digital payment instruments that are more convenient, and attractive at the same time increase brand awareness (Chai, &Yat, 2019). Other factors, including ease of use, navigational design, and performance expectancy, influence customer satisfaction (Prasetyo et. al, 2021, Chai &Yat, 2019, Yeo, Goh & Rezaei, 2017). In this new set-up many are still in the process of adjustment, soon enough customers will become accustomed to these new apps, and they can eliminate technical issues and difficulties due to familiarity. This is a gap that can be considered in the study. Even though technical issues are decreasing, it is not sufficient enough to solely observe technology acceptance factors. According to Statista (2018), our country's online food delivery market is worth around P11 billion, with nearly eight million Filipinos using the service at least once. With such a large number of customers, many people are enticed to open online food stores from the convenience of their own homes. Owing to high demand and customers' preference to eat meals off-premise, complexities of food production and delivery logistics become apparent.

The COVID-19 pandemic greatly influenced the increased demand for online food delivery of restaurants in Dumaguete enrolled in OFD Service Apps**.** The convenience and time-saving factors are key elements of these developments (*interbrandspackaging.com*). Food delivery services in Dumaguete have drastically changed, consumers order food online rather than going to a restaurant. The observable gap that the researchers will address is how OFDS be able to have sustainable strategies. This study aims to determine the sustainable strategies in online food delivery by food establishments in Dumaguete City.

Research Questions

This research intends to determine the sustainable strategies in online food delivery by food establishments in Dumaguete City. Furthermore, it seeks to answer the following questions:

1. What is the socio-demographic profile of the respondents and organizational profile of the food establishments?
2. What are the sustainable strategies of the food establishments in utilizing food delivery services in Dumaguete City?
3. What are the common challenges encountered by food establishments in utilizing food delivery services?
4. Is the socio-demographic and organizational profile of the respondents relevant to the sustainable strategies and challenges encountered by the food establishments using food delivery services?
5. Are the sustainable strategies of the food establishments using food delivery services in Dumaguete City relevant to the challenges they encounter?

METHODOLOGY

This research used a correlational design. As described, correlational research is used to determine prevalence and relationships among variables and to forecast events from current data and knowledge. The use of this design for the study is justified by the research's aim which was to determine the degree of relationships between the socio-demographic and organizational profile of the respondents to the sustainable strategies and challenges encountered by the food establishments using food delivery services, and the relationship between the sustainable strategies of the food establishments using food delivery services and challenges they encountered. The whole purpose of using the correlational method was to figure out which variables were related and to develop prediction models for the value of a variable. Correlational studies are carried out either to help explain important human behaviors or to predict likely outcomes. If a relationship of sufficient magnitude exists between two variables, it becomes possible to predict a score on one variable if a score on the other variable is known.

The respondents of the study are the owners and/or managers of food establishments utilizing FoodPanda and GrabFood food delivery services. The research was focused on identifying opportunities and challenges in the food delivery industry. The study also looks at the demographic composition of the industry. The survey only includes food business owners/managers utilizing food delivery services. Purposive sampling was used in the study to select who among the individuals of the population fit all the criteria and could participate in the study to reach the number of respondents needed to participate in the study. Purposive sampling is a sampling approach in which the researcher chooses members of the population to participate in the study based on the researchers' judgment or criteria. A total of Thirty (30) food establishments that are utilizing the FoodPanda and GrabFood delivery services were selected purposively and

the one to answer the survey questionnaire can either be the owner or the manager of the above-mentioned establishment.

The main instrument for the data gathering was a survey questionnaire divided into three parts. Part I focuses on the personal and institutional profiles. Part II focuses on the sustainable strategies of the restaurants in terms of employment, safety, accessibility of the service, responsiveness, and environment. Part III shows the challenges encountered by the food establishments using delivery services. In line with the aim of the study to determine sustainable strategies for restaurants amidst the pandemic through food delivery in Dumaguete City, the study correlate between the socio-demographic profile of the respondents to the sustainable strategies and challenges encountered by the restaurants using food delivery services, and the relationship between the sustainable strategies of the food establishments using food delivery services and challenges they encountered.

RESULTS

Respondents' Personal Profile and Institutional Profile

Table 1 shows the socio-demographic profile of the respondents and the institutional profile of the food establishments in Dumaguete City.

Table 1. Socio-demographic and organizational profile.

Variables	*f*	%
Age Bracket		
51- 70	2	6.67
41- 50	2	6.67
31- 40	13	43.33
26- 30	10	33.33
20- 25	3	10.00
Sex		
Male	13	43.33
Female	17	56.66
Marital Status		
Married	7	23.33
Single	23	76.67
Educational Attainment		
College Graduate	24	80.00
College Undergraduate	6	20.00
Type of Food Establishment		
Bistro	9	30.00
Restaurant	17	56.67

Fast Food	2	6.67
Cake House	2	6.67
Type of Ownership		
Sole Proprietorship	12	40.00
Corporation	11	36.67
Partnership	7	23.33
Number of Employees		
17 - 20 regulars	3	10
13 - 16 regulars	4	13.34
9 - 12 regulars	10	33.33
5 - 8regulars	7	23.33
1– 4 regulars	6	20
Number of Years in Business Operation		
30.01 years – 40 years and above	3	10.00
20.01 years – 30 years	2	6.67
10.01 years- 20 years	3	10.00
5.01 years – 10 years	6	20.00
3.01 years – 5 years	3	10.00
1.01 years- 3 years	6	20.00
1 month – 1 year	7	23.33

N=30

Sustainable Strategies of Food Delivery Services

The sustainable strategies of food delivery services of the food establishments in Dumaguete City can help assess the current situation to proactively address the issues and discover opportunities for improvements.

Table 2 shows the extent of the sustainable strategies of food delivery services of the food establishments in Dumaguete City.

Table 2. Sustainable strategies of food delivery services

Variables	**WX**	**Verbal Description**
Employment	**3.68**	**Strongly Agree**
1. Additional employment in the city	3.73	Strongly Agree
2. Increase job opportunities/ help create more jobs	3.73	Strongly Agree
3. More business opportunities	3.60	Strongly Agree
4. Gives better pay to the delivery driver	3.67	Strongly Agree
Safety	**3.51**	**Strongly Agree**

1. No misunderstandings and no frustrations	3.23	Agree
2. Safer and healthier for customers and businesses	3.67	Strongly Agree
3. Less risk/exposure to get infected of any disease	3.53	Strongly Agree
4. Minimal contact between servers and customers	3.60	Strongly Agree
Accessibility of the Service	**3.61**	**Strongly Agree**
1. An improved customer experience	3.67	Strongly Agree
2. Easy to access and cost efficiency	3.53	Strongly Agree
3. Less hassle for the customers	3.77	Strongly Agree
4. Customers have better choices	3.47	Strongly Agree
Responsiveness	**3.56**	**Strongly Agree**
1. Quick and convenient delivery	3.57	Strongly Agree
2. A seamless process and less room for error	3.33	Strongly Agree
3. It's just one click away using a mobile device / You can receive an order for a takeaway by phone	3.70	Strongly Agree
4. It's fast, easy, and comfortable	3.63	Strongly Agree
Work Environment	**3.72**	**Strongly Agree**
1. Increases the number of customers you can service	3.73	Strongly Agree
2. Make up for reduced foot traffic	3.73	Strongly Agree
3. Increase your visibility and reach in your area and add an extra stream of income	3.77	Strongly Agree
4. Streamlined restaurant operations	3.63	Strongly Agree

Legend: Range of Values Verbal Description
3.25- 4.00 Strongly Agree (SA)
2.50- 3.24 Agree (A)
1.75- 2.49 Disagree (D)
1.00- 1.74 Strongly Disagree (SD)

Challenges in The Food Delivery Services

The challenges in the food delivery services of the food establishments in Dumaguete City aid in gaining a better understanding of the issues faced by food establishments while using food delivery services.

Table 3. Challenges in the Food Delivery Services

Indicators	WX	Verbal Description
1. Shifting Customer preferences	3.23	Agree
2. Unstable Market Prices	3.17	Agree
3. Adhering to the Food Quality Standards	3.43	Strongly Agree
4. Managing Customer Expectations	3.43	Strongly Agree
5. Improper Food Handling	2.43	Disagree

6. Threat of Bigger Players	3.00	Agree
7. The Logistics Dilemma	2.47	Disagree
8. Traffic Situation	3.10	Agree
10. Fake Booking	2.33	Disagree
11. Weather Condition	3.20	Agree
Composite Mean	**2.71**	**Agree**

Legend: *Range of Values* *Verbal Description*

3.25- 4.00 *Strongly Agree (SA)*
2.50- 3.24 *Agree (A)*
1.75- 2.49 *Disagree (D)*
1.00- 1.74 *Strongly Disagree (SD)*

Test of Significant Relationship

Significant Relationship between the profile and the sustainable strategies of food delivery services. This data is significant in understanding how the profile of the respondents corresponds to their perception of the sustainable strategies on the food delivery strategies.

Table 4. Test of Significant Relationship Between the Profile and the Sustainable Strategies of Food Delivery Services

Variables		**Age**	**Sex**	**Civil Status**	**Highest Educ. Attainment**	**Type of Food Establishment**	**Type Ownership**	**Size of Org.**	**Years Operation**
Employment	Correlation	-.043	.251	.198	.077	.200	.037	-.236	**-.356***
	Sig. (2-tailed)	.822	.180	.293	.687	.289	.847	.208	.050
	Remarks	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Significant
Safety	Correlation	-.022	**.366***	.167	**.358***	-.011	-.182	-.298	.059
	Sig. (2-tailed)	.907	.047	.378	.050	.955	.337	.110	.758
	Remarks	Not Sig.	Significant	Not Sig.	Significant	Not Sig.	Not Sig.	Not Sig.	Not Sig.
Accessibility of the service	Correlation	-.030	.137	.010	.233	.157	-.135	-.141	-.104
	Sig. (2-tailed)	.875	.471	.959	.216	.406	.478	.458	.585
	Remarks	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Not Sig.	Not Sig.

Responsiveness	Correlation	.070	**.408***	.138	**.496****	.153	-.119	-.244	-.070
	Sig. (2-tailed)	.711	.025	.469	.005	.420	.531	.194	.714
	Remarks	Not Sig.	Significant	Not Sig.	Significant	Not Sig.	Not Sig.	Not Sig.	Not Sig.
Environment	Correlation	.164	.348	-.030	**.448***	**.362***	-.223	-.245	-.041
	Sig. (2-tailed)	.386	.060	.874	.013	.049	.237	.191	.829
	Remarks	Not Sig.	Not Sig.	Not Sig.	Significant	Significant	Not Sig.	Not Sig.	Not Sig.

**. Correlation is significant at the 0.05 level (2-tailed), $p \leq .05$*

Test of Significant Relationship Between the Profile and the Challenges

Table 5 presents the test of the significant relationship between the profile and the challenges. Data presented here will show the correlation of the respondent's profile to the challenges encountered with the food delivery services. This information will enable the researcher to verify whether the profile plays a significant role in identifying the challenges.

Table 5. Test of Significant Relationship between the Profile and the Challenges

Variables			Challenges
Spearman's rho	Age	Correlation Coefficient	.210
		Sig. (2-tailed)	.266
		Remarks	Not Significant
	Sex	Correlation Coefficient	.174
		Sig. (2-tailed)	.357
		Remarks	Not Significant
	Status	Correlation Coefficient	-.151
		Sig. (2-tailed)	.426
		Remarks	Not Significant
	Highest Educational Attainment	Correlation Coefficient	.131
		Sig. (2-tailed)	.492
		Remarks	Not Significant
	Type Food Establishment	Correlation Coefficient	-.011
		Sig. (2-tailed)	.952
		Remarks	Not Significant

Type Ownership	Correlation Coefficient	-.029
	Sig. (2-tailed)	.879
	Remarks	Not Significant
Size Organization	Correlation Coefficient	.166
	Sig. (2-tailed)	.381
	Remarks	Not Significant
Years Operation	Correlation Coefficient	.052
	Sig. (2-tailed)	.784
	Remarks	Not Significant

**. Correlation is significant at the 0.05 level (2-tailed), p ≤ .05*

Test of Significant Relationship between the Challenges and the Sustainable Strategies of Food Delivery Services

The test of the significant relationship between the challenges and the sustainable strategies of food delivery services will help the proponent determine how the identified challenges relate to the sustainable strategies that are currently implemented by the food delivery services.

Table 6 Test of Significant Relationship between the Challenges and the Sustainable Strategies of Food Delivery Services

Variables		**Challenges**
Employment	Pearson Correlation	.019
	Sig. (2-tailed)	.923
	Remarks	Not Significant
Safety	Pearson Correlation	-.204
	Sig. (2-tailed)	.279
	Remarks	Not Significant
Accessibility	Pearson Correlation	-.129
	Sig. (2-tailed)	.497
	Remarks	Not Significant
Responsiveness	Pearson Correlation	-.081
	Sig. (2-tailed)	.670
	Remarks	Not Significant
Environment	Pearson Correlation	**.352***
	Sig. (2-tailed)	.05
	Remarks	Significant

**. Correlation is significant at the 0.05 level (2-tailed), p ≤.05*

DISCUSSION

For the socio-demographic profile of the respondents, the results indicate that many of the respondents are between the ages of 31 and 40. It means that the respondents are capable of managing or owning a firm. According to the study of Azoulay et. al (2020) the average age for establishing a business is in the late 30s or early 40s. Age does predict success, and it predicts it dramatically, but not in the sense that many believe. It shows the same result as in this undertaking; most of the owner and/or managers of restaurants in Dumaguete City are between the ages of 30 to 40 years old.

In terms of sex, most of the respondents were female. Most of restaurant owners or managers were female,as they were often in charge of running establishments that were known for having great management in terms of cleanliness and housekeeping. Housekeeping, meal preparation, sanitation, and other household duties were examples. Females were thought to have a natural affinity for these items and were excellent at engaging customers. The presence of women in the industry is making the provision of services more complex because of their passive nature where they can address the caring needs of the customers (Asinas et. al, 2019).

It also reveals that the majority of the respondents were single. As revealed in on the sex of the respondents, many of them are females, this means that F&B establishments managed by single women can work effectively (Tayco et.al, 2023). According to the study of Uike & Gupta (2019), single persons had a better 'attitude toward behavior' and a better 'perceived behavioral control' than married people. In addition, married persons had a higher' subjective norm' than unmarried people, and were more focused on running their businesses.

For their educational attainment, the majority of the respondents were college graduates. According to Omri & Afi (2020) suggests that higher levels of education result in better performance in entrepreneurial activities. Individuals with a higher level of education may also have a higher probability of achieving success and achieving their personal goals. These respondents graduated in different courses yet they are in the food business which helps boost the hospitality industry in Dumaguete City.

As for the organizational profile, most of the food establishments were restaurants. Most of the food establishments were restaurants that were built or situated in the desired façade and interior design. A restaurant's physical atmosphere can make a strong first impression on entering customers. The physical and service surroundings had an impact on customer satisfaction during the eating experience. Additionally, every restaurant owner always wants to make his/her restaurant unique and appealing which depicts the owner's personality. According to the study of Ishak et. al (2020), the architectural design, interior design, and decorations that add to the attractiveness of the physical environment that draws the client in every way are referred to as facility aesthetics.

With regard to type of ownership, many of the food establishments were classified as sole proprietorship type of ownership. Sole proprietorships is one of the frequent types

of business ownership since they are straightforward to set up and operate. They are a good choice for someone who wants to try out a low-risk enterprise. According to Entrepreneur Asia Pacific, because of its simplicity, ease of setup, and low cost, the sole proprietorship was a popular business structure. One of the most appealing aspects of a sole proprietorship was its ease of formation. It is only necessary to buy and sell goods or services. To start a sole proprietorship, no formal filing or event is required; it is a status that evolves naturally through one's company activity.

Regarding the number of employees, many of the restaurants have 9-12 employees. The number of employees in an establishment depends on the size of the organization. The bigger the establishment, the more employees are needed or required. According to the study of Chaturvedi & Karri (2021), a firm's proportionate growth is independent of its absolute size. Several researchers, however, have contested this and have repeatedly asserted a contrary view, namely that the size and capacity of a firm have a significant impact on its performance.

Lastly, for the number of years in business operation, many of the food establishments operated for less than a year which means they are new in the business. New entries have even appeared in one category, "grab-and-go services," which includes food trucks and bakeries. These openings and reopenings have been sustained by focusing on health and safety, as well as new approaches to serve their customers, including moving their services and patrons outdoors (*qsrmagazine.com*).

For the sustainable strategies of food delivery services of the food establishments in Dumaguete City. The respondents agreed that the food establishments they are connected have sustainable strategies on employment, safety, accessibility of the service, responsiveness, and environment.

In terms of employment, respondents strongly agreed that food delivery services of the food establishments in Dumaguete City gives “additional employment in the city”, and “increase job opportunities/ help create more jobs”. This was true as the researcher can see that more food delivery drivers can be seen around the city after a few months when the pandemic started. According to Li, Mirosa, and Bremer, (2020), the rise of the OFD industry has provided job opportunities for many people across a range of types of employment, including chefs and administrative staff at restaurants, delivery people, and programmers behind the apps/online platforms. Furthermore, the large OFD platforms employ thousands of individuals as delivery persons. The study of Muangmee et. al (2021), explains that there is no doubt that the OFD industry has created many jobs, particularly in the delivery sector.

For safety, respondents agreed that their safety strategies were sustainable. They observed that their FD services were “safer and healthier for customers and businesses”, and there was “minimal contact between servers and customers”. According to the study by Somashekhar et. al (2020), most restaurants have strict health and safety rules in place to safeguard both their employees and their customers, encompassing everything from sourcing to preparation and service. Food service companies have responded by

offering contactless pick-up options, which eliminate the need for customers to interact with personnel.

As for accessibility of the service, the respondents agreed on the service specified on the items; “less hassle for the customers”, and “an improved customer experience”. In the study of Hong et. al (2021), the advent of integrated OFD platforms, such as Food Panda and Grab Food, aided the expansion of OFD services. Customers who use OFD services enjoy a variety of perks, including not having to wait in line, not having to travel for pick-up, and not having to deal with order misunderstandings, which occur regularly in restaurants or when ordering over the phone, and discounts from daily deals.

With regards to responsiveness, respondents agreed that they have excellent strategies, especially on items: “it’s just one click away using a mobile device / you can receive an order for a takeaway by phone”, and it’s fast, easy, and comfortable. The traditional model of delivery where the customer contacts the restaurant, orders food, and then waits for the restaurant to deliver the food, has been the most popular type of delivery. The study of Kapoor & Vij (2018), explains the market is being redefined as a result of the advent of digital technologies. Customers use mobile apps or websites to locate all nearby restaurants, browse the menu, choose the cuisine they want to eat, and order the food with a single click or tap of a finger. When it comes to online food ordering, consumers who are used to shopping through apps or websites with maximum convenience and transparency expect the same experience.

Lastly, for the work environment, the respondents agreed that they have effective strategies. According to them it “increases their visibility and reach in their area and adds an extra stream of income”, “increases the number of customers they can provide service”, and “make up for reduced foot traffic. Indeed, food delivery is an additional income to the business because most people would prefer not to go out. Owners and managers have stated that the ultimate purpose or goal is to deliver food to their customers' doorstep and to limit the movement of the people. They appreciated the food delivery apps that enable anyone to place an order and have it delivered promptly and securely. Food delivery services have aided restaurants in reaching out to those who are unaware of their existence and are interested in the cuisines they offer. Li, Mirosa, & Bremer (2020) study explained how the service works, once a purchase order is received, the platform sends a message to riders who match certain criteria, such as proximity to the platform and a favorable status. The service is assigned to the first person who responds. The meal is then picked up from the restaurant and delivered to the consumer within a certain amount of time (usually one hour). Naturally, the sooner the delivery is finished, the sooner the rider is free to accept new orders. While riders are compensated for each delivery, platforms charge a percentage of the meal order to the restaurant. The customer is additionally charged for delivery. Although the size, number of users, and geographic reach of these platforms are constantly growing, many questions remain.

For the challenges in the food delivery services, the respondents agreed on the challenges in food delivery services of the food establishments in Dumaguete City. Specifically, they agreed on items: “adhering to the food quality standards”, “managing

customer expectations", "shifting customer preferences", "unstable market prices", "traffic situation", "weather conditions", and "threat of bigger players". The business owners' top challenges were adhering to the food quality standards and managing customer expectations. Well, this was very important especially when the business was providing customer service, and this will also give a good review to the business which attracts more customers. Food businesses will react quickly enough to this change in customer demand to avoid a decline in profitability. The study of Zhao & Bacao (2020), explains that customer happiness was linked to food quality and service efficiency, which had a substantial impact on the use of online meal delivery services. Meanwhile, they discovered that order conformity, delivery quality, meal quality, and pricing were the most important factors influencing whether or not people use online food delivery services.

However, respondents disagree on items: "logistics dilemma", "improper food handling", and "fake booking". Since Dumaguete City is a developing city, challenges such as logistics and fake booking were not problems like what other big cities are experiencing. Improper food handling was also not a challenge for the business owner, because food establishment always gives their best services to have return customers. Dumaguete City is also known as the "City of Gentle People", and is also dubbed as "the Center of Learning in the South", providing the best services is already a priority for all businesses in the City. See-Kwong et al., (2017) explained that technology has played a significant role in transforming the food delivery service from phone-based to online ordering to meet customers' ever-changing demands and propel it to the top.

For the test of the significant relationship between the profile and the sustainable strategies of food delivery services. As shown in the table, employment is negatively correlated with years of operation with *r (30)-.36, p=.05* which means that the number of years in business operation can influence either an increase or decrease in the employment status. While sex *r (30) =.366, p=.047,* and highest educational attainment *r (30).358, p=.050* are positively correlated to safety. This elucidates that sex and educational status can influence how business establishments implement business operations specifically in establishing a good relationship with the customers. More so the responsiveness when compared with sex and educational attainment were also positively correlated. This supports the idea that quickness in receiving orders and response to such requests are smoothly implemented using technology and these are achieved through constant training and updates with what is the latest in terms of technology that brought a change in the ways of living of the people/customers.

In terms of work environment t, it is evident that it can be influenced by the educational attainment *r (30).448, p=.013* and type of establishment r *(30).632, p=.049.* This means that creating a good work environment in business can be determined when business owners have deeper educational background while such improvement or changes must be within the type of establishment or services being offered.

The socio-demographic profile of the respondents is relevant to the sustainable strategies. There is a significant relationship between sex and highest educational attainment in safety therefore the sex variables with the highest educational attainment

were well-informed about the safety of food establishment operations during the pandemic, which could be due to female managers and or owners of food establishments being exposed to the operation and their commitment to food safety. The work environment is also significant to the highest educational attainment; therefore, it signifies that with the highest educational attainment, the workplace relationships with the collaboration between the food establishments and the food delivery services and the efficiency and employee's health were apparent. According to Fu et. al (2019), owners of restaurants with a high level of education and formal training learned how to operate and manage a restaurant by working for others. Good business was the most significant aspect of this person's job happiness, and he believed that hard effort, honesty, and good customer service were the most important factors in a business's success.

On the test of the significant relationship between the profile and the challenges. All identified independent variables were not correlated with challenges. *Age, r(30) .210, p.266,* Gender *r(30) .174,p=.357,* Status r(30)-.151,p=.426, Highest Educational Attainment *r(30).131, p=.492,* Type of Food Establishment *r(30)-.011,p=.952*, Type of Ownership *r(30)-.029,p=.879,* Size of the Organization *r(30).166,p=.381*, and Years in Business Operation, *r(30).052, p=.784.*

The socio-demographic profile of the respondents was not relevant to the challenges encountered by the restaurants using food delivery services, therefore, there is no significant relationship between the respondent's profile and the challenges experienced by the business owners during this time of the pandemic. Thus, the null hypothesis of no relationship is accepted between the respondent's profile and the challenges in the food delivery services. According to Burhan et. al (2021), the hospitality industry was hit the hardest, as worldwide and local travel fell as a result of the mandatory lockdowns. Small and medium-sized businesses (SMEs) were particularly hard hit, owing to their small size, limited resources, and cash flow constraints. SMEs in industries including hotels and food services, retail, entertainment, and manufacturing are vulnerable to such social and economic constraints.

For the tests of significant relationship between the challenges and the sustainable strategies of food delivery service reveal the test of the significant relationship between the challenges and the sustainable strategies of food delivery services. Environment *r (30).352, p=.05* is positively correlated with challenges. This means that creating a good work environment in business can minimize the challenges encountered by the food establishments, therefore challenges experienced can influence the creation of a good working environment. Nasar et. al (2021) study explains that with simplified solutions, the digitalization of business models would need to embrace innovation principles. Entrepreneurial solutions delivered via mobile phones or smartphones can act as a digital marketplace for businesses and customers to connect.

Conclusions

In general, the majority of respondents confirmed that their food establishments have sustainable strategies for employment, safety, accessibility of the service, responsiveness, and environment. The responders also agreed that these strategies are essential for food establishments owners and managers in navigating the difficulties presented by online delivery services.

The study emphasized the strong relationships between sustainable food delivery service strategies and demographic profiles. In particular, the length of time a business has been in existence seems to affect employment status, and gender and educational background are important factors in determining customer interactions strategies. Among business owners with more education, in particular, technological advancement was noted as being crucial to improving operational efficiency and creating a healthy work atmosphere.

It's interesting to note that there was no significant relationship between the respondents' demographic profiles and the challenges encountered by the food establishments. This implies that the performance and adaptability of food establishments in using food delivery services remained robust and flexible in spite of these factors.

The study validates a significant correlation between the implementation of sustainable practices and the challenges encountered in food delivery services. Creating a positive work atmosphere becomes essential to getting beyond operational obstacles. Moreover, the adoption of advanced technologies such as online platforms and applications not only fosters innovation but also streamlines service delivery, ultimately contributing to enhanced customer satisfaction and operational efficiency in food service establishments.

Recommendations

In light of the findings and conclusions of this study, the following recommendations are proposed:

I. **On sustainable strategies of food delivery services to respondents' profile.**

Employment status, safety, responsiveness, and environment are connected with the respondent’s profile. While the number of years in business operation can influence either an increase or decrease in the employment status. Thus, it is recommended that business owners gain more experience in customer service, employee awareness, and owning a business by attending more training and seminars.

While gender and educational status can influence how business establishments implement business operations, specifically in establishing a good relationship with the customers and being responsive. It is recommended that business owners improve their

skills, knowledge, and attitudes and have constant training and updates on the latest technology that has brought changes in the ways of living of the people/customers.

Lastly, educational status and type of food establishment can influence the environment. It is recommended that business owners have deeper educational knowledge of the business and know how to create a good environment for the customer.

II. **On challenges in the food delivery services to respondents' profile.**

Challenges in the food delivery services are not related to the respondents' profile. It means the profile of the respondents has nothing to do with the challenges experienced by the business owners. Hence, it is recommended that food delivery operators pay particular attention to encouraging food delivery drivers to improve their delivery quality standards. Delivery drivers must encourage consumers to grade their service experience and write feedback about food delivery services to manage customer expectations.

III. **On challenges and the sustainable strategies of food delivery services.**

Challenges in the food delivery services are related to the sustainable strategies of food delivery services, specifically the environment, financial structure, and operating pressure. It means that challenges can influence the environment of the food establishment, their business financial status, and how they can continue to operate. Thus, it is recommended that food delivery service providers recognize and emphasize the significant contribution of delivery drivers to the industry's long-term sustainability. Delivery drivers can contribute to creating an environmentally friendly atmosphere through food delivery, improving the financial status of the food establishment, and helping food establishments continue to operate.

Compliance With Ethical Standards

Ethical standards are the morals that align people in doing the right thing. In this paper, ethical standard was applied in the gathering and retrieval of data strictly observing republic act 10173 otherwise known as the data privacy act of 2012.

The participants of this research were fully aware of the purpose of the study and voluntarily answered the questionnaire. They were well informed that the undertaking was handled with strict confidentiality, for it was enclosed in the questionnaire and was legally binding. After the data, all questionnaires were kept by the researcher for burning and or shedding after 5 years. This is the incompliance with the data privacy law.

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TEACHERS' RESILIENCE AND WORK PERFORMANCE DURING THE NEW NORMAL: BASIS FOR TEACHERS' LEARNING AND DEVELOPMENT

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ABSTRACT

This study investigates the resilience and work performance of Tech-Voc and Non-Tech-Voc teachers in the City of Ilagan during the new normal, using a descriptive-correlational design. The research, conducted in four Technical-Vocational and six Non-Technical-Vocational schools, involved 314 teachers selected through simple random sampling. Data were gathered via questionnaires, documentary analysis, and informal interviews. Findings reveal that most teachers are middle-aged, female, married, with master's units and short tenures. They exhibit high resilience, particularly in personal competencies, family cohesion, social skills, peer support, and spiritual influences. Work performance across both groups is outstanding in task and contextual performance, work behavior, and all key result areas of the Individual Performance Commitment and Review Form (IPCRF), except for the Learning Environment. Performance significantly varies with age, sex, civil status, educational background, position, and years in service, notably in KRA 2. Recommendations include sustaining teacher resilience through support and mentoring, encouraging capacity-building seminars, and reviewing the learning and development program to enhance resilience and performance. Further research is suggested to explore additional factors affecting resilience and instructional performance.

Keywords: *Resilience, Work Performance, Tech-Voc teachers, New Normal, Individual Performance Commitment and Review Form (IPCRF), Descriptive-Correlational Design*

INTRODUCTION

In all parts of the world, education takes a great role for it is regarded as the major catalyst to fill the minds with vital knowledge and wisdom among all learners. It becomes the bridge to successfully reach one's destination towards fulfilling goals of realizing enormous dreams, making it possible for a dreamer to have that open door of greater opportunities. Truly, education is a compass that paves the way towards progression and aids ignorance in inscribing such reality in life. Schools have the key responsibility to cater to the significant educational needs of learners with an atmosphere conducive to learning. Thus, teachers become the educational frontline and prime movers in the educative process.

During the new normal, the Department of Education implemented the Basic Education-Learning Continuity Plan (BE-LCP) where in-person classes and distance learning delivery modalities were set up and adopted during the first quarter of the school year 2022-2023. Yet, during the second quarter, full face-to-face classes were conducted to make learning much more meaningful to all learners after two years of being in a virtual room and a modular setup. Health protocol is still observed through the voluntary use of face masks, but it is still encouraged to use while the locality is still battling a health crisis. School administrators, teachers, and parents work in strong collaboration to keep all learners safe when going to school.

It is further observed that during this new normal in education, many teachers were confronted with challenges in terms of lesson delivery which consists of lesson planning, crafting of up-to-date daily lesson logs (DLL) aligned with the most essential learning competencies (MELCs) imposed by the department and making interactive educational and instructional materials. The teacher's move scheme is considered for the benefit of learners. The student population has increased, therefore, there is a lack of classrooms resulting in double shifts among teachers to accommodate all learners. This has also resulted in a lack of teachers. Adding to their duties, remedial classes are done for struggling students.

Primary classroom duties and responsibilities such as classroom management, student engagement, related works outside teaching, work issues and the pressing work demands, and personal matters such as family responsibilities, finances, and health problems have become the stressors confronting educators today. Such scenarios experienced by them test their patience and resilience at work, which can also affect their overall instructional performance in the new normal, and the new setup in the educational system while still amidst the COVID-19 pandemic.

Indeed, the most esteemed profession in the world is that of a teacher (Strauss, 2018). They were important long before COVID-19, but perhaps it will take a pandemic to finally recognize their contributions and the challenges they are facing (Dabrowski, 2020). Like anyone else, educators face multifarious battles that test their resilience and work performance, especially in this new normal.

In relation to this study, Fonte et al. (2021) concluded that during the implementation of the distance learning delivery modality, teachers were very resilient at work, their work performance was very satisfactory, and their level of resilience affected their work performance. This makes a clearer perspective that teachers with a high degree of resiliency will heighten their instructional performance.

Hence, the researcher, being a Technical-Vocational School teacher, was prompted and motivated to explore, conduct, and pursue this study to purposely determine the teachers' resilience level and their work performance during the new normal focusing on Technical-Vocational and Non-Technical-Vocational Schools. Additionally, he also sought to find out if significant differences in the resilience level and work performance of the aforementioned schools exist as basis for a proposed learning and development activities that will heighten teachers' resilience and work performance, especially in this new normal education.

Through readings of related literature and studies, and based on the available research and published literature, no study yet has been made on the relationship of the profile, resilience level, and work performance in Technical-Vocational and Non-Technical-Vocational Schools in the country, hence, this study entitled Teachers' Resilience and Work Performance During the New Normal: Basis for Teachers' Learning and Development.

Conceptual Framework

Teachers are the focal stakeholders and prime movers of the educative process. It is imperative to figure out the factors affecting their performance. This study anchors itself on the concept of Fonte, et al. (2021) that when teachers demonstrate a high resilience at work, better work performance is expected.

It is noted that when teachers are resilient, despite the ever-changing contexts and situations where they work, they are likely to be able to sustain their quality teaching performance. Daniilidou and Platsidou (2018) identified factors affecting teachers' resilience which consist of the following components: *Personal Competencies and Persistence* describe the personal qualities that affect resilience and tenacity; *Family Cohesion* refers to the relationship of the individuals to their family, which can act as a protective factor of resilience; *Social Skills and Peer Support* refer to the relationship of the individuals with their colleagues in the school context and the ability to form new relationships in their professional environment; and *Spiritual Influences* refer to the need of the individual to seek help from God or other spiritual forces to deal with the challenges.

On the other hand, Koopmans et al. (2013) claim that work performance is very important in determining consistency and maintaining employee work resilience. Work performance is a behavior or action associated with the organization's goals. Individual work performance consists of task performance, contextual performance, and work behavior. Task performance is the proficiency with which individuals perform the core substantive or technical tasks central to his or her job (Campbell,1990), while contextual

performance is the degree to which individuals engage in activities that contribute to organizational effectiveness in ways that shape the organizational, social, and psychological context that catalyzes task activities (Borman and Motowidlo, 1997).

Moreover, DepEd public school teachers are guided by the Results-based Performance Management System - Individual Performance Commitment and Review Form (RPMS-IPCRF) which is composed of Key Result Areas (KRA) 1 to 5 with specific objectives that have to be attained throughout the school year.

Indeed, by heightening the level of resilience, teachers' instructional performance is expected to improve, thus, resulting in effective and efficient classroom teaching.

Research Questions

The study explored the teacher's resilience and work performance during the new normal as a basis for teacher's learning and development.

Specifically, it sought answers to the following questions:

1. What is the profile of teacher-respondents in terms of the following:
    a. age
    b. sex
    c. civil status
    d. educational attainment
    e. teaching position
    f. length of service
2. What is the respondents' level of resilience as to:
    a. personal competencies and persistence
    b. family cohesion
    c. social skills and peer support
    d. spiritual influences
3. Is there a significant difference in respondents' level of resilience when grouped according to their profile?
4. Is there a significant difference in Technical-Vocational and Non-Technical-Vocational School teachers' level of resilience?
5. What is the respondents' level of work performance in terms of:
    a. task performance
    b. contextual performance
    c. work behavior
    d. IPCRF Key Result Areas
6. Is there a significant difference in the respondents' level of work performance when grouped according to their profile?
7. Is there a significant difference in Technical-Vocational and Non-Technical-Vocational School teachers' level of work performance?
8. Is there a significant relationship between the respondents' resilience and their work performance?

METHODOLOGY

Research Design

The descriptive method using the survey and correlation techniques was used in the study. Descriptive-correlational design, according to Becker et al. (2016), is used to explain the phenomena, attitudes, opinions, behaviors, or other defined variables by collecting numerical data which are analyzed using statistically based methods.

Since this study dwelt on determining the teacher's resilience, work performance, and its significant relationship between and among variables, this design is deemed most appropriate.

Locale of the Study

The study was conducted in the Schools Division of the City of Ilagan, particularly in four Technical-Vocational Schools and six Non-Technical-Vocational Schools. The Technical-Vocational Schools consist of the Isabela School of Arts and Trades (ISAT) – Main located in Calamagui 2nd, the Isabela School of Arts and Trades (ISAT) – Cabannungan Annex located in Cabannungan 1st, San Rafael National and Vocational High School (SRNVHS) in Cabisera 17-21, and San Antonio National Agro-Industrial and Vocational High School (SANAIVHS) located in San Antonio. These Tech-Voc Schools in the City offer Tech-Voc subjects/specializations that hone students' specific knowledge and skills. The Non-Technical-Vocational (National High) Schools are composed of the Isabela National High School located in San Vicente Poblacion, Alibagu National High School in Alibagu, Ilagan West National High School in Naguillan Baculud, Santa Isabel National High School in Santa Isabel Sur, Rang-ayan National High School in Rang-ayan, and Abuan National High School in Cabisera 27.

Selection and Description of Respondents

The respondents of this study include 132 teachers from the Technical-Vocational Schools and 182 teachers from the Non-Technical-Vocational Schools in the Division of the City of Ilagan.

Simple random sampling was utilized to determine the respondents in each identified school. Slovin's Formula was employed to determine the sample size.

Data Gathering Instruments

The study made use of questionnaires as the main instrument to gather the needed data supplemented by documentary analysis and informal interviews.

Questionnaire. A four-part questionnaire was used to obtain information on the respondents' profile, level of resilience, individual work performance, and their IPCRF.

Part I: This consists of items related to the respondents' profile such as age, sex, civil status, highest educational attainment, teaching position, and length of service.

Part II: This was intended to measure the teachers' resilience using the Teachers' Resilience Scale developed by Daniilidou and Platsidou (2018). The questionnaire is divided into four components: personal competencies and persistence, family cohesion, social skills and peer support, and spiritual influences.

Part III: This was intended to determine the work performance of teachers using the Individual Work Performance Questionnaire (IWPQ) developed by Koopmans et al. (2014). It consists of items in relation to task performance, contextual performance, and work behavior, respectively.

Modifications were made in both TRS and IWPQ to align the statements with the new normal.

Documentary Analysis. This consists of Part IV: IPCRF Key Result Areas. This was used to measure the individual performance of teachers using the objectives in each KRA through self-assessment by the respondents.

Informal Interview. This was done to reaffirm and validate the answers of respondents in the questionnaires given.

Data Gathering Procedure

The researcher asked permission from the office of the Schools Division Superintendent, City of Ilagan Division through a letter of request to conduct the study in its Tech-Voc and Non-Tech-Voc Schools. Thereafter, upon approval, the researcher coordinated with the school heads and head teachers informing them of the objectives and process of the study. After proper coordination was made, the researcher personally floated, distributed, administered, and retrieved the questionnaires accomplished by the target respondents. He also conducted informal interviews and conversations with the respondents while retrieving the questionnaires. Health protocols were strictly followed during the process.

Data Analysis Procedure

To determine the teachers' level of resilience, the five-point Likert scale was used as follows:

Weight	Mean Range	Response	Level of Resilience
5	4.20-5.00	Always	Very High
4	3.40-4.19	Often	High
3	2.60-3.39	Sometimes	Moderate
2	1.80-2.59	Rarely	Low
1	1.00-1.79	Never	Very Low

To assess the teachers' work performance in terms of task and contextual performance, the five-point Likert scale was applied as follows:

Weight	Mean Range	Response	Work Performance
5	4.20-5.00	Always	Outstanding
4	3.40-4.19	Often	Very Satisfactory
3	2.60-3.39	Sometimes	Satisfactory
2	1.80-2.59	Rarely	Unsatisfactory
1	1.00-1.79	Never	Poor

To evaluate the teachers' work behavior, the five-point Likert scale was employed as follows:

Weight	Mean Range	Response	Work Behavior
5	4.20-5.00	Always	Poor
4	3.40-4.19	Often	Unsatisfactory
3	2.60-3.39	Sometimes	Satisfactory
2	1.80-2.59	Rarely	Very Satisfactory
1	1.00-1.79	Never	Outstanding

To appraise the teachers' work performance in terms of IPCRF key result areas, the five-point Likert scale was utilized as follows:

Weight	Mean Range	Response	IPCRF Performance
5	4.20-5.00	Always	Outstanding
4	3.40-4.19	Often	Very Satisfactory
3	2.60-3.39	Sometimes	Satisfactory
2	1.80-2.59	Rarely	Unsatisfactory
1	1.00-1.79	Never	Poor

The classification of different items of the Teachers' Resilience Scale (TRS) is presented below:

Teachers' Resilience	Items
A. Personal Competencies and Persistence	1, 2, 3, 4, 5, 6, 7, 8, 9
B. Family Cohesion	10, 11,12, 13,14, 15
C. Social Skills and Peer Support	16, 17, 18, 19, 20, 21, 22, 23
D. Spiritual Influences	24, 25, 26

The classification of different items of Individual Work Performance Questionnaires (IWPQ) is shown below:

Individual Work Performance	Items
Task Performance	1, 2, 3, 4, 5, 6, 7
Contextual Performance	8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19

Work Behavior	20, 21, 22, 23, 24, 25, 26, 27

The classification of different items of IPCRF key result areas objectives are presented below:

KRA	Items
KRA 1 - Content Knowledge and Pedagogy	1, 2, 3, 4
KRA 2 - Learning Environment	5, 6, 7, 8
KRA 3 - Diversity of Learners, Curriculum and Planning, and Assessment and Reporting	9, 10, 11, 12
KRA 4 - Community Linkages and Professional Engagement and Personal Growth and Professional Development	13, 14, 15, 16, 17, 18
KRA 5 - Plus Factor	19

RESULTS AND DISCUSSION

1. Respondents' Profile

Table 1. Frequency and Percentage Distribution of Respondents According to Age

Age	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Frequency (*f*)	Percentage (%)	Frequency (*f*)	Percentage (%)
21-25	10	7.58	14	7.69
26-30	44	33.33	53	29.12
31-35	25	18.94	21	11.54
36-40	23	17.42	26	14.29
41-45	18	13.64	20	10.99
46-50	6	4.55	21	11.54
51-55	4	3.03	13	7.14
56-60	2	1.52	12	6.59
61-65	0	0.00	2	1.10
Total	132	100.00	182	100.00

Table 1 illustrates the frequency and percentage distribution of respondents according to their age. Majority of the Tech-Voc School teachers belong to the age group of 26-30 years with a total of 44 or 33.33 percent, followed by 31-35 years old with 25 or 18.94 percent, 36-40 age group with 23 or 17.42 percent, 18 or 13.64 percent come from 41-45 years age bracket, while 10 or 7.58 percent go to 21-25 years of age. Only two or 1.52 percent belong to 56-60 years old which got the lowest frequency.

On the other hand, for the Non-Tech-Voc School teachers, 53 or 29.12 of the total respondents come from the age group of 26-30 years. Those in the age group of 36-40 years are comprised of 26 or 14.29 percent, followed by age group 31-35 and 46-50 with 21 or 11.54 percent. Only two or 1.10 percent belong to 61-65 years old which was the least number of respondents.

It can be surmised that the teachers are in their prime age. It is worthy to note that there are teachers who are still in the service at the age of 61-65 which may manifest their passion and dedication in their professional work to impart essential knowledge to every learner.

Table 2. Frequency and Percentage Distribution of Respondents According to Sex

Sex	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Frequency (*f*)	Percentage (%)	Frequency (*f*)	Percentage (%)
Male	48	36.36	41	22.53
Female	84	63.64	141	77.47
Total	132	100.00	182	100.00

Table 2 presents the frequency and percentage distribution of respondents according to sex. As revealed, Tech-Voc School is dominated by females with 84 or 63.64 percent whereas 36.36 percent or 48 are male teacher-respondents. Meanwhile, Non-Tech-Voc School also has the highest composition of female teachers with 141 or 77.47 percent compared to 41 or 22.53 male teachers.

Truly, in the education sector, there is no doubt that female teachers dominate the population as commonly observed.

Table 3. Frequency and Percentage Distribution of Respondents According to Civil Status

Civil Status	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Frequency (*f*)	Percentage (%)	Frequency (*f*)	Percentage (%)
Single	42	31.82	41	22.53
Married	89	67.42	137	75.27
Widowed	1	0.76	4	2.20
Total	132	100.00	182	100.00

Table 3 exhibits the civil status frequency and percentage distribution of respondents. More than half of the total or 67.42 percent of Tech-Voc School teachers are married, 42, or 31.82 are single, and only one, or 0.76 percent is widowed. Similarly, most of the teacher-respondents from the Non-Tech-Voc Schools are married with 75.27 percent, followed by single individuals with 41 or 22.53 percent, and just 4 or 2.20 of them are widowed.

It can be inferred that being married and having a family is a part of every individual's life. Furthermore, family is the reason why individuals work for them to sustain a living.

Table 4. Frequency and Percentage Distribution of Respondents According to Highest Educational Attainment

Highest Educational Attainment	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Bachelor's Degree	15	11.36	29	15.93
Master's Units	93	70.45	110	60.44
Master's Degree	19	14.39	34	18.68
Doctorate Units	4	3.03	8	4.40
Doctorate Degree	1	0.76	1	0.55
Total	132	100.00	182	100.00

Table 4 discloses the frequency and percentage distribution of respondents' highest educational attainment. Of the 132 Tech-Voc School teachers, 93 or 70.45 percent have earned master's units, followed by 19 or 14.39 percent with a master's degree, 15, or 11.36 percent have a bachelor's degree, while four or 3.03 percent have doctorate units. One or 0.76 percent possesses a doctorate. For the Non-Tech-Voc teachers, more than half, or 60.44 percent have master's units, followed by 34, or 18.68 percent with a master's degree, 29 or 15.93 percent have attained a bachelor's degree, while eight, or 4.40 percent took have doctorate units. One or 0.55 percent has completed his/her doctorate.

As revealed in the table, most of the teachers are engaged in continuing professional development by upgrading themselves through graduate and post-graduate studies to enrich their knowledge and skills especially in these changing and challenging times of the 21st century. This surfaced during informal conversations of the researcher with the respondents.

Table 5. Frequency and Percentage Distribution of Respondents According to Teaching Position

Teaching Position	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Teacher 1	33	25.00	37	20.33
Teacher 2	8	6.06	29	15.93
Teacher 3	84	63.64	100	54.95
Master Teacher 1	6	4.55	12	6.59

Master Teacher 2	1	0.76	4	2.20
Total	132	100.00	182	100.00

Table 5 displays the frequency and percentage distribution of the respondents according to teaching position. Among the Tech-Voc School teachers, 63.64 percent hold the position of Teacher 3, 25.00 percent, or 33 are Teacher 1, eight or 6.06 percent are Teacher 2, and six or 4.55 percent are Master Teacher 1. Only one or 0.76 percent got the Master Teacher 2 position. As regards the Non-Tech-Voc teachers, there are 54.95 percent hold the Teacher 3 position, 20.33 percent or 37 are Teacher 1, 15.93 percent or 29 are Teacher 2, 6.59 or 12 are Master Teacher 1, while four or 2.20 percent hold the position of Master Teacher 2.

The biggest number in both groups of respondents are those with Teacher 3 positions. They are promoted from Teacher 1 either by filling up vacancies or through reclassification. Reclassification of teachers is made possible through the Equivalents Record Form (ERF) under Section 14 of Presidential Decree No. 985, as long as the applicants meet the requirements of 36 M.A. units or 33 M.A. units plus 150 hours of seminar or training attended. On the other hand, a small number of Master Teachers is expected due to the guideline that an allotment of one MT position per subject area for at least 5-7 teachers should be the basis in the secondary level, pursuant to DECS Order No. 70, s. 1998.

Table 6. Frequency and Percentage Distribution of Respondents According to Length of Service

Length of Service	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
1-5 Yrs.	46	34.85	64	35.16
6-10 Yrs.	57	43.18	41	22.53
11-15 Yrs.	20	15.15	28	15.38
16-20 Yrs.	5	3.79	14	7.69
21-25 Yrs.	0	0.00	11	6.04
26-30 Yrs.	2	1.52	14	7.69
31-35 Yrs.	2	1.52	8	4.40
36-40 Yrs.	0	0.00	2	1.10
Total	132	100.00	182	100.00

Table 6 unveils the frequency and percentage distribution of the respondents' length of service. Most of the Tech-Voc School teachers are 6-10 years in the service with 57 or 43.18 percent, followed by 1-5 years with 46 or 34.85 percent, 11-15 years with 20 or 15.15 percent, 16-20 years with five or 3.79 percent, while two or 1.52 percent have served for about 26-30 years and 31-35 years. Regarding the length of service of Non-Tech-Voc School teachers, 1-5 years got the greatest number of respondents with 64 or 35.16 percent, followed by 6-10 years with 41 or 22.53 percent, 11-15 years with 28 or

15.38 percent, and two or 1.10 percent have been in the service for about 36-40 years now.

Many teacher-respondents are new in the service in public schools. These teachers were hired at a young age, yet as observed, some teachers came from private institutions who applied and got hired in public schools.

2. Respondents' Level of Resilience

a. Personal Competencies and Persistence

Table 7. Respondents' Level of Resilience in Terms of Personal Competencies and Persistence

Personal Competencies and Persistence	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
1. I think of myself as a strong person.	4.46	Very High	4.48	Very High
2. If necessary, I can make unpopular or difficult decisions that affect others.	3.39	Moderate	3.47	High
3. I am not easily discouraged by failure.	4.02	High	4.11	High
4. I like challenges.	3.92	High	4.15	High
5. I can handle unpleasant feelings, such us anger or fear.	3.95	High	3.95	High
6. Under pressure, I am able to focus and think clearly.	3.81	High	3.98	High
7. I prefer to take the lead in problem-solving.	3.54	High	3.72	High
8. I work hard to attain my goals.	4.58	Very High	4.67	Very High
9. I am able to adapt to change.	4.51	Very High	4.60	Very High
Category Mean	4.02	High	4.13	High

Table 7 reveals the respondents' level of resilience in terms of personal competencies and persistence. As presented, both Tech-Voc School teachers and Non-Tech-Voc School teachers have a mean of 4.02 and 4.13 respectively which explicitly indicate that in this domain, they possess a *high* resilience.

Specifically, both Tech-Voc School teachers and Non-Tech-Voc School teachers hold a *very high* resilience for the following specific indicators: "They work hard to attain their goals with weighted means of 4.58 and 4.67, able to adapt to change with 4.51 and 4.60 and think of themselves as a strong person" with 4.46 and 4.48, respectively. However, it is interesting to note that there is a difference in the statement, "if necessary, they can make unpopular or difficult decisions that affect others" where Tech-Voc School teachers *sometimes* do it described as *moderate,* whereas the Non-Tech-Voc School

teachers claim they *often* do it, interpreted as *high*. Meanwhile, this same statement yields the lowest weighted mean for both Tech-Voc and Non-Tech-Voc respondents.

It can be deduced that teachers have gained personal competencies and persistence through their personal and professional experiences. Indeed, they experience failures but they can stand firm, face such challenges with courage, and able to adapt to changes with endurance. This came out during the informal interview among teachers. Relatively, Patterson, Collins, and Abbott (2004) revealed that resilient teachers have a set of personal values that guide their decision-making.

b. Family Cohesion

Table 8. Respondents' Level of Resilience in Terms of Family Cohesion

Family Cohesion	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
1. My family is characterized by healthy coherence.	4.48	Very High	4.44	Very High
2. I feel very happy with my family.	4.81	Very High	4.84	Very High
3. In my family, we like to do things together.	4.63	Very High	4.76	Very High
4. In difficult periods my family keeps a positive outlook on the future.	4.55	Very High	4.45	Very High
5. Facing other people, our family acts loyal towards one another.	4.56	Very High	4.48	Very High
6. My family's understanding of what is important in life is very similar to mine.	4.53	Very High	4.48	Very High
Category Mean	4.59	Very High	4.58	Very High

Table 8 illustrates the respondents' level of resilience in terms of family cohesion. As shown, both Tech-Voc School teachers and Non-Tech-Voc School teachers got a mean of 4.59 and 4.58 correspondingly which implies that in this domain, they possess a *very high* resilience.

Noticeably, Tech-Voc School teachers got weighted mean values ranging from 4.48 to 4.81 while the Non-Tech-Voc School teachers garnered weighted mean responses ranging from 4.44 to 4.84 which describes that all the items in this category are demonstrated by the respondents to a *very high* level.

Hence, teachers do get strength and inspiration from their families for them to become much more resilient during their tough battles, personal or in their workplace as professionals. This was confirmed by the respondents during the informal conversations. Botou et al. (2017) asserted the importance of family in building resilience. They found

that the strong family nexus helped teachers in Greece maintain their resilience during the economic crisis.

c. Social Skills and Peer Support

Table 9. Respondents' Level of Resilience in Terms of Social Skills and Peer Support

Social Skills and Peer Support	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
1. New friendships are something I make easily in my workplace.	4.25	Very High	4.26	Very High
2. The bonds between my peers and me are strong.	4.30	Very High	4.31	Very High
3. I get support from my peers.	4.41	Very High	4.43	Very High
4. Meeting new people in my workplace is something I am good at.	4.23	Very High	4.16	High
5. When needed, I have always someone in my workplace who can help me.	4.35	Very High	4.45	Very High
6. I can discuss personal issues with my peers.	3.70	High	3.72	High
7. In my workplace when I am with other people, I easily laugh.	4.27	Very High	4.16	High
8. In my workplace I enjoy being together with other people.	4.15	High	4.20	Very High
Category Mean	4.21	Very High	4.21	Very High

Table 9 displays the respondents' level of resilience in terms of social skills and peer support. Tech-Voc School teachers are *always* "good at meeting new people in their workplace", with a weighted mean of 4.23 described as having *very high* resilience, whereas the Non-Tech-Voc School teachers are *often* good at it, with a weighted mean of 4.16, or *high* resilience. Tech-Voc School teachers *always* "easily laugh in their workplace when they are with other people" with a weighted mean of 4.27 described as *very high*, whereas Non-Tech-Voc School teachers *often* easily laugh with others, with 4.16 inferred as *high.* Tech-voc school teachers *often* and Non-Tech-Voc High School teachers *always* "enjoy being together with other people in the workplace" with 4.15 described as *high* and 4.20 marked as *very high* resilience, respectively.

Moreover, both Tech-Voc and Non-Tech-Voc High School teachers say they *always* get support from their peers which got the highest weighted means of 4.41 and 4.43 respectively, interpreted as having *very high* resilience. Meanwhile, these groups of teachers say that they *often* "discuss personal issues with their peers" whom they trusted the most. This item got the lowest weighted means of 3.70 and 3.72 respectively, inferred as *high.*

Remarkably, both Tech-Voc and Non-Tech-Voc High School teachers got the same mean of 4.21 which infers that in this domain, they possess a *very high* resilience.

Indeed, teachers greatly manifest and possess a very high level of resilience through socialization and when getting genuine support from their peers in their place of work. Building camaraderie, strong bonds, and extended arms to help one another become the ingredients to build stronger resilience for individuals to get up from any adversity. In relation to this, Bobek (2002) stressed that to foster resilience, new teachers must seek out relationships with colleagues who understand teaching and what teachers do.

d. Spiritual Influences

Table 10. Respondents' Level of Resilience in Terms of Spiritual Influences

Spiritual Influences	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
1. God or fate can help me overcome challenges.	4.84	Very High	4.82	Very High
2. I believe things happen for a reason.	4.78	Very High	4.77	Very High
3. I believe I have to act on a hunch (strong intuitive feeling).	4.45	Very High	4.49	Very High
Category Mean	4.69	Very High	4.69	Very High

Table 10 depicts the respondents' level of resilience in terms of spiritual influences. Both Tech-Voc and Non-Tech-Voc School teachers got the same mean of 4.69 which indicates that in this domain, they possess a *very high* resilience.

Tech-Voc School teachers got weighted mean values ranging from 4.45 to 4.84 while the Non-Tech-Voc School teachers garnered weighted mean responses ranging from 4.49 to 4.82 which describes that all the items in this category demonstrated by both groups of respondents to a *very high* level.

During the informal interview, teachers confirm that they do rely on a Supreme Being who is the mediator of their lives. They know that at the end of the day, they could be able to overcome challenges through their faith. They also believe that things happen for a purpose. Hence, by depending on spiritual influences, teachers become much more strongly resilient personally and professionally.

Moreover, the results assert Ang and Diaz' (2014) findings that most of the participants strongly believe that there is God who would help them recover from calamities and other misfortunes. The resiliency of the people as provided by the respondents would often be faith-based. Yet, Ignacio (2011) emphasized that this

spirituality allows their resilience to come forth in times of crises and extreme life experiences.

Table 11. Summary of the Respondents' Level of Resilience

Resilience	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
a. Personal Competencies and Persistence	4.02	High	4.13	High
b. Family Cohesion	4.59	Very High	4.58	Very High
c. Social Skills and Peer Support	4.21	Very High	4.21	Very High
d. Spiritual Influences	4.69	Very High	4.69	Very High
Overall Mean	4.38	Very High	4.40	Very High

Table 11 reveals the summary of the respondents' level of resilience. As shown in the table, both Tech-Voc and Non-Tech-Voc School teachers acquired the same *high* level of personal competencies and persistence with weighted means of 4.02 and 4.13, respectively. Also, they hold a *very high* level of resilience along the other three domains family cohesion, social skills and peer support, and spiritual influences. Overall, both groups possess a *very high* level of resilience.

As shown, the respondents possess a high and very high level of resilience. This is confirmed by Amin et al. (2022) in which they found out that most of the teachers are classified as having high and very high resilience and none as low or very low resilience.

Teachers' level of resilience is optimum despite the challenging situation they are facing during the new normal. Relative to this note, Gibbs and Miller (2014) contended that lecturers are resilient and there should not be too much worry about their commitment to their teaching. They are very likely to be able to adapt to the new teaching situation.

Chan (2008) suggested training on personal skills such as stress management for building resilience among teachers. Tait (2008) reported that ingraining socialization skills, assertiveness, self-discipline, and empathy may improve the resilience of teachers.

Furthermore, Day and Gu (2010) specified that personal characteristics, competencies, and positive influences of the social environment in which the individual works and lives, independently and together interact to contribute to the process of resilience building.

3. Significant Difference Between the Respondents' Level of Resilience When Grouped According to Profile

a. Tech-Voc School Teachers

a.1 Personal Competencies and Persistence

Table 12. Results of the Test of Significant Difference in the Level of Resilience of the Tech-Voc School Teachers in Terms of Personal Competencies and Persistence When Grouped According to Their Profile

Level of Resilience in Terms of Personal Competencies and Persistence and the Following Profile	Probability of F	Decision	Remarks
Age	0.00000019	Reject H_0	Significant
Sex	0.00010052	Reject H_0	Significant
Civil Status	0.00005860	Reject H_0	Significant
Educational Attainment	0.00000000	Reject H_0	Significant
Teaching Position	0.00000000	Reject H_0	Significant
Length of Service	0.00000018	Reject H_0	Significant

Table 12 presents the results of the test of significant difference in the level of resilience of the Tech-Voc School teachers in terms of personal competencies and persistence when grouped according to their profile.

The results show that the F-probability values are less than 0.05, hence, the null hypothesis is rejected at a 0.05 level of significance. Thus, there is a significant difference in the level of resilience of the Tech-Voc School teachers in terms of personal competencies and persistence when grouped according to their profile. It implies that the Tech-Voc School teachers' resilience in terms of personal competence and persistence differ when grouped by age, sex, civil status, educational attainment, teaching position, and length of service. It is further inferred as indicated by the mean in Appendix C that those Tech-Voc School teachers who are 41-45 years old, with doctorate units and a doctorate holder, master teacher 2, and have been in the service for 16-20 years have *very high* resilience in their competencies and persistence, and those who are male and married have *high* resilience along this area.

As regards their *age*, there exists significant difference, but each age group is still within the same level of high resilience contrary to the findings of Amin et al (2022). which found out that the older a staff member is, the less resilient he/she is. Moreover, Sarmiento, Ponce, and Bertolín (2021) revealed that students over 25 years, for almost all factors, and males, with a not very significant difference from female students, had higher scores on the construct of resilience. Labrague and Ballad (2020) explored a study on resilience that reveals *sex*-related differences. Roman-Mata et. al (2020). found out that employed people, those with higher education, presented higher rates of resilience.

a.2 Family Cohesion

Table 13. Results of the Test of Significant Difference in the Level of Resilience of the Tech-Voc School Teachers in Terms of Family Cohesion When Grouped According to Their Profile

Level of Resilience in Terms of Family Cohesion and the Following Profile	Probability of F	Decision	Remarks
Age	0.00000056	Reject H_0	Significant
Sex	0.00041262	Reject H_0	Significant
Civil Status	0.00005955	Reject H_0	Significant
Educational Attainment	0.00000000	Reject H_0	Significant
Teaching Position	0.00000000	Reject H_0	Significant
Length of Service	0.00000057	Reject H_0	Significant

The results of the test of significant difference in the level of resilience of the Tech-Voc school teachers in terms of family cohesion, when grouped according to their profile, are presented in Table 13.

It is revealed from the results that the probability values of F are less than 0.05. This signifies the rejection of the null hypothesis at a 0.05 significance level. Therefore, there is a significant difference in the level of resilience of the Tech-Voc School teachers in terms of family cohesion when grouped according to their profile. This means that the Tech-Voc School teachers have different level of resilience along family cohesion when they are classified by age, sex, civil status, educational attainment, teaching position, and length of service. As appended, it is noted that the Tech-Voc School teachers who belong to the 51-60 age bracket, are female, married, doctorate holders, master teacher 2, and with work experience for 26-30 years, have *very high* resilience in terms of family cohesion.

It is notable that with regard to their *sex*, female teachers from Tech-Voc School possess a higher level of resilience than males, though overall, both groups of male and female respondents are described as having very high resilience levels. Such findings relate to that of Amin et al (2022). which found out that based on gender, the level of resilience for both male and female lecturers is within the same level of high resilience, with females having a slightly higher rate than males. Furthermore, the findings that women are more resilient than men are consistent with the study of Sun and Stewart (2007). Although the subjects in that study were children and adolescents. Relatively, Roman-Mata et al. (2020) found that those with dependents presented higher rates of resilience.

a.3 Social Skills and Peer Support

Table 14. Results of the Test of Significant Difference in the Level of Resilience of the Tech-Voc School Teachers in Terms of Social Skills and Peer Support When Grouped According to Their Profile

Level of Resilience in Terms of Social Skills and Peer Support and the Following Profile	Probability of F	Decision	Remarks
Age	0.00000028	Reject H_0	Significant
Sex	0.00187000	Reject H_0	Significant
Civil Status	0.00005750	Reject H_0	Significant
Educational Attainment	0.00000000	Reject H_0	Significant
Teaching Position	0.00000000	Reject H_0	Significant
Length of Service	0.00000028	Reject H_0	Significant

Table 14 reveals the results of the test of significant difference in the level of resilience of the Tech-Voc school teachers in terms of social skills and peer support when grouped according to their profile.

The results reflect that the F-probability values are less than 0.05. For this reason, the null hypothesis is rejected at a 0.05 level of significance. As a result, there is a significant difference in the level of resilience of the Tech-Voc school teachers in terms of social skills and peer support when grouped according to their profile. It shows that the teachers vary from each other in their resilience level along with social skills and peer support when clustered by their age, sex, civil status, educational attainment, teaching position, and length of service. It further infers, as indicated by the mean in Appendix C, that those teachers who are of age 41-45, female, married, with doctorate units and a doctorate holder, master teachers 1, and have been in the service for 16-20 years, have *very high* resilience.

With respect to the *length of service,* the present study found a significant difference, but respondents are within the same level of high resilience opposing to Amin et al.'s (2022) findings that length of tenure negatively correlates with the level of resilience in the tenure group of 1-6 years, 7-21 years, and 21 years and above, although on average all groups are still categorized as having high resilience. Freedman & Appleman (2008) asserted that peer factors are significant in building teachers' resilience, especially at the early stages of careers. A study by Liang et al.(2020) affirmed that supportive coworkers in the workplace should be demonstrated to sustain resilience among educators.

a.4 Spiritual Influences

Table 15. Results of the Test of Significant Difference in the Level of Resilience of the Tech-Voc School Teachers in Terms of Spiritual Influences When Grouped According to Their Profile

Level of Resilience in Terms of Spiritual Influences and the Following Profile	Probability of F	Decision	Remarks
Age	0.00000064	Reject H_0	Significant
Sex	0.00352014	Reject H_0	Significant
Civil Status	0.00002268	Reject H_0	Significant
Educational Attainment	0.00000000	Reject H_0	Significant
Teaching Position	0.00000000	Reject H_0	Significant
Length of Service	0.00000054	Reject H_0	Significant

The results of the test of significant difference in the level of resilience of the Tech-Voc school teachers in terms of spiritual influences, when grouped according to their profile, are displayed in Table 15.

It is evident from the results that the P-values of F are less than 0.05, hence, the null hypothesis is rejected at a 0.05 significance level. Thus, there is a significant difference in the level of resilience of the Tech-Voc school teachers in terms of spiritual influences when grouped according to their profile. It implies that the teachers' resilience differs from each other along spiritual influences when grouped by their age, sex, civil status, educational attainment, teaching position, and length of service. As appended, the spiritual influence is *very high* among the teachers who are of age 46-50, female, married, with doctorate units, teacher 3 and have been working for 16-20 years.

A study by Malcom (2007) disclosed that adults had a sense of faith and considered themselves to be religious or spiritual.

b. Non-Tech-Voc School Teachers

b.1 Personal Competencies and Persistence

Table 16. Results of the Test of Significant Difference in the Level of Resilience of the Non-Tech-Voc School Teachers in Terms of Personal Competencies and Persistence When Grouped According to Their Profile

Level of Resilience in Terms of Personal Competencies and Persistence and the Following Profile	Probability of F	Decision	Remarks

Age	0.00000000	Reject H_0	Significant
Sex	0.00053100	Reject H_0	Significant
Civil Status	0.00000624	Reject H_0	Significant
Educational Attainment	0.00000000	Reject H_0	Significant
Teaching Position	0.00000000	Reject H_0	Significant
Length of Service	0.00000001	Reject H_0	Significant

Table 16 discloses the results of the test of significant difference in the level of resilience of the Non-Tech-Voc School teachers in terms of personal competencies and persistence when grouped according to their profile.

The results reveal that the F-probability values are less than 0.05. This signifies the rejection of the null hypothesis at a 0.05 significance level. Therefore, there is a significant difference in the level of resilience of the Non-Tech-Voc High School teachers in terms of personal competencies and persistence when grouped according to their profile. It shows that the Non-Tech-Voc High School teachers have different resilience levels along the said category when classified by age, sex, civil status, educational attainment, teaching position, and length of service. As indicated by the mean in Appendix C, the personal competencies and persistence are *very high* among the teachers who are of age 36-40, doctorate holders and have been in the service for 16-20 years. Whereas the said resilience is *high* among the teachers who are male, single, and with Teacher 1 position.

As noted, Non-Tech-Voc School male teachers have a higher level of resilience than females. Such a finding is consistent with that of Erdogan et al.'s (2015) findings that males are more resilient than females. Overall, both groups of male and female respondents are described as having very high in their resilience levels. Relatively, Polat and Iskender (2018) did not find any significant difference in the resilience of male and female teachers. Roman-Mata et. al (2020). found out that employed people, those with higher education, presented higher rates of resilience.

b.2 Family Cohesion

Table 17. Results of the Test of Significant Difference in the Level of Resilience of the Non-Tech-Voc High School Teachers in Terms of Family Cohesion When Grouped According to Their Profile

Level of Resilience in Terms of Family Cohesion and the Following Profile	Probability of F	Decision	Remarks
Age	0.00000000	Reject H_0	Significant

Sex	0.00002600	Reject H_0	Significant
Civil Status	0.00000173	Reject H_0	Significant
Educational Attainment	0.00000000	Reject H_0	Significant
Teaching Position	0.00000000	Reject H_0	Significant
Length of Service	0.00000003	Reject H_0	Significant

The results of the test of significant difference in the level of resilience of the Non-Tech-Voc High School teachers in terms of family cohesion, when grouped according to their profile, are disclosed in Table 17.

It is revealed from the results that the P-values of F are less than 0.05. For this reason, the null hypothesis is rejected at a 0.05 level of significance. As a result, there is a significant difference in the level of resilience of the Non-Tech-Voc High School teachers in terms of family cohesion when grouped according to their profile. It implies that the teachers vary from each other in their resilience level along family cohesion when clustered by age, sex, civil status, educational attainment, teaching position, and length of service. In this study, it is noted that family cohesion is *very high* among the teachers who are of age 41-45, female, married, doctorate holders, master teachers 1, and worked for 16-20 years.

Noticeably, with regard to their *age*, there exists significant difference, but each age group is still within the same level of high resilience contrary to the findings of Amin et al. (2022) which found that the older a staff member is, the less resilient he/she is. Relatively, Roman-Mata et al.(2020) found that those with dependents presented higher rates of resilience.

b.3 Social Skills and Peer Support

Table 18. Results of the Test of Significant Difference in the Level of Resilience of the Non-Tech-Voc High School Teachers in Terms of Social Skills and Peer Support When Grouped According to Their Profile

Level of Resilience in Terms of Social Skills and Peer Support and the Following Profile	Probability of F	Decision	Remarks
Age	0.00000000	Reject H_0	Significant
Sex	0.00012600	Reject H_0	Significant
Civil Status	0.00000041	Reject H_0	Significant
Educational Attainment	0.00000000	Reject H_0	Significant

Teaching Position	0.00000000	Reject H_0	Significant
Length of Service	0.00000001	Reject H_0	Significant

Table 18 exhibits the results of the test of significant difference in the level of resilience of the Non-Tech-Voc High School teachers in terms of social skills and peer support when grouped according to their profile.

The results show that the F-probability values are less than 0.05, hence, the null hypothesis is rejected at a 0.05 level of significance. Thus, there is a significant difference in the level of resilience of the Non-Tech-Voc High School teachers in terms of social skills and peer support when grouped according to their profile. Teachers differ in their resilience level along social skills and peer support when grouped by age, sex, civil status, educational attainment, teaching position, and length of service. As evidenced by the mean in Appendix C, the teachers aged 46-50, female, widowed, doctorate holders, master teachers 2, and served for 21-25 years, have *very high* resilience along the said indicator.

Regarding the *length of service,* the present study found a significant difference, but respondents are within the same level of high resilience negating that of Amin et al.(2022) findings that length of tenure negatively correlates with the level of resilience in the tenure group of 1-6 years, 7-21 years, and 21 years and above, although on average all groups are still categorized as having high resilience. Freedman & Appleman (2008) affirm that peer factors are significant in building teachers' resilience, especially at the early stages of careers. Teachers get optimism and aspiration from their coworkers in any challenging situation as reported by Anderson and Olsen (2006).

b.4 Spiritual Influences

Table 19. Results of the Test of Significant Difference in the Level of Resilience of the Non-Tech-Voc School Teachers in Terms of Spiritual Influences When Grouped According to Their Profile

Level of Resilience in Terms of Spiritual Influences and the Following Profile	Probability of F	Decision	Remarks
Age	0.00000000	Reject H_0	Significant
Sex	0.00042800	Reject H_0	Significant
Civil Status	0.00000701	Reject H_0	Significant
Educational Attainment	0.00000000	Reject H_0	Significant
Teaching Position	0.00000000	Reject H_0	Significant
Length of Service	0.00000003	Reject H_0	Significant

The results of the test of significant difference in the level of resilience of the Non-Tech-Voc High School teachers in terms of spiritual influences, when grouped according to their profile, are exhibited in Table 19.

It is evident from the results that the P-values of F are less than 0.05. This signifies the rejection of the null hypothesis at a 0.05 significance level. Therefore, there is a significant difference in the level of resilience of the Non-Tech-Voc High School teachers in terms of spiritual influences when grouped according to their profile. It shows that the teachers have different resilience level along spiritual influences when classified by age, sex, civil status, educational attainment, teaching position, and length of service. As appended, the spiritual influence is *very high* among the teachers who are of age 36-40, male, single, bachelor's and master's degree holders, teachers 2, and have worked for 6-10 years.

Malcom (2007) revealed in a study that adults had a sense of faith and considered themselves to be religious or spiritual.

4. Significant Difference Between Tech-Voc and Non-Tech-Voc School Teachers' Level of Resilience

Table 20. Results of the Test of Significant Difference Between Tech-Voc and Non-Tech-Voc School Teachers' Level of Resilience

Resilience	Mean		Probability of t	Decision	Remarks
	Tech-Voc School Teachers	Non-Tech-Voc High School Teachers			
Personal Competencies and Persistence	4.02	4.13	0.02434	Reject H_0	Significant
Family Cohesion	4.59	4.58	0.71410	Accept H_0	Not Significant
Social Skills and Peer Support	4.21	421	0.93900	Accept H_0	Not Significant
Spiritual Influences	4.69	4.69	0.90220	Accept H_0	Not Significant

Table 20 discloses the results of the test of significant difference between Tech-Voc and Non-Tech-Voc School teachers' level of resilience

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The results show that the probability value of t for personal competencies and persistence is less than 0.05, hence, the null hypothesis is rejected at a 0.05 level of significance. Thus, there is a significant difference between Tech-Voc and Non-Tech-Voc High School teachers' level of resilience in terms of personal competencies and persistence. It implies that the resilience of the Non-Tech-Voc High School teachers in this area differs from that of the Tech-Voc school teachers. It further states as indicated by the mean in the table that the Non-Tech-Voc High School teachers have *higher*

resilience in terms of personal competencies and persistence than the Tech-Voc teachers.

However, there is no significant difference between the Tech-Voc and Non-Tech-Voc High School teachers' level of resilience in family cohesion, social skills and peer support, and spiritual influences. Hence, the null hypothesis is accepted at a 0.05 significance level. It indicates that the two groups of teachers have similarities in their resilience levels along these three domains. Relative to this, Gu and Day (2007) specified that personal characteristics, competencies, and positive influences of the social environment in which the individual works and lives, independently and together interact to contribute to the process of resilience building.

5. Respondents' Level of Work Performance

a. Task Performance

Table 21. Respondents' Level of Work Performance in Terms of Task Performance

Task Performance	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
1. I manage to plan my work so that it is done on time.	4.45	Outstanding	4.48	Outstanding
2. My planning is optimal.	4.14	Very Satisfactory	4.09	Very Satisfactory
3. I keep in mind the results that I have to achieve in my work.	4.53	Outstanding	4.54	Outstanding
4. I am able to separate main issues from side issues at work.	4.45	Outstanding	4.45	Outstanding
5. I know how to set the right priorities.	4.39	Outstanding	4.65	Outstanding
6. I am able to perform my work well with minimal time and effort.	4.20	Outstanding	4.18	Very Satisfactory
7. Collaboration with others is very productive.	4.63	Outstanding	4.56	Outstanding
Category Mean	4.40	Outstanding	4.42	Outstanding

Table 21 exhibits the respondents' work performance level in terms of task performance. Both Tech-Voc and Non-Tech-Voc High School teachers generally say "their planning is optimal" with a mean of 4.14 and 4.09 respectively, described as *very satisfactory.* Furthermore, Tech-Voc School teachers *always* while Non-Tech-Voc High School teachers *often* are "able to perform their work well with minimal time and effort" with 4.20 and 4.18 interpreted as *outstanding* and *very satisfactory* correspondingly. Both groups got an *outstanding* performance in all the other items in which "they manage to plan their work so that it is done on time; keep in mind the results that they have to achieve in their work; separate main issues from side issues at work; know how to set the right priorities; and collaboration with others is very productive."

As indicated, both Tech-Voc and Non-Tech-Voc High School teachers attained a mean of 4.40 and 4.42 respectively, which indicate that they possess an *outstanding* task performance. This means that the primary role of teachers inside the classroom is excellently done.

Undoubtedly, teachers do their primary job as classroom teachers. Passion and dedication to teaching are unequivocally manifested by them during the new normal, guided by the mission and vision of the department. School heads are encouraged to always appreciate the teachers for them to be inspired and motivated always.

In a study by Mbon (2017), it is revealed that head teachers' decision-making strategy and leadership style have a significant influence on teachers' task performance. Also, head teachers' communication skills significantly relate to teachers' task performance. He concluded that proper managerial behavior boosts teachers' morale towards high task performance.

b. Contextual Performance

T**able 22.** Respondents' Level of Work Performance In terms of Contextual Performance

Contextual Performance	Tech-Voc School Teachers		National High (Non-Tech-Voc) School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
1. I take on extra responsibilities.	4.49	Outstanding	4.35	Outstanding
2. I start new tasks myself when my old ones are finished.	4.25	Outstanding	4.22	Outstanding
3. I take on challenging work tasks when available.	4.27	Outstanding	4.23	Outstanding
4. I work at keeping my job knowledge up-to-date.	4.27	Outstanding	4.44	Outstanding
5. I work at keeping my job skills up-to-date.	4.42	Outstanding	4.44	Outstanding
6. I come up with creative solutions to new problems.	4.19	Very Satisfactory	4.20	Outstanding
7. I keep looking for new challenges in my job.	4.08	Very Satisfactory	4.05	Very Satisfactory
8. I do more than what is expected of me.	4.32	Outstanding	4.29	Outstanding
9. I actively participate in work meetings.	4.31	Outstanding	4.36	Outstanding
10. I actively look for ways to improve my performance at work.	4.45	Outstanding	4.53	Outstanding
11. I grasp opportunities when they present themselves.	4.35	Outstanding	4.36	Outstanding

12. I know how to solve difficult situations and setbacks quickly.	4.12	Very Satisfactory	4.07	Very Satisfactory
Category Mean	4.29	Outstanding	4.30	Outstanding

Table 22 discloses the respondents' work performance level relative to contextual performance. Both Tech-Voc and Non-Tech-Voc High School teachers say "they keep looking for new challenges in their job" with a mean of 4.08 and 4.05 respectively, described as *very satisfactory.* Likewise, both Tech-Voc and Non-Tech-Voc High School teachers rated themselves *very satisfactory* in "knowing how to solve difficult situations and setbacks quickly." On the other hand, Tech-Voc School teachers perform *very satisfactorily* while Non-Tech-Voc School teachers are *outstanding* in "coming up with creative solutions to new problems" with 4.19 and 4.20 correspondingly. Both groups got *outstanding* performances in "taking on extra responsibilities, and actively looking for ways to improve their performance at work."

As shown, both Tech-Voc and Non-Tech-Voc High School teachers got a mean of 4.29 and 4.30 respectively, which implies that they have an *outstanding* contextual performance which is the extra responsibilities done by teachers aside from teaching.

This indicates that apart from doing their primary duties and responsibilities in the classroom, teachers also willingly do extra-curricular activities in their respective schools like having coordinatorships in their subjects and curriculum, mentoring and coaching their students and their colleagues as needed, keeping their knowledge and skills up-to-date by attending trainings and seminars, actively participate in work meetings, and other extra-roles. These were confirmed by the respondents during informal dialogues. Relative to this, Nini (2019) affirmed that contextual performance is activities like coaching colleagues, strengthening social networks in an organization, and increasing the organization's workflow.

c. Work Behavior

Table 23. Respondents' Level of Work Performance in Terms of Work Behavior

Work Behavior	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
1. I complain about unimportant matters at work.	2.07	Rarely	2.10	Rarely
2. I make problems greater than they were at work.	1.52	Never	1.58	Never
3. I focus on the negative aspects of a work situation, instead of on the positive aspects.	1.47	Never	1.43	Never
4. I speak with colleagues about the negative aspects of my work.	1.81	Rarely	1.59	Never

5. I speak with people from outside the organization about the negative aspects of my work.	1.52	Never	1.34	Never
6. I do less than is expected of me.	1.45	Never	1.44	Never
7. I manage to get off from a work task easily.	1.66	Never	1.75	Never
8. I do nothing, while I should have been working.	1.36	Never	1.35	Never
Category Mean	1.61	Outstanding	1.57	Outstanding

Table 23 denotes the respondents' work performance level in terms of work behavior. Both Tech-Voc and Non-Tech-Voc High School teachers just *rarely* "complain about unimportant matters at work" with a mean of 2.07 and 2.10 respectively, interpreted as *very satisfactory.* On the other hand, Tech-Voc School teachers *rarely* while Non-Tech-Voc High School teachers *never* "speak with colleagues about the negative aspects of their work" with 1.81 and 1.59, inferred as *very satisfactory* and *outstanding* correspondingly. Both groups got *outstanding* performance in all the other items where they *never* "do nothing, while they should have been working" (1.36, 1.35) and *never* "speak with people from outside the organization about the negative aspects of their work" (1.52, 1.34) respectively.

Both Tech-Voc and Non-Tech-Voc High School teachers attained a category mean of 1.61 and 1.57 respectively, which indicates that they have an *outstanding* work behavior that pertains to the teachers' behavior in the performance of their duties and responsibilities.

Guided by their oath and code of ethics in their profession, teachers possess good attitudes and behavior in their workplace, especially during or in the new normal. They affirm that they religiously do their work performance with loyalty. Ramdani, Marliani, and Rahman (2019) emphasized that employees' work behavior is directly related to the productivity that will result from their work.

d. IPCRF Key Result Areas

d.1 KRA 1 - Content Knowledge and Pedagogy

Table 24. Respondents' Level of Work Performance in Terms of IPCRF Key Result Area 1

KRA 1 - Content Knowledge and Pedagogy	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
Teacher 1-3				
1. I apply knowledge of content within and across curriculum teaching areas.	4.69	Outstanding	4.67	Outstanding

2. I use research-based knowledge and principles of teaching and learning to enhance professional practice.	4.30	Outstanding	4.47	Outstanding
3. I display proficient use of Mother Tongue, Filipino, and English to facilitate teaching and learning.	4.65	Outstanding	4.70	Outstanding
4. I use verbal and non-verbal classroom communication strategies to support learner understanding, participation, engagement, and achievement.	4.74	Outstanding	4.74	Outstanding
Category Mean	4.60	Outstanding	4.65	Outstanding
Master Teacher 1-2				
1. I model effective applications of content knowledge within and across curriculum teaching areas.	4.57	Outstanding	4.44	Outstanding
2. I evaluate with colleagues the effectiveness of teaching strategies that promote learner achievement in literacy and numeracy.	4.00	Very Satisfactory	3.69	Very Satisfactory
3. I model and support colleagues in the proficient use of Mother Tongue, Filipino and English to improve teaching and learning, as well as to develop learners' pride of their language, heritage, and culture.	4.57	Outstanding	4.38	Outstanding
4. I display a wide range of effective verbal and non-verbal classroom communication strategies to support learner understanding, participation, engagement, and achievement.	4.71	Outstanding	4.50	Outstanding
Category Mean	4.46	Outstanding	4.25	Outstanding

Table 24 denotes the respondents' work performance level in terms of IPCRF KRA 1 - Content Knowledge and Pedagogy. As manifested, teachers 1-3 from Tech-Voc and Non-Tech-Voc High Schools acquired a category mean of 4.60 and 4.65 respectively, which means that they have an *outstanding* performance in Content Knowledge and Pedagogy.

Teachers 1-3 from Tech-Voc School got weighted mean values ranging from 4.30 to 4.74 while the Non-Tech-Voc High School teachers garnered weighted mean

responses ranging from 4.47 to 4.74 which means that all the items in KRA 1 are demonstrated by both groups of respondents to an *outstanding* level.

Meanwhile, master teachers 1-2 from both Tech-Voc and Non-Tech-Voc High Schools self-rated themselves *very satisfactory* in the item "evaluate with colleagues the effectiveness of teaching strategies that promote learner achievement in literacy and numeracy" with a mean of 4.00 and 3.69, respectively. All the other items are rated *outstanding*.

Master teachers 1-2 from Tech-Voc and Non-Tech-Voc High Schools got a category mean of 4.46 and 4.25 respectively, which infers that in this KRA, they possess an *outstanding* performance.

In conclusion, both groups of teachers 1-3 and master teachers 1-2 from Tech-Voc and Non-Tech-Voc High Schools manifest an *outstanding* performance in KRA 1 - Content Knowledge and Pedagogy.

As surfaced during the informal conversation, teachers see to it that during classroom instructions, they apply knowledge of content within and across curriculum teaching areas. They connect their lessons to other learning areas so that meaningful learning is achieved by the learners.

d.2 KRA 2 - Learning Environment

Table 25. Respondents' Level of Work Performance in Terms of IPCRF Key Result Area 2

KRA 2 - Learning Environment	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
Teacher 1-3				
1. I establish safe and secure learning environments to enhance learning through the consistent implementation of policies, guidelines, and procedures.	4.78	Outstanding	4.75	Outstanding
2. I maintain learning environments that promote fairness, respect, and care to encourage learning.	4.83	Outstanding	4.80	Outstanding
3. I maintain learning environments to nurture and inspire learners to participate, cooperate and collaborate in continued learning.	4.87	Outstanding	4.70	Outstanding

4. I apply range of successful strategies that maintain learning environments that motivate learners to work productively by assuming responsibility for their own learning.	4.77	Outstanding	4.71	Outstanding
Category Mean	4.81	Outstanding	4.74	Outstanding
Master Teacher 1-2				
1. I exhibit effective strategies that ensure safe and secure learning environments to enhance learning through the consistent implementation of policies, guidelines, and procedures.	4.86	Outstanding	4.38	Outstanding
2. I exhibit effective practices to foster learning environments that promote fairness, respect, and care to encourage learning.	4.86	Outstanding	4.44	Outstanding
3. I work with colleagues to share successful strategies that sustain supportive learning environments that nurture and inspire learners to participate, cooperate and collaborate in continued learning.	4.86	Outstanding	4.44	Outstanding
4. I model successful strategies and support colleagues in promoting learning environments that effectively motivate learners to work productively by assuming responsibility for their own learning.	4.71	Outstanding	4.44	Outstanding
Category Mean	4.82	Outstanding	4.43	Outstanding

Table 25 unveils the respondents' work performance level in terms of IPCRF KRA 2 - Learning Environment. As shown, teachers 1-3 from Tech-Voc and Non-Tech-Voc High Schools acquired a category mean of 4.81 and 4.74 respectively, which indicates that in this domain, they possess an *outstanding* performance.

Teachers 1-3 from Tech-Voc School got weighted mean values ranging from 4.77 to 4.87 while the Non-Tech-Voc High School teachers garnered weighted mean responses ranging from 4.70 to 4.80 which means that all the items in KRA 2 are demonstrated by both groups of respondents to an *outstanding* level.

Meanwhile, master teachers 1-2 from Tech-Voc School got weighted mean values ranging from 4.71 to 4.86 whereas the Non-Tech-Voc High School teachers garnered weighted mean responses ranging from 4.38 to 4.44 which means that all the items in KRA 2 are manifested by both groups of respondents to an *outstanding* level.

Master teachers 1-2 from Tech-Voc and Non-Tech-Voc High Schools got a category mean of 4.82 and 4.43 respectively, which infers that in this KRA, they possess an *outstanding* performance.

In conclusion, both groups of teachers 1-3 and master teachers 1-2 from Tech-Voc and Non-Tech-Voc High Schools demonstrate an *outstanding* performance in KRA 2 - Learning Environment.

Teachers are said to have established and exhibited effective strategies that ensure safe and secure learning environments, promoting fairness, respect, and care to encourage learning. These were affirmed during dialogue with the respondents.

d.3 KRA 3 - Diversity of Learners, Curriculum and Planning, and Assessment and Reporting

Table 26. Respondents' Level of Work Performance in Terms of IPCRF Key Result Area 3

KRA 3 - Diversity of Learners, Curriculum and Planning, and Assessment and Reporting	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
Teacher 1-3				
1. I design, adapt, and implement teaching strategies that are responsive to learners with disabilities, giftedness, and talents.	4.56	Outstanding	4.65	Outstanding
2. I adapt and use culturally appropriate teaching strategies to address the needs of learners from indigenous groups.	4.58	Outstanding	4.60	Outstanding
3. I adapt and implement learning programs that ensure relevance and responsiveness to the needs of all learners.	4.65	Outstanding	4.67	Outstanding
4. I utilize assessment data to inform the modification of teaching and learning practices and programs.	4.68	Outstanding	4.68	Outstanding
Category Mean	4.62	Outstanding	4.65	Outstanding
Master Teacher 1-2				
1. I assist colleagues to design, adapt and implement teaching strategies that are responsive to learners with disabilities, giftedness, and talents.	4.57	Outstanding	4.19	Outstanding

2. I develop and apply teaching strategies to address effectively the needs of learners from indigenous groups.	4.57	Outstanding	4.38	Outstanding
3. I work collaboratively with colleagues to evaluate the design of learning programs that develop the knowledge and skills of learners at different ability levels.	4.71	Outstanding	4.31	Outstanding
4. I work collaboratively with colleagues to analyze and utilize assessment data to modify practices and programs to further support learner progress and achievement.	4.57	Outstanding	4.38	Outstanding
Category Mean	4.61	Outstanding	4.32	Outstanding

Table 26 reveals the respondents' work performance level in terms of IPCRF KRA 3 - Diversity of Learners, Curriculum and Planning, and Assessment and Reporting. As presented, teachers 1-3 from Tech-Voc and Non-Tech-Voc High Schools acquired a category mean of 4.62 and 4.65 respectively, which imply that in this domain, they possess an *outstanding* performance.

Teachers 1-3 from both Tech-Voc and Non-Tech-Voc High Schools rated themselves *outstanding* in all the items with weighted mean values ranging from 4.56 to 4.68 and 4.60 to 4.68 respectively, which mean that all the items in KRA 3 are demonstrated by both group of respondents to an *outstanding* level. They assert that they "design, adapt, and implement teaching strategies that are responsive to learners with disabilities, giftedness, and talents; and utilize assessment data to inform the modification of teaching and learning practices and programs."

Meanwhile, master teachers 1-2 from Tech-Voc School got weighted mean values ranging from 4.57 to 4.71 whereas the Non-Tech-Voc High School teachers garnered weighted mean responses ranging from 4.19 to 4.38 which means that all the items in KRA 3 are manifested by both groups of respondents to an *outstanding* level.

Master teachers 1-2 from Tech-Voc and Non-Tech-Voc High Schools got a category mean of 4.61 and 4.32 respectively, which infers that in this KRA, they possess an *outstanding* performance. They assert "develop and apply teaching strategies to address effectively the needs of learners from indigenous groups, and work collaboratively with colleagues to evaluate the design of learning programs that develop the knowledge and skills of learners at different ability levels."

In conclusion, both groups of teachers 1-3 and master teachers 1-2 from Tech-Voc and Non-Tech-Voc High Schools demonstrate *outstanding* performance in KRA 3 - Diversity of Learners, Curriculum and Planning, and Assessment and Reporting.

Teachers confirm that they do planning, designing, adapting, and implementing teaching strategies to address the needs of learners. They also do regular assessments and reporting for the students to know how far they have gone as to the learning competencies they have to acquire.

d.4 KRA 4 - Community Linkages and Professional Engagement and Personal Growth and Professional Development

Table 27. Respondents' Level of Work Performance in Terms of IPCRF Key Result Area 4

KRA 4 - Community Linkages and Professional Engagement and Personal Growth and Professional Development	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
Teacher 1-3				
1. I maintain learning environments that are responsive to community contexts.	4.73	Outstanding	4.75	Outstanding
2. I review regularly personal teaching practice using existing laws and regulations that apply to the teaching profession and the responsibilities specified in the Code of Ethics for Professional Teachers.	4.62	Outstanding	4.70	Outstanding
3. I comply with implemented school policies and procedures consistently to foster harmonious relationships with learners, parents, and other stakeholders.	4.80	Outstanding	4.77	Outstanding
4. I apply personal philosophy of teaching that is learner-centered.	4.79	Outstanding	4.78	Outstanding
5. I adopt practices that uphold the dignity of teaching as a profession by exhibiting qualities such caring attitude, respect, and integrity.	4.78	Outstanding	4.79	Outstanding
6. I set professional development goals based on the Philippine Professional Standards for Teachers.	4.78	Outstanding	4.73	Outstanding
Category Mean	4.75	Outstanding	4.75	Outstanding
Master Teacher 1-2				
1. I reflect on and evaluate learning environments that are responsive to community contexts.	4.71	Outstanding	4.38	Outstanding

2. I discuss with colleagues teaching and learning practices that apply existing codes, laws and regulations that apply to the teaching profession, and the responsibilities specified in the *Code of Ethics for Professional Teachers.*	4.71	Outstanding	4.38	Outstanding
3. I exhibit commitment to and support teachers in the implementation of school policies and procedures to foster harmonious relationships with learners, parents, and other stakeholders.	4.86	Outstanding	4.50	Outstanding
4. I manifest a learner-centered teaching philosophy in various aspects of practice and support colleagues in enhancing their own learner centered teaching philosophy.	4.86	Outstanding	4.50	Outstanding
5. I identify and utilize personal professional strengths to uphold the dignity of teaching as a profession to help build a positive teaching and learning culture within the school.	4.86	Outstanding	4.63	Outstanding
6. I reflect on the Philippine Professional Standards for Teachers to plan personal professional development goals and assist colleagues in planning and achieving their own goals.	4.86	Outstanding	4.81	Outstanding
Category Mean	4.81	Outstanding	4.53	Outstanding

Table 27 reveals the respondents' work performance level in terms of IPCRF KRA 4 - Community Linkages and Professional Engagement and Personal Growth and Professional Development. As shown in the table, teachers 1-3 from both Tech-Voc and Non-Tech-Voc High Schools attained a category mean of 4.75, which imply that in this domain, they possess an *outstanding* performance.

Teachers 1-3 from both Tech-Voc and Non-Tech-Voc High Schools rated themselves *outstanding* in all the items with weighted mean values ranging from 4.62 to 4.80 and 4.70 to 4.79 respectively, which infer that all the items in KRA 4 are demonstrated by both group of respondents to an *outstanding* level. They confirm that they "review regularly personal teaching practice using existing laws and regulations that apply to the teaching profession and the responsibilities specified in the Code of Ethics for Professional Teachers; and comply with implemented school policies and procedures

consistently to foster harmonious relationships with learners, parents, and other stakeholders."

Moreover, master teachers 1-2 from Tech-Voc School got weighted mean values ranging from 4.71 to 4.86 whereas the Non-Tech-Voc High School teachers garnered weighted mean responses ranging from 4.38 to 4.81 which describe that all the items in KRA 4 are manifested by both group of respondents to an *outstanding* level.

Master teachers 1-2 from Tech-Voc and Non-Tech-Voc High Schools got a category mean of 4.81 and 4.53 respectively, which infer that in this KRA, they possess an *outstanding* performance. They affirm that they "reflect on and evaluate learning environments that are responsive to community contexts; and reflect on the Philippine Professional Standards for Teachers to plan personal professional development goals and assist colleagues in planning and achieving their own goals."

In conclusion, both groups of teachers 1-3 and master teachers 1-2 from Tech-Voc and Non-Tech-Voc High Schools demonstrate *outstanding* performance in KRA 4 - Community Linkages and Professional Engagement and Personal Growth and Professional Development.

Teachers affirm that they keep a learning environment that is responsive to community context. Also, they consistently observe the implemented school policies and procedures to foster harmonious relationships with learners, parents, and other stakeholders. They set professional development goals based on the Philippine Professional Standards for Teachers by attending graduate studies, trainings, and seminars to enrich their knowledge.

d.5 KRA 5 – Plus Factor

Table 28. Respondents' Level of Work Performance in Terms of IPCRF Key Result Area 5

KRA 5 - Plus Factor	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
Teacher 1-3				
I do perform various related works/activities that contribute to the teaching-learning process.	4.80	Outstanding	4.81	Outstanding
Category Mean	4.80	Outstanding	4.81	Outstanding
Master Teacher 1-2				
I do perform various related works/activities that contribute to the teaching-learning process.	4.86	Outstanding	4.56	Outstanding
Category Mean	4.86	Outstanding	4.56	Outstanding

Table 28 reveals the respondents' work performance level in terms of the IPCRF KRA 5 – Plus Factor. As gleaned in the table, teachers 1-3 from Tech-Voc and Non-Tech-Voc High Schools attained a weighted and category mean of 4.80 and 4.81 correspondingly, which infer that in this domain, they possess an *outstanding* performance.

Likewise, master teachers 1-2 from Tech-Voc School got a weighted and category mean of 4.86 whereas the Non-Tech-Voc High School teachers garnered 4.56 which describes that KRA 5 is manifested by both groups of respondents to an *outstanding* level.

In conclusion, both groups of teachers 1-3 and master teachers 1-2 from Tech-Voc and Non-Tech-Voc High Schools demonstrate an *outstanding* performance in KRA 5 - Plus Factor. In this KRA, teachers perform other tasks aside from teaching.

In an informal interview, teachers confirm that they perform different related works/activities that contribute to the teaching-learning process. They mentor and coach students for their co-curricular and extra-curricular activities, mentoring of pre-service teachers, have coordinatorships, chairmanship, pursue post-graduate studies, and others.

Table 29. Summary of the Respondents' IPCRF Key Result Areas

IPCRF Key Result Areas	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
T1 to T3				
KRA 1	4.60	Outstanding	4.65	Outstanding
KRA 2	4.81	Outstanding	4.74	Outstanding
KRA 3	4.62	Outstanding	4.65	Outstanding
KRA 4	4.75	Outstanding	4.75	Outstanding
KRA 5	4.80	Outstanding	4.81	Outstanding
Mean	4.72	Outstanding	4.72	Outstanding
MT1 to MT2				
KRA 1	4.46	Outstanding	4.25	Outstanding
KRA 2	4.82	Outstanding	4.43	Outstanding
KRA 3	4.61	Outstanding	4.32	Outstanding
KRA 4	4.81	Outstanding	4.53	Outstanding
KRA 5	4.86	Outstanding	4.56	Outstanding
Mean	4.71	Outstanding	4.42	Outstanding
IPCRF KRA Overall Mean	4.72	Outstanding	4.57	Outstanding

The summary of the respondents' IPCRF Key Result Areas is presented in Table 29. It is revealed that Teachers 1 to 3 from both Tech-Voc and Non-Tech-Voc Schools got an *outstanding* performance along all the KRAs with weighted means ranging from 4.60 to 4.81 and 4.65 to 4.81, respectively. Meanwhile, Master Teachers 1 to 2 from both

Tech-Voc and Non-Tech-Voc Schools also possess an *outstanding* performance in all KRAs with weighted means ranging from 4.46 to 4.86 and 4.25 to 4.56, respectively.

This implies that teachers do multitasking. As they affirm, aside from doing their primary roles as classroom teachers, they also do related works and activities that could greatly contribute to organizational effectiveness, productivity, and success.

Table 30. Summary of the Respondents' Level of Work Performance

Work Performance	Tech-Voc School Teachers		Non-Tech-Voc School Teachers	
	Weighted Mean	Description	Weighted Mean	Description
a. Task Performance	4.40	Outstanding	4.42	Outstanding
b. Contextual Performance	4.29	Outstanding	4.30	Outstanding
c. IPCRF KRA	4.72	Outstanding	4.57	Outstanding
Overall Mean	**4.47**	**Outstanding**	**4.43**	**Outstanding**

Table 30 shows the summary of the respondents' work performance level. Tech-Voc and Non-Tech-Voc High School teachers possess *outstanding* task and contextual performance, and their IPCRF KRA has an overall mean of 4.47 and 4.43, respectively.

Notably, the teachers' level of work performance along the task and contextual performance, work behavior, and the five Key Result Areas of their IPCRF were all rated *outstanding*. This affirms that during the new normal, even amidst the pandemic, teachers do perform their best to deliver meaningful teaching and learning for the benefit of learners. Truly, they deserve recognition for their act of heroism and for becoming the bridge for the learners to achieve their aspired dreams.

Indeed, teachers have to demonstrate exceptional performance despite the ever-challenging situations. This is asserted by Koopmans et al. (2014) that work performance is very important in determining consistency and maintaining employee work resilience.

Bobek (2002) contended that experienced teachers are a valuable resource for new teachers and may act as mentors for beginning teachers. She strongly encouraged mentoring programs for new teachers.

6. Significant Difference Between the Respondents' Level of Work Performance When Grouped According to Their Profile

a. Tech-Voc School Teachers

a.1 Age

Table 31. Results of the Test of Significant Difference in the Tech-Voc School Teachers' Level of Work Performance When Grouped According to Their Age

Tech-Voc School Teachers' Age and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.00000045	Reject H_0	Significant
b. Contextual Performance	0.00000039	Reject H_0	Significant
c. Work Behavior	0.00000000	Reject H_0	Significant
d. IPCRF: KRA 1	0.00000057	Reject H_0	Significant
KRA 2	0.00000086	Reject H_0	Significant
KRA 3	0.00000062	Reject H_0	Significant
KRA 4	0.00000081	Reject H_0	Significant
KRA 5	0.00000087	Reject H_0	Significant

The results of the test of significant difference in the Tech-Voc School teachers' level of work performance when grouped according to their age are presented in Table 31.

The results reveal that the F-probability values are less than 0.05. For this reason, the null hypothesis is rejected at 0.05 level of significance, thus, there is a significant difference in Tech-Voc School teachers' level of work performance when grouped according to their age. It implies that the teachers have varied level of work performance along task and contextual performance, work behavior, and their IPCRF along the five key results areas when clustered by age.

As indicated by the mean in Appendix C, the teachers who are aged 56-60 are more outstanding in task performance, work behavior, and IPCRF along the key result areas 2, 4, and 5. While the teachers of age 51-55, 41-45, and 51-60 are more outstanding in contextual performance, and key result areas 1 and 3, respectively.

Relative to these findings, Anand (2020) found out that respondents differ in job characteristics and work performance based on their *age* where 'F' values are significant for most of the job characteristics dimension viz., skill variety, task significance, and

feedback along with total job characteristics as well as all the three dimensions of work performance viz., task performance, contextual performance, and counterproductive work behavior.

a.2 Sex

Table 32. Results of the Test of Significant Difference in the Tech-Voc School Teachers' Level of Work Performance When Grouped According to Their Sex

Tech-Voc School Teachers' Sex and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.00010895	Reject H_0	Significant
b. Contextual Performance	0.00139500	Reject H_0	Significant
c. Work Behavior	0.00118400	Reject H_0	Significant
d. IPCRF: KRA 1	0.00169730	Reject H_0	Significant
KRA 2	0.00115790	Reject H_0	Significant
KRA 3	0.00196050	Reject H_0	Significant
KRA 4	0.00018520	Reject H_0	Significant
KRA 5	0.00147370	Reject H_0	Significant

Table 32 presents the results of the test of significant differences in the Tech-Voc School teachers' level of work performance when grouped according to their sex.

The results reveal that the P-values of F are less than 0.05, hence, the null hypothesis is rejected at a 0.05 significance level, meaning that there is a significant difference in Tech-Voc School teachers' level of work performance when grouped according to their sex. It shows that the male teachers differ in their work performance along task and contextual performance, work behavior, and the five key result areas of IPCRF from that of the female teachers. It is noted that the female teachers are more outstanding in task performance, and the key results in areas 1, 2, 3, and 5, while male teachers are more outstanding in contextual performance, work behavior, and key results in Area 4.

This contradicts Gaffud's (2008) and Gatan's (2001) findings that teaching performance is not significantly associated with sex.

a.3 Civil Status

Table 33. Results of the Test of Significant Difference in the Tech-Voc School Teachers' Level of Work Performance When Grouped According to Their Civil Status

Tech-Voc School Teachers' Civil Status and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.00011490	Reject H_0	Significant
b. Contextual Performance	0.00003608	Reject H_0	Significant
c. Work Behavior	0.00001341	Reject H_0	Significant
d. IPCRF: KRA 1	0.00005770	Reject H_0	Significant
KRA 2	0.00011049	Reject H_0	Significant
KRA 3	0.00006723	Reject H_0	Significant
KRA 4	0.00009513	Reject H_0	Significant
KRA 5	0.00010790	Reject H_0	Significant

The results of the test of significant difference in the Tech-Voc School teachers' level of work performance when grouped according to their civil status are presented in Table 33.

It is evident from the results that the P-values of F are less than 0.05. This signifies the rejection of the null hypothesis at 0.05 level of significance which implies that there is a significant difference in the Tech-Voc School teachers' level of work performance when grouped according to their civil status. The teachers have varied work performance levels along with task and contextual performance, work behavior, and the five key result areas of IPCRF when classified by civil status. As indicated by the mean in Appendix C, it further infers that the married teachers are more outstanding in all the areas of work performance.

The results negate Gaffud's (2008) and Gatan's (2001) findings that teaching performance is not significantly associated with civil status.

a.4 Highest Educational Attainment

Table 34. Results of the Test of Significant Difference in the Tech-Voc School Teachers' Level of Work Performance When Grouped According to Their Highest Educational Attainment

Tech-Voc School Teachers' Highest Educational Attainment and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.0000	Reject H_0	Significant

b. Contextual Performance	0.0000	Reject H_0	Significant
c. Work Behavior	0.0000	Reject H_0	Significant
d. IPCRF: KRA 1	0.0000	Reject H_0	Significant
KRA 2	0.0000	Reject H_0	Significant
KRA 3	0.0000	Reject H_0	Significant
KRA 4	0.0000	Reject H_0	Significant
KRA 5	0.0000	Reject H_0	Significant

Table 34 reflects the results of the test of significant differences in the Tech-Voc School teachers' level of work performance when grouped according to their highest educational attainment.

The results show that the F-probability values are less than 0.05 thereby rejecting the null hypothesis at 0.05 level of significance. As a result, there is a significant difference in the Tech-Voc School teachers' level of work performance along task and contextual performance, work behavior, and the five key result areas of IPCRF when grouped according to highest educational attainment. As noted, teachers who are doctorate holders are more outstanding in all aspects of work performance.

Results affirm the findings of Anand (2020) that respondents differ in their job characteristics and work performance based on their educational qualifications/attainment.

a.5 Teaching Position

Table 35. Results of the Test of Significant Difference in the Tech-Voc School Teachers' Level of Work Performance When Grouped According to Their Teaching Position

Tech-Voc School Teachers' Teaching Position and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.0000	Reject H_0	Significant
b. Contextual Performance	0.0000	Reject H_0	Significant
c. Work Behavior	0.0000	Reject H_0	Significant
d. IPCRF: KRA 1	0.0000	Reject H_0	Significant
KRA 2	0.0000	Reject H_0	Significant
KRA 3	0.0000	Reject H_0	Significant
KRA 4	0.0000	Reject H_0	Significant
KRA 5	0.0000	Reject H_0	Significant

The results of the test of significant difference in the Tech-Voc School teachers' level of work performance, when grouped according to their teaching position, are reflected in Table 35.

It is evident from the results that the F-probability values are less than 0.05, hence, the null hypothesis is rejected at a 0.05 significance level. Thus, there is a significant difference in the Tech-Voc School teachers' level of work performance when grouped according to their teaching position. It shows that the teachers have different work

performance levels along task and contextual performance, work behavior, and the five key result areas of IPCRF when clustered by their teaching position. As indicated by the mean in Appendix C, those with Master Teacher 2 positions are more outstanding in their work performance level along task and contextual performance and the five key result areas of IPCRF, while the master teachers 1 are more outstanding on their work performance along work behavior.

The results affirm Gaffud's (2008) finding that teachers' teaching performance is significantly associated with their position or classification as teachers.

a.6 Length of Service

Table 36. Results of the Test of Significant Difference in the Tech-Voc School Teachers' Level of Work Performance When Grouped According to Their Length of Service

Tech-Voc School Teachers' Length of Service and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.00000039	Reject H_0	Significant
b. Contextual Performance	0.00000032	Reject H_0	Significant
c. Work Behavior	0.00000000	Reject H_0	Significant
d. IPCRF: KRA 1	0.00000042	Reject H_0	Significant
KRA 2	0.00000067	Reject H_0	Significant
KRA 3	0.00000048	Reject H_0	Significant
KRA 4	0.00000061	Reject H_0	Significant
KRA 5	0.00000065	Reject H_0	Significant

Table 36 discloses the results of the test of significant differences in the Tech-Voc School teachers' level of work performance when grouped according to their length of service.

The results reveal that the P-values of F are less than 0.05 which leads to the rejection of the null hypothesis at 0.05 level of significance. Therefore, there is a significant difference in the Tech-Voc School teachers' level of work performance when grouped according to their length of service. It indicates that the teachers perform differently in their work in terms of task and contextual performance, work behavior, and the five key result areas of IPCRF when they are categorized by their length of service. The teachers who have served for 16-20 years are more outstanding on task and contextual performance, while the teachers who worked for 26-30 years and 11-15 years have more outstanding work performance as to work behavior and the key result area 1, respectively. Teachers who have been in the service for 31-35 years have more outstanding work performance in terms of IPCRF along the key result areas 2, 3, 4, and 5.

The findings contradict Anand's (2020) conclusion that there is no significant difference in respondents' work performance based on their experience or the length rendered in service.

b. Non-Tech-Voc School Teachers

b.1 Age

Table 37. Results of the Test of Significant Difference in the Non-Tech-Voc School Teachers' Level of Work Performance When Grouped According to Their Age

Non-Tech-Voc School Teachers' Age and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.0000	Reject H_0	Significant
b. Contextual Performance	0.0000	Reject H_0	Significant
c. Work Behavior	0.0000	Reject H_0	Significant
d. IPCRF: KRA 1	0.0000	Reject H_0	Significant
KRA 2	0.0000	Reject H_0	Significant
KRA 3	0.0000	Reject H_0	Significant
KRA 4	0.0000	Reject H_0	Significant
KRA 5	0.0000	Reject H_0	Significant

The results of the test of significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their age are disclosed in Table 37.

It is evident from the table that the F-probability values are less than 0.05 which means the rejection of the null hypothesis at 0.05 significance level. Thus, there is a significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their age. It shows that the teachers vary in their work performance level along task and contextual performance, work behavior, and the five key result areas of IPCRF when clustered by age. As evidenced by the mean in Appendix C, the teachers who are aged 21-25 have more outstanding work performance on contextual, and the key result areas 2 and 4 of IPCRF. Those of age 26-30 perform more outstandingly in key result area 1 whereas teachers whose age are 36-40 are more outstanding in their work performance on work behavior and key result area 5 of the IPCRF. Teachers who belong to the age bracket 41-45 perform more outstandingly in their work on task performance and the key result area 3 of IPCRF.

Results are related to that of Anand's (2020) findings that respondents differ in job characteristics and work performance based on their *age* where 'F' values are significant for most of the job characteristics dimension viz., skill variety, task significance, and feedback along with total job characteristics as well as all the three dimensions of work performance viz., task performance, contextual performance, and counterproductive work behavior.

b.2 Sex

Table 38. Results of the Test of Significant Difference in the Non-Tech-Voc High School Teachers Level of Work Performance When Grouped According to Their Sex

Non-Tech-Voc High School Teachers' Sex and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.000098	Reject H_0	Significant
b. Contextual Performance	0.000760	Reject H_0	Significant
c. Work Behavior	0.001391	Reject H_0	Significant
d. IPCRF: KRA 1	0.000088	Reject H_0	Significant
KRA 2	0.000227	Reject H_0	Significant
KRA 3	0.000593	Reject H_0	Significant
KRA 4	0.000048	Reject H_0	Significant
KRA 5	0.000358	Reject H_0	Significant

Table 38 reveals the results of the test of significant differences in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their sex.

The results reveal that the P-values of F are less than 0.05, hence, the null hypothesis is rejected at a 0.05 level of significance. Thus, there is a significant difference in Non-Tech-Voc High School teachers' level of work performance when grouped according to their sex. It implies that the male teachers differ in their work performance level on task and contextual performance, work behavior, and the five key result areas of IPCRF from that of the female teachers. The study further shows that male teachers perform more outstandingly in their work along task and contextual performance, work behavior, and the key result areas 1, 2, 4, and 5 of IPCRF, while female teachers are more outstanding on key result area 3 of IPCRF.

This is in contrast with Gaffud's (2008) and Gatan's (2001) findings that teaching performance is not significantly associated with sex.

b.3 Civil Status

Table 39. Results of the Test of Significant Difference in the Non-Tech-Voc High School Teachers' Level of Work Performance When Grouped According to Their Civil Status

Non-Tech-Voc High School Teachers' Civil Status and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.000028	Reject H_0	Significant
b. Contextual Performance	0.000013	Reject H_0	Significant
c. Work Behavior	0.000001	Reject H_0	Significant
d. IPCRF: KRA 1	0.000079	Reject H_0	Significant
KRA 2	0.000068	Reject H_0	Significant
KRA 3	0.000063	Reject H_0	Significant
KRA 4	0.000071	Reject H_0	Significant
KRA 5	0.000085	Reject H_0	Significant

The results of the test of significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their civil status are presented in Table 39.

It is evident from the results that the probability values of F are less than 0.05. This signifies the rejection of the null hypothesis at a 0.05 significance level which means that there is a significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their civil status. It shows that the teachers have varied work performance levels along task and contextual performance, work behavior, and the five key result areas of IPCRF when grouped by their civil status. As evidenced by the mean in Appendix C, the single teachers perform more outstandingly on task and contextual performance, and the five key result areas of IPCRF, while the married teachers are more outstanding on work behavior.

The results oppose Gaffud's (2008) and Gatan's (2001) findings which revealed that teaching performance is not significantly associated with civil status.

b.4 Highest Educational Attainment

Table 40. Results of the Test of Significant Difference in the Non-Tech-Voc High School Teachers' Level of Work Performance When Grouped According to Their Highest Educational Attainment

Non-Tech-Voc High School Teachers' Highest Educational Attainment and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.0000	Reject H_0	Significant
b. Contextual Performance	0.0000	Reject H_0	Significant
c. Work Behavior	0.0000	Reject H_0	Significant
d. IPCRF: KRA 1	0.0000	Reject H_0	Significant
KRA 2	0.0000	Reject H_0	Significant
KRA 3	0.0000	Reject H_0	Significant
KRA 4	0.0000	Reject H_0	Significant
KRA 5	0.0000	Reject H_0	Significant

Table 40 reflects the results of the test of significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their highest educational attainment.

The results reveal that the P-values of F are less than 0.05, hence, the null hypothesis is rejected at a 0.05 level of significance. Thus, there is a significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their highest educational attainment. It shows that the teachers have varied work performance levels on task and contextual performance, work behavior, and the five key result areas of IPCRF when categorized by their highest educational attainment. As appended, teachers who are bachelor's degree holders are more outstanding in their performance on work behavior, contextual performance, and the key result area 1 of the

IPCRF, while those who are master's degree holders perform more outstandingly in their work along task performance, and the key result areas 2, 3, and 4 of IPCRF. The doctorate holders are more outstanding in their work performance on work behavior and the key result area 5 of the IPCRF.

The study's findings affirm Anand's (2020) conclusion that respondents differ in job characteristics and work performance based on their educational qualifications.

b.5 Teaching Position

Table 41. Results of the Test of Significant Difference in the Non-Tech-Voc High School Teachers' Level of Work Performance When Grouped According to Teaching Position

Non-Tech-Voc High School Teachers' Teaching Position and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.0000	Reject H_0	Significant
b. Contextual Performance	0.0000	Reject H_0	Significant
c. Work Behavior	0.0000	Reject H_0	Significant
d. IPCRF: KRA 1	0.0000	Reject H_0	Significant
KRA 2	0.0000	Reject H_0	Significant
KRA 3	0.0000	Reject H_0	Significant
KRA 4	0.0000	Reject H_0	Significant
KRA 5	0.0000	Reject H_0	Significant

The results of the test of significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their teaching position are reflected in Table 41.

It is evident from the results that the probability F-values are less than 0.05. This signifies the rejection of the null hypothesis at 0.05 level of significance, hence, there is a significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their teaching position. The teachers have different work performance levels on task and contextual performance, work behavior, and the five key result areas of IPCRF. Those who hold the Teacher 2 position are more outstanding on task and contextual performance, and the key result areas 1, 2, 3, and 5 of IPCRF, while those with Teacher 1 and Teacher 3 positions perform more outstandingly in their work along key result area 4 of IPCRF, and work behavior, respectively.

The results relate to Gaffud's (2008) finding that teachers' teaching performance is significantly associated with their position or classification as teachers.

b.6 Length of Service

Table 42. Results of the Test of Significant Difference in the Non-Tech-Voc High School Teachers' Level of Work Performance When Grouped According to Length of Service

Non-Tech-Voc High School Teachers' Length of Service and the Following Work Performance	Probability of F	Decision	Remarks
a. Task Performance	0.00000002	Reject H_0	Significant
b. Contextual Performance	0.00000001	Reject H_0	Significant
c. Work Behavior	0.00000000	Reject H_0	Significant
d. IPCRF: KRA 1	0.00000002	Reject H_0	Significant
KRA 2	0.00000003	Reject H_0	Significant
KRA 3	0.00000003	Reject H_0	Significant
KRA 4	0.00000002	Reject H_0	Significant
KRA 5	0.00000004	Reject H_0	Significant

Table 42 exhibits the results of the test of significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their length of service.

The results show that the P-values of F are less than 0.05. For this reason, the null hypothesis is rejected at a 0.05 significance level, meaning, there is a significant difference in the Non-Tech-Voc High School teachers' level of work performance when grouped according to their length of service. It implies that the teachers differ from each other in their work performance level on task and contextual performance, work behavior, and the five key result areas of IPCRF when classified by their length of service. The teachers who have taught for 11-15 years perform more outstandingly on task and contextual performance, and the key result areas 4 and 5 of IPCRF. Those who have served for 1-5 years are more outstanding on the key result areas 1, 2, and 3 of IPCRF, whereas the teachers who have worked for 36-40 years are more outstanding on work behavior.

These results differ from that of Anand's (2020) findings that there is no significant difference in respondents' work performance based on their *experience* or the length rendered in the service.

7. Significant Difference Between Tech-Voc and Non-Tech-Voc School Teachers' Level of Work Performance

Table 43. Results of the Test of Significant Difference in the Tech-Voc and Non-Tech-Voc School Teachers' Level of Work Performance

Work Performance	Mean		Probability of t	Decision	Remarks
	Tech-Voc School Teachers	Non-Tech-Voc High School Teachers			
a. Task Performance	4.40	4.42	0.6741	Accept H_0	Not Significant

b. Contextual Performance	4.29	4.30	0.9815	Accept H_0	Not Significant
c. Work Behavior	1.61	1.57	0.5675	Accept H_0	Not Significant
d. IPCRF: KRA 1	4.59	4.61	0.6336	Accept H_0	Not Significant
KRA 2	4.81	4.71	0.0174	Reject H_0	Significant
KRA 3	4.62	4.62	0.9518	Accept H_0	Not Significant
KRA 4	4.75	4.73	0.6710	Accept H_0	Not Significant
KRA 5	4.80	4.79	0.7256	Accept H_0	Not Significant

The results of the test of significant difference in the Tech-Voc and Non-Tech-Voc School teachers' level of work performance are disclosed in Table 43.

It is revealed that the t-probability values are greater than 0.05 except for the key result are 2. This signifies the acceptance of the null hypothesis at 0.05 level of significance, therefore, there is no significant difference in the Tech-Voc and Non-Tech-Voc High School teachers' level of work performance along task and contextual performance, work behavior, and the key result areas 1, 3, 4, and 5 of IPCRF. It indicates that the two groups of teachers do not differ from each other in their work performance levels in the aforementioned areas. It states further that the two groups of teachers have similar work performance levels in the said areas.

However, there is a significant difference in the Tech-Voc and Non-Tech-Voc High School teachers' level of work performance on the key result area 2 of their IPCRF which is on Learning Environment. Hence, the null hypothesis is rejected at a 0.05 significance level. It implies that the two groups of teachers vary in their work performance level in terms of Learning Environment, key result area 2 in their IPCRF. It further shows that the Tech-Voc Teachers perform better in their work performance on KRA 2 than the Non-Tech-Voc High School teachers.

The current study shows no difference in work performance among groups of respondents. They both highly perform in their work. Relative to this, Baluyos, Rivera, and Baluyos (2019) revealed that the teachers are highly satisfied with their job and their work performance is very satisfactory.

8. Significant Relationship Between the Respondents' Resilience and Their Work Performance

a. Tech-Voc School Teachers

a.1 Personal Competencies and Persistence versus Work Performance

Table 44. Results of the Test of Significant Relationship Between the Tech-Voc School Teachers' Resilience in Terms of Personal Competencies and Persistence and their Work Performance

Tech-Voc School Teachers' Resilience in Terms of Personal Competencies and Persistence and the Following Work Performance	Probability of r	Decision	Remarks
a. Task Performance	0.00000000	Reject H_0	Significant
b. Contextual Performance	0.00000000	Reject H_0	Significant
c. Work Behavior	0.00000040	Reject H_0	Significant
d. IPCRF: KRA 1	0.00000300	Reject H_0	Significant
KRA 2	0.00000050	Reject H_0	Significant
KRA 3	0.00002380	Reject H_0	Significant
KRA 4	0.00000043	Reject H_0	Significant
KRA 5	0.00001180	Reject H_0	Significant

The results of the test of a significant relationship between the Tech-Voc School teachers' resilience in terms of personal competencies and persistence and their work performance are exhibited in Table 44.

It is evident from the results that the r-probability values are less than 0.05, hence, the null hypothesis is rejected at a 0.05 level of significance. Thus, there is a significant relationship between the Tech-Voc School teachers' resilience in terms of personal competencies and persistence and their work performance. It shows that the teachers' resilience in personal competencies and persistence strongly affect their task and contextual performance, work behavior, and the five key result areas of IPCRF.

Teachers' level of resilience is optimum despite the challenging situation they are facing during the new normal. In relation to this, Gibbs and Miller (2014) contended that lecturers are resilient and there should not be too much worry about their commitment to their teaching. They are very likely to be able to adapt to the new teaching situation.

a.2 Family Cohesion versus Work Performance

Table 45. Results of the Test of Significant Relationship Between the Tech-Voc School Teachers' Resilience in Terms of Family Cohesion and their Work Performance

Tech-Voc School Teachers' Resilience in Terms of Family Cohesion and the Following Work Performance	Probability of r	Decision	Remarks
a. Task Performance	0.00000004	Reject H_0	Significant
b. Contextual Performance	0.00002910	Reject H_0	Significant
c. Work Behavior	0.00002616	Reject H_0	Significant
d. IPCRF: KRA 1	0.00062120	Reject H_0	Significant
KRA 2	0.00000665	Reject H_0	Significant
KRA 3	0.00115000	Reject H_0	Significant
KRA 4	0.00064635	Reject H_0	Significant
KRA 5	0.00676200	Reject H_0	Significant

Table 45 presents the results of the test of a significant relationship between the Tech-Voc School teachers' resilience in terms of family cohesion and their work performance.

The results reflect that the P-values of r are less than 0.05 which signifies the rejection of the null hypothesis at 0.05 significance level. Therefore, there is a significant relationship between the Tech-Voc School teachers' resilience in terms of family cohesion and their work performance. It indicates that the family cohesion resilience of the teachers has a strong effect on their work performance on task and contextual performance, work behavior, and the five key result areas of their IPCRF.

Strong family connection helps individuals maintain their resilience in their work. Drew and Sosnowski (2019) recount that teachers use relationships with colleagues, students, and school leaders to endure challenges. Hence, better teaching performance is carried out.

a.3 Social Skills and Peer Support versus Work Performance

Table 46. Results of the Test of Significant Relationship Between the Tech-Voc School Teachers'

Tech-Voc School Teachers' Resilience in Terms of Social Skills and Peer Support and the Following Work Performance	Probability of r	Decision	Remarks
a. Task Performance	0.00000000	Reject H_0	Significant
b. Contextual Performance	0.00000000	Reject H_0	Significant
c. Work Behavior	0.01485500	Reject H_0	Significant
d. IPCRF: KRA 1	0.00019580	Reject H_0	Significant
KRA 2	0.00112922	Reject H_0	Significant
KRA 3	0.02100170	Reject H_0	Significant
KRA 4	0.01269000	Reject H_0	Significant
KRA 5	0.00316070	Reject H_0	Significant

The results of the test of a significant relationship between the Tech-Voc School teachers' resilience in terms of social skills and peer support and their work performance are presented in Table 46.

It is revealed from the results that the r-probability values are less than 0.05 which leads to the rejection of the null hypothesis at 0.05 level of significance. As a result, there is a significant relationship between the Tech-Voc School teachers' resilience in terms of social skills and peer support and their work performance. It shows that the teachers' work performance on task and contextual performance, work behavior, and the five key result areas of their IPCRF are strongly affected by their social skills and peer support resilience.

Peer support is vital to every individual in maintaining resilience and good work performance. Luthar (2006) affirms that resilience is the product of healthy relationships

between coworkers. Accordingly, Stuart et al. (2012) found a noteworthy relationship between resilient teachers and effective teaching.

a.4 Spiritual Influences versus Work Performance

Table 47. Results of the Test of Significant Relationship Between the Tech-Voc School Teachers' Resilience in Terms of Spiritual Influences and their Work Performance

Tech-Voc School Teachers' Resilience in Terms of Spiritual Influences and the Following Work Performance	Probability of r	Decision	Remarks
a. Task Performance	0.00000087	Reject H_0	Significant
b. Contextual Performance	0.00000591	Reject H_0	Significant
c. Work Behavior	0.00024720	Reject H_0	Significant
d. IPCRF: KRA 1	0.00000005	Reject H_0	Significant
KRA 2	0.00060330	Reject H_0	Significant
KRA 3	0.00027200	Reject H_0	Significant
KRA 4	0.00042710	Reject H_0	Significant
KRA 5	0.00820300	Reject H_0	Significant

Table 47 exhibits the results of the test of a significant relationship between the Tech-Voc School teachers' resilience in terms of spiritual influences and their work performance.

The results reveal that the P-values of r are less than 0.05. For this reason, the null hypothesis is rejected at a 0.05 significance level. As a result, there is a significant relationship between the Tech-Voc School teachers' resilience in terms of spiritual influences and their work performance. It states that the work performance of the teachers along with task and contextual performance, work behavior, and the five key result areas of their IPCRF are strongly influenced by their spiritual resilience.

Spirituality allows individuals to be resilient even in times of extreme life challenges. Drew and Sosnowski (2019) claimed that if a teacher is resilient, despite ever-changing contexts and situations where he or she works, the teacher is likely to be able to maintain his/her quality teaching performance. Steffy, et al.(2000) concluded that resilient teachers exhibit characteristics that are positive, professional, and reflective, in their teaching careers.

b. Non-Tech-Voc School Teachers

b.1 Personal Competencies and Persistence versus Work Performance

Table 48. Results of the Test of Significant Relationship Between the Non-Tech-Voc School Teachers' Resilience in Terms of Personal Competencies and Persistence and their Work Performance

Non-Tech-Voc School Teachers' Resilience in Terms of Personal Competencies and	Probability of r	Decision	Remarks

Persistence and the Following Work Performance			
a. Task Performance	0.00000000	Reject H_0	Significant
b. Contextual Performance	0.00003000	Reject H_0	Significant
c. Work Behavior	0.01928000	Reject H_0	Significant
d. IPCRF: KRA 1	0.00042240	Reject H_0	Significant
KRA 2	0.01486000	Reject H_0	Significant
KRA 3	0.00000000	Reject H_0	Significant
KRA 4	0.01634400	Reject H_0	Significant
KRA 5	0.00010780	Reject H_0	Significant

The results of the test of a significant relationship between the Non-Tech-Voc High School teachers' resilience in terms of personal competencies and persistence and their work performance are exhibited in Table 48.

It is reflected from the results that the r-probability values are less than 0.05, hence, the null hypothesis is rejected at a 0.05 level of significance. Thus, there is a significant relationship between the Non-Tech-Voc High School teachers' resilience in terms of personal competencies and persistence and their work performance. It shows that the teachers' work performance along the task and contextual performance, work behavior, and the five key result areas of IPCRF are strongly affected by their resilience in personal competencies and persistence.

Relatively, Gibbs and Miller (2014) conveyed that there is a need to ensure that teachers are resilient as this quality in teachers is central to well-motivated, consistent, and effective teaching.

b.2 Family Cohesion versus Work Performance

Table 49. Results of the Test of Significant Relationship Between the Non-Tech-Voc High School Teachers' Resilience in Terms of Family Cohesion and their Work Performance

Non-Tech-Voc High School Teachers' Resilience in Terms of Family Cohesion and the Following Work Performance	Probability of r	Decision	Remarks
a. Task Performance	0.00048000	Reject H_0	Significant
b. Contextual Performance	0.03013900	Reject H_0	Significant
c. Work Behavior	0.01455900	Reject H_0	Significant
d. IPCRF: KRA 1	0.01078800	Reject H_0	Significant
KRA 2	0.00748900	Reject H_0	Significant
KRA 3	0.00000000	Reject H_0	Significant
KRA 4	0.04419000	Reject H_0	Significant
KRA 5	0.00062040	Reject H_0	Significant

Table 49 discloses the results of the test of a significant relationship between the Non-Tech-Voc High School teachers' resilience in terms of family cohesion and their work performance.

The results show that the probability values of r are less than 0.05 signifying the rejection of the null hypothesis at 0.05 significance level. Therefore, there is a significant relationship between the Non-Tech-Voc High School teachers' resilience in terms of family cohesion and their work performance. The teachers' family cohesion resilience has a strong bearing on their work performance along with task and contextual performance, work behavior, and the five key result areas of their IPCRF.

Strong family ties benefit individuals to further maintain their resilience, especially in their work. Drew and Sosnowski (2019) relate that teachers use relationships with colleagues, students, and school leaders to endure challenges. Hence, better teaching performance is carried out.

b.3 Social Skills and Peer Support versus Work Performance

Table 50. Results of the Test of Significant Relationship Between the Non-Tech-Voc High School Teachers' Resilience in Terms of Social Skills and Peer Support and their Work Performance

Non-Tech-Voc High School Teachers' Resilience in Terms of Social Skills and Peer Support and the Following Work Performance	Probability of r	Decision	Remarks
a. Task Performance	0.00000000	Reject H_0	Significant
b. Contextual Performance	0.00000000	Reject H_0	Significant
c. Work Behavior	0.00000400	Reject H_0	Significant
d. IPCRF: KRA 1	0.00000200	Reject H_0	Significant
KRA 2	0.00000400	Reject H_0	Significant
KRA 3	0.00000000	Reject H_0	Significant
KRA 4	0.00036000	Reject H_0	Significant
KRA 5	0.00012900	Reject H_0	Significant

The results of the test of a significant relationship between the Non-Tech-Voc High School teachers' resilience in terms of social skills and peer support and their work performance are disclosed in Table 50.

The table shows that the P-values of r are less than 0.05 which means that the null hypothesis is rejected at 0.05 level of significance. As a result, there is a significant relationship between the Non-Tech-Voc High School teachers' resilience in terms of social skills and peer support and their work performance. It indicates that the teachers' social skills and peer support strongly affect their task and contextual performance, work behavior, and the five key result areas of their IPCRF.

Botou et al. (2017) confirm that positive relationships with colleagues help teachers maintain their resilience during the economic crisis. Lippman and Schmitz (2013) noted in their research investigation that teachers with a high degree of resiliency will boost school performance. The greater the teacher's resiliency, the more dedicated he or she becomes to direct his or her efforts toward school-wide changes, considering the many demands of his or her job. This, too, may affect teachers' work performance.

b.4 Spiritual Influences versus Work Performance

Table 51. Results of the Test of Significant Relationship Between the Non-Tech-Voc High School Teachers' Resilience in Terms of Spiritual Influences and their Work Performance

Non-Tech-Voc High School Teachers' Resilience in Terms of Spiritual Influences and the Following Work Performance	Probability of r	Decision	Remarks
a. Task Performance	0.00000110	Reject H_0	Significant
b. Contextual Performance	0.00134000	Reject H_0	Significant
c. Work Behavior	0.02848000	Reject H_0	Significant
d. IPCRF: KRA 1	0.00032240	Reject H_0	Significant
KRA 2	0.00000000	Reject H_0	Significant
KRA 3	0.00000306	Reject H_0	Significant
KRA 4	0.00000000	Reject H_0	Significant
KRA 5	0.00000000	Reject H_0	Significant

Table 51 presents the results of the test of the significant relationship between the Non-Tech-Voc High School teachers' resilience in terms of spiritual influences and their work performance.

The results show that the r-probability values are less than 0.05, hence, the null hypothesis is rejected at 0.05 level of significance. Thus, there is a significant relationship between the Non-Tech-Voc High School teachers' resilience in terms of spiritual influences and their work performance. It implies that the teachers' task and contextual performance, work behavior, and the five key result areas of their IPCRF are strongly influenced by their spiritual resilience.

Strong faith helps individuals gain resilience even in hard situations. Bobek (2002) emphasized the promotion of teacher resiliency to enhance teacher effectiveness, heighten teacher satisfaction, and better prepare teachers to adjust to education's ever-changing conditions. Furthermore, Sutriyantono & Rubin (2013) concluded that teachers' performance is improved through attitude modification, work motivation, and favorable organizational culture in schools.

This study reveals that resilience is associated with work performance, hence, the need to elevate and strengthen teachers' resilience for them to keep an excellent teaching performance. Such a result affirms Fonte et al.'s (2021) findings that there is a significant relationship between the level of resilience and the work performance of public secondary school teachers, therefore, resilience affects teachers' work performance. When teachers demonstrate a high level of resilience, better teaching performance is expected. In addition, Greenfield (2015) and Mansfield et al. (2016) disclosed that teacher resilience is related to teacher self-efficacy, job satisfaction, teacher effectiveness, and motivation. Similarly, Koopmans et al.(2014) found out that work performance is very important in determining consistency and maintaining employee work resilience. Finally, Briner &

Dewberry (2007) indicate that improving school performance has a positive impact on school wellbeing, and improving teacher wellbeing also improves student outcomes.

Conclusions

This study concludes that most of the Tech-Voc and Non-Tech-Voc teachers are middle-aged, predominantly female, married, possess master's units, and have relatively short tenures. The respondents demonstrate high personal competencies and persistence, exhibiting very high levels of resilience in family cohesion, social skills and peer support, and spiritual influences. Notably, the level of resilience among Tech-Voc and Non-Tech-Voc teachers significantly varies based on their profile. While their resilience differs in personal competencies and persistence, it does not vary in terms of family cohesion, social skills peer support, and spiritual influences. Both groups of teachers exhibit outstanding work performance in task and contextual performance, work behavior, and all key results areas of their Individual Performance Commitment and Review Form (IPCRF).

The study also finds that work performance is significantly influenced by age, sex, civil status, educational background, position, and years in service. Variations in work performance are observed in IPCRF Key Result Area (KRA) 2, whereas similarities are noted in task and contextual performance, work behavior, and KRAs 1, 3, 4, and 5 of the IPCRF. Additionally, Tech-Voc and Non-Tech-Voc teachers perform exceptionally well in their primary teaching roles, extra responsibilities, attitudes towards work, and various KRAs of the IPCRF, which encompass Content Knowledge and Pedagogy, Diversity of Learners, Curriculum and Planning, Assessment and Reporting, Community Linkages and Professional Engagement, and Personal Growth and Professional Development, as well as the Plus Factor. However, their performance is not outstanding in the area of the Learning Environment.

Recommendations

Based on the conclusion drawn, the study recommends the following:

1. Teachers' resilience should always be sustained through genuine care and support of the school administration especially the department to always look after their general welfare since they are the educational frontline in the system and are the prime movers of the educative process.

2. Seasoned teachers, especially the master teachers should provide technical assistance and become coaches and mentors to the novice teachers to share their expertise and their best classroom practices to enhance their work performance.

3. Teachers are encouraged to attend capacity-building seminars or related trainings to elevate, strengthen, and sustain a high resilience level since it is a significant factor that influences teachers' professional performance.

4. The proposed learning and development program for teachers should be reviewed, considered, and implemented to ensure a very high level of resilience and outstanding work performance among educators.

5. Further studies can be carried out to look into other factors associated with resilience impacting instructional performance.

Compliance with Ethical Standards

As the author of this study, I declare my adherence to ethical standards. Informed consent was obtained, and respondents could withdraw at any time. Anonymity was maintained, and their well-being was safeguarded. There were no conflicts of interest, and plagiarism was strictly avoided. I ensured an unbiased interpretation of the findings, and the results were intended solely for research purposes.

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TEACHING LITERATURE: THE CASE OF JUNIOR HIGH SCHOOL TEACHERS IN A NATIONAL HIGH SCHOOL

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ABSTRACT

This multiple case study explored the struggles and challenges encountered by the Junior High School teachers who are teaching literature in a national high school. I conducted this study with the use of multiple case study research design with in-depth interviews as the main method of collecting data. Four teachers served as the participants of this study. The common struggles and challenges encountered by my participants were lack of available reference materials, learners' attitude toward the subject, and learners' diverse cognitive capacity. Their coping mechanisms included the provision of learning materials, reliance on internet sources, conduct of reading remediation, use of differentiated instruction, integration of cooperative learning, and undergoing training and seminars. It is recommended to properly allocate a budget to send teachers to training and seminars and to provide them with technical assistance. Teachers also have to exert effort to address the needs of the students to attain the mission and vision of the Department of Education.

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Keywords: *Struggles, Challenges, Coping Mechanisms, Literature, Teaching Literature, Tacurong City, Philippines*

INTRODUCTION

Being an English teacher for thirteen years now, I have been experiencing many struggles and challenges in teaching literature. Learners passively participate in class

discussions. Some learners are experiencing difficulty in reading the text. Most of the time, learners are not motivated to listen to class discussions because there are no available learning materials. I have also observed that some learners do not like the teachers' strategies, or they get bored with the teachers' tone of voice. These made me realize that learners must be given guidance for them to understand the lessons because every learner is vulnerable and precious, and their mind is primed for learning.

Learners differ in their level of understanding. As such, I have a great task to ensure the learning of my learners throughout the entire teaching and learning process. My learners should have the ability to cope with the teachers' strategies towards teaching most especially in literature subjects as this could probably solve the problem as to why many learners are passive. Looking into the situation, there is a gap that needs to be bridged with regards to teaching literature in Tacurong City because there are limited studies that venture into the challenges and struggles encountered by teachers in teaching literature.

Bloom (2019) emphasized that due to the challenges with text selection, length, cultural difficulty, and cultural appropriateness, teachers find it challenging to inspire their students to embrace reading. Thus, learners develop negative assumptions that are inculcated in their minds. These assumptions limit learners' abilities to learn. This results in negative responses on the part of the learners and hinders the development of their capabilities and abilities.

Damrosch (2019) articulated that in teaching literature, there is no perfect method because it depends on the capability of the learners to understand the subject. He found that the commonly used strategy in teaching literature is reporting while lecturing as a strategy was found to be effective in their learning process. Strategies in teaching literature have become an avenue for the teachers to be effective in motivating learners to learn and participate. A traditional lecture strategy used by the teacher may challenge some but may be ineffective for others. A tasked-based strategy motivates and is effective to some but may confuse and discourage slow learners.

As observed in Tacurong National High School, learners are passive in their literature subject; they go out and escape during class period. Teachers are also not prepared in handling the subject; hence, learners do not experience quality teaching because some teachers are obliged to teach literature even if it is not their specialization because of the lack of teachers in the school.

Research Questions

This study was conceptualized to determine the struggles and challenges as well as the coping mechanisms that they employed that teachers encounter in teaching literature to Junior High School students in Tacurong National High School in the school year 2023-24.

Specifically, this study sought answers to the following questions:

1. What are the struggles and challenges encountered by the Junior High School teachers in teaching literature at Tacurong National High School?

2. How do these teachers cope with the challenges and struggles encountered in teaching literature?

METHODOLOGY

This study utilized the qualitative multiple case study to understand the teachers' struggles and challenges in teaching Literature at Tacurong National High School. In order to provide an authentic illustration, I gathered data from four Junior High School English teachers. Specifically, one Junior High School English teacher teaching Grade 7 Philippine Literature, one Junior High School English teacher teaching Grade 8 Afro-Asian Literature, one Junior High School English teacher teaching Grade 9 Anglo-American Literature, and one Junior High School English teacher teaching Grade 10 World Literature.

. During the gathering of data, the researcher used an in-depth interview method or the key informant interview. Key informant interview is one of the most common techniques that are applied to research studies that have a social impact or effect on the community, for feedback and information to be collected before the application of a policy planning or a decision, and to explore and uncover different patterns that drive to the formulation of a certain behavior (Constantine, 2018). The researcher recorded all the interviews. The researcher transcribed the interview and examined and analyzed the verbal interactions which are recorded during the in-depth interview.

Thematic analysis was utilized to identify, analyze, and interpret recurring themes. It described and analyzed commonalities, differences, and relationships with the gathered data. In addition, thematic analysis was described as a tool for finding, analyzing, and reporting data trends.

RESULTS

Teaching literature in the junior high school level is a rewarding yet demanding endeavor that teachers undertake. Junior high school teachers face a variety of obstacles when navigating the world of literature subjects, which is entangled with both concrete and abstract complexity.

The struggles and challenges encountered by the junior high school teachers in teaching literature. Based on the thematic analysis there are three (3) major themes emerged namely (1) lack of reference materials, (2) learners' attitude toward the subject, and (3) learners' diverse cognitive capacity.

DISCUSSION

On the struggles and challenges encountered by the Junior High School teachers in teaching literature at Tacurong National High School.

Inside the classroom there are tasks or circumstances that demand teacher's skill or effort but might not necessarily evoke hardship are referred to as **Challenges**. Teachers are encountering these challenges on how to engage learners in different types of literary texts and others.

Table 1. struggles and challenges encountered by the Junior High School teachers in teaching literature at Tacurong National High School

Major Themes	Core Ideas	Frequency of Responses
Lack of Reference Materials	Unavailability of Reference Materials	General
	Limit Academic Knowledge	General
Learners' Attitude Toward the Subject	Learners' Disinterest	Typical
	Learners' Dislike	Variant
Learners' Diverse Cognitive Capacity	Varying Stages of Cognitive Abilities	Typical
	Poor Reading Ability	General

During the in-depth interview, the following themes were emphasized by the participants: lack of available reference materials, learning dislike and interest, and learners' diverse cognitive capacity. They expressed these different struggles and challenges upon hearing the questions and answered what they actually experienced and encountered in their teaching process. They answered the questions without any hesitation in mind drawing from their observations and experiences and showing their depth of understanding and engagement with the subject matter.

With confidence, the participants shared the real scenario and dynamics within their classroom. The participants explained their insights according based on what they observed and experienced in the classroom.

On the teachers cope with the challenges and struggles encountered in teaching literature

Teaching literature is a rewarding yet demanding endeavor, often accompanied by various struggles and challenges for educators. Navigating the complexities of imparting

literary knowledge and fostering critical thinking skills in her students, she encountered obstacles that could impact her well-being and effectiveness in the classroom.

Table 2. Teachers cope with the challenges and struggles encountered in teaching literature

Major Themes	Core Ideas	Frequency Responses
Provision of Learning Materials	Reproduction of Learning Materials	General
	Making of Powerpoint Presentation	General
Reliance to Internet Sources	Surfing the Internet	Variant
	Adopting the 21st Century Learning Process	General
Conduct of Reading Remediation	Participating in the Catch-Up Fridays	Typical
	Use of Dictionary	General
Use of Differentiated Instructions	Applying New Approaches	Variant
	Catering to Diverse Learning Needs	Variant
Integration of Cooperative Learning Strategy	Promoting Positive Interdependence	Variant
	Fostering Individual Accountability	Variant
Undergo Trainings and Seminars	Professional Development	Variant
	Continuous Growth and Skill Enhancement	Variant

Provision of Learning Materials

Learning materials such as journals, magazines, books, and modules are very essential in learning. They are important because independent learning is needed. Hence, teachers provide learning materials because of the lack of available reference materials. They help learners to learn by giving them assistance providing them with individual copies of the literary piece. All teacher-informants initiated to distribute copies of the literary piece for their learners (Ravitch, 2018).

Reproduction of Learning Materials. As the participants explained during the interview, the top struggle and challenge in teaching literature is the provision of learning materials in the field. They further stated that how can a teacher provide quality and productive learners in the future if this basic need in learning is not the priority by the Department of Education. Teachers in the government schools encounter the lack of reference materials as far as education is concerned. To provide quality education,

reference materials should be provided and be given priority for better education for the learners (Rodney, 2018).

According to the participants, they have to photocopy the lessons just to cope with the absence of reference materials in the class to ensure learning for the day. They invested their own money on reproducing copies of the literary pieces for the students to have their own copies of the topics. Copies of the literary piece will serve as students' learning material as mentioned by the participants. With the advancement of technology, the majority of participants now utilize Power Point presentations for learners. This is a big help for the teachers to have an easy preparation of topics to be discussed more efficiently, ultimately benefiting both educators and students alike. With the increasing prevalence of visual presentations, learners are now encouraged to pay attention if there are visual presentations prepared.

Making of PowerPoint Presentation. Making PowerPoint presentations in teaching literature enables teachers to enhance their lessons through visual aids, organization, multimedia integration, and differentiation (Alley, 2018). It promotes active learning, facilitates resource sharing, and contributes to teachers' professional growth and effectiveness in the classroom. Participants used this to motivate students to listen and participate in the class discussion. By diversifying instructional strategies, teachers create a more engaging and inclusive, dynamic and inclusive learning environment, encouraging students to learning journey. This helps ensure that all students have access to the material in a format that suits their learning preferences. It shows the exemplifying a more enriching and effective learning experience for everyone.

Reliance to Internet Sources In teaching literature, using internet sources is now crucial for helping students understand and connect with literary texts better. Using multimedia like audio, visuals, and interactive discussions helps teachers create an engaging learning space that caters to various students' preferences and styles. Carr (2018) emphasized that education in today's generation is challenging to the teachers. Most of the teachers are not so expert in the so-called 21st century learning process. Learners are active in using gadgets and other sources. This pushes teachers to use computers so that learners will be encouraged to attend class. Teachers use the internet to have an advanced learning of the topic to discuss. They also use the internet to get important details and information needed for the discussion. Thus, the reliance on internet sources in teaching literature offers opportunities to enrich students' learning experiences and foster critical thinking skills in the digital age.

Surfing the Internet. Moreover, the participants responded that to cope with the struggles and challenges in teaching literature, they have to be equipped with the innovations like surfing the internet just to develop the skills and competencies to attain for that day, week, and quarter (Turkle, 2018). However, the informants explained that some learning materials are limited and not suited to the understanding of the learners. They just encourage students to surf the internet to get some significant details about the

subject to be discussed. Also, teachers have to surf the internet to provide their students with appropriate knowledge to be disseminated.

Adopting the 21st century Learning Process. The 21st-century learning process in teaching literature is crucial for making the subject more relevant, engaging, and impactful for learners in today's rapidly changing world. It fosters critical thinking, global awareness, personalized learning, and prepares learners with essential skills for their academic and professional futures. Teachers of this generation should adopt the 21st century teaching process especially in teaching literature. Teachers should explore new approaches, technologies, and teaching strategies that engage students and inspire a lifelong love of reading and learning (Prensky, 2018). Thus, my informants embrace this challenge as their coping mechanisms. They use ICT to make their teaching more interactive and effective such as using Powerpoint Presentations during their teaching process.

Conduct of Reading Remediation. Every school year, the teachers face problems from the non-readers. The conduct of reading remediation is the coping mechanism used by the teachers in facing the struggles and challenges. Although it is difficult to give extra time due to the overwhelming workloads, and assisting students who are slow readers and non-readers, teachers must still find time to help their students read during vacant periods. teachers remain steadfast in their commitment to supporting students' literacy skills, utilizing even the briefest of moments to provide guidance and encouragement during any available downtime (Yin, 2018).

Conclusions

In this age of information, teachers must become learners' guides to learning. The great teacher must have digital agility, and accept change with open arms. Technology does not make or break a great teacher; it is a tool that needs to be facilitated properly to prepare learners for what lies ahead in this great new world.

Education is a mutual process, in which everybody can learn from each other. With the different struggles and challenges of teachers being mentioned, Teachers in English are resourceful and diligent to deliver quality education despite the problems they encounter. Learning from others creates an atmosphere of fulfillment. Both the teachers and students are learning in school. Teaching is very essential. Teachers keep motivated to share knowledge for the learners. With literature teaching, many lessons indeed emerged, because it is a manifestation that teachers really do an effort to impart their knowledge to the students.

Literature is a broad subject to learn for students, but some teachers offer themselves to help students who need their guidance. Learning is a cycle; teachers also learn from their learners. Teachers as masters of skills naturally emerge because of the way they showcase their expertise as recognized not only by the learners but also by the

community. This professional attribute is recognized because it is founded in patience, hard work, and perseverance to acquire and master the skill in teaching literature.

This research is only limited to the struggles and challenges of Junior High School teachers of Tacurong National High School, there is so much more to be learned about the topic which hopefully, this study may enflame those in higher positions in the department to delve deeper into the broader issues affecting teachers across various institutions. In my point of view, learners should be given importance because they need teachers to guide, teach, and understand them by experiencing an environment where growth and enlightenment flourish harmoniously.

Recommendations

Based on the findings, the following recommendations were made: the department heads and grade level head may know the dilemma experienced by the teachers inside the classroom through giving technical assistance. The school administrators as immediate supervisors may allocate enough budget to send teachers on trainings and seminars so that teachers may improve their teaching techniques and strategies. Education managers may be able to develop a systematic model for innovative methods in teaching literature. Students may be provided with relevant and age-appropriate reading materials which means reading materials vary depending on whether the learners are slow or struggling readers. Students may also be given reading activities in school to train them and to develop their interest in reading. Teachers may design reading activities where the inferential and critical comprehension of learners may be developed. Parents may know their moral vital role in influencing their children to develop their habit in reading.

The above recommendations are made having considered the practical implications of the results of this study. Teachers find difficult to manage and teach because of workloads and the large number of students in the classrooms. Nevertheless, these may be considered sooner than later for the betterment of the educational system in school. The additional training suggestions made, including those to be included in in-service days training, are unlikely to result in vast cost or impossible practical implications because it could not be argued that the struggles and challenges encountered by the teachers are authentic.

Therefore, investing in targeted training programs aimed at addressing these challenges would not only be justified but also essential for supporting educators in overcoming obstacles and fostering a more conducive learning environment for students.

Compliance with Ethical Standards

This is a declaration by the author/s in his/their own words and in paragraph form which includes compliance with obtaining informed consent, the respondents' freedom to withdraw from the study at any time, the anonymity of the respondents was maintained,

the respondents' well-being was safeguarded, no conflict of interest exists in the conduct of the study, plagiarism was strictly avoided, there was no bias in the interpretation of the findings and that the results were used purely for research.

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THE EFFECT OF EXPERIENTIAL LEARNING APPROACH ON THE ACADEMIC ACHIEVEMENT AND REFLECTIVE SKILLS OF GRADE 8 STUDENTS IN SCIENCE

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ABSTRACT

The purpose of this study was to examine the effect of experiential learning approach on the academic achievements and reflective skills of Grade 8 students in science. The study was conducted at Pangutaran National High School-Main, Schools Division of Sulu, during the school year 2023-2024. The pretest-posttest quasi-experimental control group and descriptive design was used in this study in determining the effect of experiential learning approach on the academic achievement and reflective skills of the students in science. The researcher-made achievement test, and reflective skills questionnaire were utilized as instrument for gathering the data. The Mean, Standard Deviation, Test of Normality, and Mann-Whitney U test at 0.05 level of significance were the statistical tools used to treat the data. The findings revealed that: (1) The level of academic achievement of grade 8 students taught using experiential learning approach was very satisfactory, (2) The level of academic achievement of grade 8 students taught using conventional method did not meet expectation, (3) The level of reflective skills of the grade 8 students in force and motion topic using experiential learning approach is generally high. The students consistently engaged in self-reflection, demonstrating high level of reflective skills, and (4) There was a significant difference in the academic achievement between grade 8 students taught using experiential learning approach and those taught using conventional method.

***Key words**: Experiential Learning Approach, Conventional Method, Academic Achievement, Reflective Skills, Force and Motion*

INTRODUCTION

The K to 12 curriculum paved the way for developing the innovation, reflective, collaborative, and critical thinking skills of the learners. Teachers opted to adapt different teaching strategies to cater the diverse needs of the learners. One of the strategies that are widely used by teachers in teaching Sciences is the experiential learning approach. Experiential learning approach involves students in a complex understanding rather than surface learning and enable students to transfer knowledge better. Moreover, activities and environments associated in experiential learning such as experiments and laboratories, are the primary example of how experiential learning acts as a bridge on developing the skills of the students, and encouraging them to actively engage to the subject matter. However, despite the implementation of teaching strategies, there are still some students who did not understand the concept or scientific phenomenon.

An existing problem among the students in the Philippines is the low academic achievements. In the Program for International Students Assessment results (PISA, 2018), Philippines has been ranked 76th among 78 PISA-Performing countries worldwide. Philippines has the lowest mean score in science (357/600), mathematics (353/600), and reading (340/600). It is noted that the insufficient access to quality science education and resources are the major factor contributing to the low academic achievements of students. Moreover, it is reported that not all schools in the Philippines have access to adequate science material, including laboratory equipment and up-to-date textbooks which can hinder students' hands-on learning experiences and practical understanding of scientific concept (PISA, 2018). Additionally, modular distance learning or no face-to-face classes caused by pandemic is also considered as factor on students' low academic achievements. It leads students to be less motivated in class resulting to their low adaptability and low comprehension towards the discussion. As result, students fail to learn scientific phenomenon on a certain topic, and unable them to connect theories and knowledge they have learned in the classroom to real world situations.

According to Wang et al. (2012) as cited in Bernardo (2021), school characteristics have a significant influence on students' scientific literacy. Certain school characteristics, namely school standing, having libraries and laboratories, good relationship between students and teachers, and funding for teacher training were associated with higher science literacy score. Moreover, Hammerstein et al. (2021) also reported that pandemic shows a negative effect on student achievement, specifically in younger students with low socioeconomic status. In connection to that, teaching strategies such as experiential learning can be used to improve the certain problem. Bradberry and Maio (2019) confirmed that Experiential Learning Approach benefits primarily the students. It gives students a practical experience for their confidence as they prepare and make decisions about their future career paths. Additionally, Rukhsana et al. (2022) stated that experiential learning encourages students to think, investigate, ask questions, and make decisions.

The Department of Education has implemented the Enhanced Basic Education Act of 2013, in line with the Republic Act No. 10533. Specifically, R.A No. 10533, Section

5 entitled “Curriculum Development” stated that the curriculum shall be learner-centered, inclusive and developmentally appropriate. This act addresses the need for quality education by enhancing the curriculum and learner-centered type of education by the implementation of different teaching strategies and approaches to the learning process.

There are several studies conducted internationally that utilized experiential learning approach. However, none of those have been particular to the present study. To mention, Alkan (2016); Experiential learning; It’s effect on achievement and scientific process skill. Abu-Assab (2015); The Effect of Experiential Learning on improving the performance of EFL students. Abonyi and Okoli (2014); The Effects of the Experiential learning strategy on secondary school students’ achievement in biology. The aforementioned studies focused on English, Biology, and Scientific Skills, while the present studies focused on Physics and reflective skills of Grade 8 students.

The researcher also examined the local studies that are parallel to the present study in terms of research locale, research design, research instruments, and treatment. For instance, Taludjog (2016); The effects of experiential learning approach on the Academic Performance and Interest in Chemistry of grade 9; Dolotallas and Nagtalon (2015); The effects of Experiential Learning Approach on the student’s performance in Filipino; Agsalog (2019): The effect of experiential learning approach on the academic performance and motivation of grade 10 students. The studies mentioned were focused on different disciplines such as Chemistry 9, Filipino 10, and Physics 10, however the present study focuses in Physics for grade 8 students and reflective skills.

The primary objective of this study is to investigate and explore the effect of experiential learning approach in the academic achievements and reflective skills of grade 8 students in science. Moreover, this study intended to introduce the experiential learning approach to teaching and learning process, as it would make the discussion connected to the real-life situation.

Framework of the Study

This study is anchored on the Experiential Theory by David Kolb (1984). This theory explains about the four-stage process of learning that transforms experiences into an effective and valuable learning. The four-stage process of David Kolb’s Theory are concrete experiences, reflective observations, abstract conceptualization, and active experimentation. These stages involve Assessing information and Observing information; wherein the students have new experiences and interprets the it in a new way, watching others and developing new idea by observing one’s personal experiences, formulating theories to explain the Observation, and enable to use a theory in solving problems and in making decisions.

Another theory relevant to this study is the Cognitive Theory of Bruner (1961). The theory emphasized that learners construct their own knowledge for themselves, which means that the intellectual level is the extent to which the learners have given an appropriate instruction together with practice and experiences.This study is also

anchored on the Constructivist learning theory developed by John Dewey (1938). This theory explained the learning process whereby everything occurs within a social environment and knowledge is socially constructed and based on experiences. Thus, the students have created a new knowledge and ability to apply it to different situations.

Further, this study is anchored on the Reflective Cycle of Gibbs (1998) in terms of reflective skills. This cycle theorized a framework for reflective practice that presents the reflective model which encourage students to think, evaluate, and establish an action plan from their experiences. This cycle consists of six stages, namely: Description, Feelings, Evaluation, Analysis, Conclusion, and Action Plan.

Figure 2 shows the Conceptual model of the study. On the left side of the box is the independent variable which represents the effect of teaching Strategies. On the right box is the dependent variables which can be changed depending on how effective the independent variable used in the study.

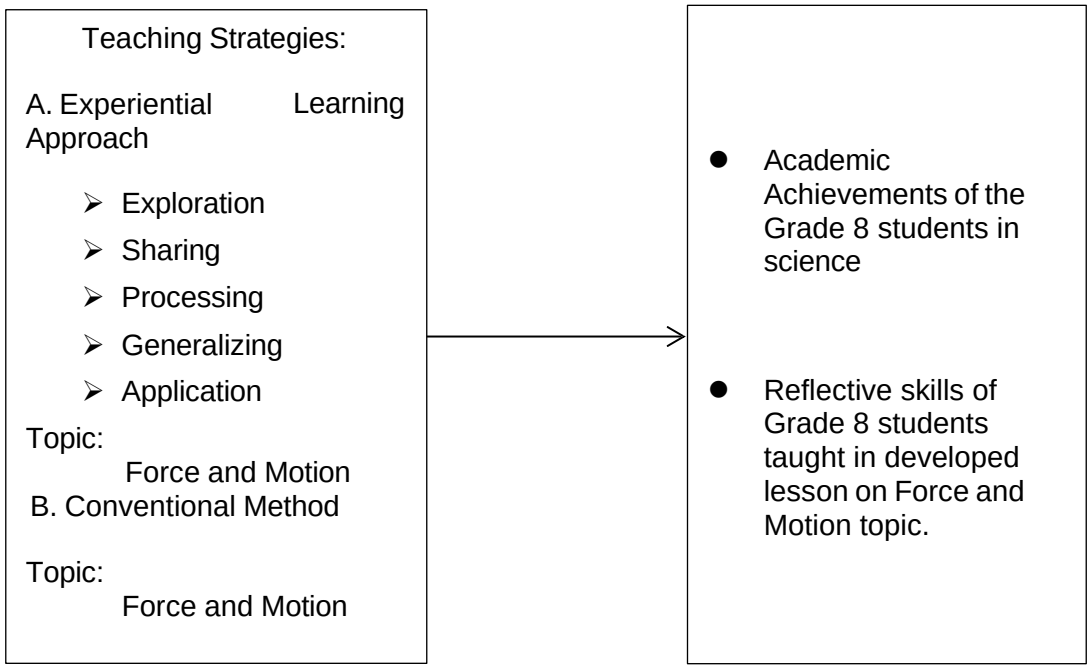


Figure 2. Conceptual Model of the Study

Research Questions

This study sought to answer the following problems to determine the effects of experiential learning approach on the academic achievements of the grade 8 students in science.

1. What is the academic achievement of the students using experiential learning approach?
2. What is the academic achievement of the students using conventional method?

3. What is the level of reflective skills of the students in developed lesson on force and motion using experiential learning approach?
4. Is there a significant difference on the academic achievements of the students using experiential learning approach and conventional method?

METHODOLOGY

This study was conducted at Pangutaran National High School-Main, located in Simbahan, Pangutaran Sulu. Pangutaran is a 4th class municipality located in the northwest part of the province of Sulu. The researcher employed simple random sampling design, specifically the fishbowl technique, in selecting the 60 participants to provide the sample size with equal chances. This means that the researcher collects the names of the students from three selected section of Grade 8. The names were randomly picked by the researcher, and the selected twenty names were the official participants of the study. Hence, 30 randomly selected students were assigned to the control group and the remaining 30 students to the experimental group. The students in the experimental group were equally paired with the students in the control group.

Proper Protocol in gathering the data were observed by the researcher. The researcher developed a survey-questionnaire and a lesson together with the achievement test, and the aforementioned instruments was validated by the panel of experts for accuracy, validity, and reliability. Letter from the principal of the Pangutaran National High School-Main were sought for approval of the conduct of the study, and the researcher was requesting to the panel of experts and principal about the conduct of the study. After requesting, the given procedure was followed. Moreover, proper research ethics was strictly observed and followed by the researcher.

This study utilized a researcher-made test-questionnaire as an instrument in gathering the data. The researcher developed a 30-items pre-test and post-test questionnaire and give it to the chosen respondents. The said Test-Questionnaire is based on the learning competencies, and guided with the Table of Specification (TOS) with the domains of bloom's taxonomy. It contains 9 items for remembering, 9 for understanding, 5 applying, 4 analyzing, 2 evaluating, and 1 creating. The test-questionnaire contains a question and the choices, wherein the students encircled the choices below. The lesson and test questionnaire formulated by the researcher was be validated by the panel of experts.

Further, the researcher also utilized a researcher-made survey-questionnaire in gathering the information for the level of reflective skills of the students. The survey-questionnaire contains 15 statements together with rating scale where the respondent will just mark check in the space given after the statement and below the chosen rating scale that fitted to their answers.

The research instruments undergo checking and critiquing by the panel of experts and english critic before the distribution for final conduct, to ensure the validity of the research instruments. Furthermore, the researcher also conducted a try-out and pilot

testing to grade 9 and grade 10 students of Pangutaran National High School to ensure the reliability of the instruments. After pilot testing, the data gathered from pilot testing was analyzed using the reliability test which obtained a Cronbach Alpha of 0.9 for survey questionnaire, and 0.6 for achievement test. Therefore, the research instruments were tested valid and reliable and the researcher may proceed to use the instruments for final conduct.

Development of the Lesson Plan

The development of the lesson for the Experiential Learning Approach begins with the planning of lesson. The topic were Force and Motion. The researcher utilized a K-12 teacher manual, learners guide, and internet sources in planning the lesson and activity. The features (5-Step) of Experiential Learning Approach by Pfeiffer and Jones (1985) was used as the model for designing the lesson.

I Exploration

This step involves engaging in hands-on activity that is directly related to the learning objective. It could be real-life situation, simulation, or experiment. The goal is to provide a tangible experience that serves as a foundation for learning.

II Sharing

This step encourages students to reflect and share their observation regarding on their concrete experiences. This step involves analyzing, and evaluating the experience, identifying patterns, and making connections to existing knowledge. Sharing and reflecting allows students to gain insight and extract meaningful lessons from the experience.

III Processing

This step takes the insights learned by the students from reflection and connect them to abstract concepts and theories, to develop deeper understanding of the concepts and their application in different contexts. The teacher together with the students discusses the activity and perform the lesson proper.

IV Generalizing

This step encourages students to apply their knowledge in new situation. This step involves active testing with the concepts learned through games, activity, and experiments. Students are encouraged to take risk, explore different approaches, and learn from the outcomes of their actions.

V Application

The final step emphasizes the importance of ongoing learning and improvement. Students are encouraged to reflect on the outcomes of their experimentation, identifies areas for improvement, and engage in further learning. This step emphasizes the iterative

nature of the experiential learning process, where each cycle builds upon the previous ones.

After writing, the developed lesson plan was presented and validated by the panel of experts to determine its accuracy, clarity, and appropriateness. The lesson plan was modified based from the suggestion of the panel of experts. The revised lesson was implemented to the Experimental Group only to test the Effectiveness of Experiential Learning Approach.

Table 1. Scoring guide for the effects of Experiential Learning Approach on the Academic Achievements of the Grade 8 Students in Science

The scoring procedure of this study is aligned with DepEd Order No. 8 Series of 2015, entitled “Policy Guidelines on Classroom Assessment for the K–12 Basic Education Program." This specific order issued several guidelines regarding the scoring procedure for studies and also outlines the principles and processes for assessing student learning.

Score Range	Grading Scale	Description	Remark	Qualifying Statement
27-30	90% - 100%	Passed	Outstanding	Advanced Proficiency in knowledge and skills.
23-26	85% - 89%	Passed	Very Satisfactory	Proficient in knowledge and skills.
19-22	80% - 84%	Passed	Satisfactory	Approaching Proficiency in knowledge and skills.
15-18	75%-79%	Failed	Fairly Satisfactory	Low Proficiency in knowledge and skills.
Below 15	75% Below	Failed	Did Not Meet Expectation	No Proficiency in knowledge and skills.

Table 2. Scoring Guide for the Level of Reflective Skills of the students in developed lesson on Force and Motion topic.

Scale	Range	Response	Qualifying Statement
5	4.20-5.00	Always	The students consistently engage in self-reflection, demonstrating very high level of reflective skills.
4	3.40-4.19	Often	The students frequently engage in self-reflection, demonstrating high reflective skills.
3	2.60-3.39	Sometimes	The students occasionally engage in self-reflection, demonstrating moderate reflective skills
2	1.8-2.59	Rarely	The students infrequently engage in self-reflection, demonstrating limited reflective skills.
1	1-1.79	Never	The students never engage in self-reflection demonstrating lack of reflective skills.

The data were treated with the appropriate statistical tools for analysis.

For problem number 1, 2, 3, the mean and standard deviation was used to determine the level of the academic achievements of the grade 8 students who were taught with experiential learning approach and those who were taught with conventional method.

For problem number 4, the Shapiro-Wilk test assumption of normality test was first used to determine the normality of the data. further, after the test of normality, the Mann Whitney U test was used as non-parametric test to determine the significant difference in the academic achievements of the grade 8 students who were taught with experiential learning approach and those with conventional method.

This study delimited only on the effects of experiential learning approach on the academic achievements and reflective skills of the grade 8 students in science. This study specifically focuses on the test of effectiveness of the experiential learning approach on the achievement of grade 8 students in Force and Motion topic.

RESULTS

Table 3 shows the pre-test and post-test achievement scores of the grade 8 students for both experimental group and control group.

Table 3. *Academic Achievement of grade 8 students in Science*

Level of Proficiency	Range of Scores	Experimental Group				Control Group			
		Pretest		Post-test		Pretest		Post-test	
		F	%	F	%	F	%	F	%
O	27-30	0	0%	8	26.7%	0	0%	0	0%
VS	23-26	0	0%	22	73.3%	0	0%	0	0%
S	19-22	2	6.7%	0	0%	0	0%	5	16.7%
FS	15-18	4	13.3%	0	0%	3	10%	12	40%
DNME	Below 15	24	80%	0	0%	27	90%	13	43.3%
Total		30	100%	30	100%	30	100%	30	100%
Mean		12.73		25.80		10.57		14.80	
SD		3.383		1.80		2.897		3.671	

Legend:

O – Outstanding VS – Very Satisfactory S – Satisfactory

FS – Fairly Satisfactory DNME – Did Not Meet Expectation

Table 4. *Test of normality for the post-test scores of the students*

	Group	Shapiro-Wilk Test		
		Statistic	Df	*P*
Pretest	Control	0.892	30	0.005
	Experimental	0.906	30	0.012
Post-test	Control	0.872	30	0.002
	Experimental	0.914	30	0.019

Table 5. *Mann-Whitney U test in computation of the academic achievement of grade 8 students in science between experimental group and control group.*

Group		N	Mean Rank	Sum of Rank		Test Statistic Pretest	Post-test
Pretest	Experimental	30	36.53	1096.00	Mann-Whitney U	269.000	0.000
	Control	30	24.47	734.00	Wilcoxon W	734.000	465.000
	Total	60			Z	-2.695	-6.693
Post-test	Experimental	30	45.50		Asymp. Sig. (2 tailed)	0.007	0.000
	Control	30	15.00	1365.00			
	Total	60		465.00			

Table 6. *The level of Reflective Skills of Grade 8 students using Experiential Learning Approach*

Reflective Skills	Mean	Std. d.	Ver. Des.
1. I enjoy performing activities in exploration process.	4.66	0.90	Always
2. I love to share and discuss my observation to my classmates.	4.37	0.99	Always
3. I can identify the positive and negative consequences in my previous activities.	3.73	0.69	Often
4. I automatically formulate ideas based from my observation of the activities.	4.43	0.81	Always
5. I automatically identify what should I do to improve the activities.	4.63	0.71	Always
6. I seek feedbacks from my teacher and classmate to check my ideas based from activities.	4. 53	0.73	Always
7. I find it easy to identify my weaknesses and strengths through reflection.	4.50	0.68	Always
8. I can express my thoughts and insights clearly when reflecting my experiences in an activity.	4.30	0.65	Always
9. I am able to meet the learning competencies in the activity through reflection.	4.53	0.62	Always
10. I am able to connect my learning experience to my future goals.	4.90	0.30	Always

11. I am able to solve scientific problem from reflecting the knowledge I learned.	4.20	0.84	Always
12. I love engaging in self-reflection to understand insights in the previous activity.	4.97	0.18	Always
13. I compare and contrast theories to gain a broader understanding from my activities.	4.80	0.40	Always
14. I regularly take time to think deeply about the concepts I learned during class activity.	4.83	0.46	Always
15. I feel confident to make decision due to reflecting previous observation from activities.	4.77	0.56	Always
Overall	4.55	0.71	Always

Legend:

4.20-5.00 Always, 3.40-4.19 Often, 2.60-3.39 Sometimes, 1.80-2.59 Rarely, 1-1.79 Never

DISCUSSION

The data presented in Table 3 revealed that the experimental group had obtained higher mean scores. However, in pre-test phase, the students in experimental group obtained below 75 or did not meet expectation. This indicates that the students at this level have low proficiency in knowledge and skills in the given topic. Moreover, it can also be gleaned from the table that the mean score of the experimental group in the post-test had improved to *very satisfactory* level. After the experiential learning approach was implemented, the mean score for the post-test in experimental group significantly increased to 25.80. This improvement suggests that the experiential learning approach had a positive effect on the academic achievements of grade 8 students in force and motion topic.

Furthermore, there were 8 students (26.7%) identified as *outstanding*, and 22 students (73.3%) as very satisfactory. The data show that the score of students in experimental group were clustered at *very satisfactory* level. The results revealed that experiential learning approach really took place. It helps to improve the students' achievement level. Their participation in the learning process through different activities reveals that they have developed more understanding of the concepts which help retain more information. They were able to recall and apply this information better in real life situation than the control group.

The findings of the present study collaborate with the findings of Taludjog (2016), which revealed that the academic performance of students taught with an experiential learning approach is higher compared with those who are taught with the conventional method. Moreover, the study of Abonyi and Okoli (2014) is also parallel to the present study, revealing that the students in experimental group have a higher post-test score than those students in control group.

On the other hand, the control group obtained a low mean score in both pre-test and post-test as shown in the table 3. It obtained 10.57 mean score in the pre-test which indicates that it *did not meet expectation*. This means that the students at pre-test level have low proficiency in knowledge and skills in force and motion topic. Parallel to the experimental group, the mean score for the post-test in the control group also improved to 14.80 but with the description of *did not meet expectation*. Although there was an improvement, the increase was not significantly observed. This improvement suggests that the conventional method had no effect on the academic achievements of grade 8 students in force and motion topic.

The researcher observed that the below-average proficiency performance of the students in control group may be due to the lack of interactive classroom activities, which enable them to be less engaged with the lesson and topic. The use of examples, illustrations, and drawings in modulating the lesson does not capture their attention to focus, which results to their low academic achievement in the post-test. Significantly, the absence of teaching approach being used by the teachers has contributed to the low academic achievement of the students in control group.

The major results showed that the achievements of the students in experimental group and control group were comparable. The students in the experimental group were more proficient in knowledge and skills in force and motion topic than those in control group. This finding connotes that the experiential learning approach is effective in improving the academic achievement of grade 8 students in science compared to conventional method.

As gleaned from Table 4, the result in Shapiro-Wilk shows that the experimental group obtained 0.012 for the pre-test and 0.019 for the post-test. While the control group obtained 0.005 for the pre-test and 0.002 for the post-test, this can be interpreted as meaning that the data from the experimental group and control group for both the pre-test and post-test does not meet the assumption of normality. This suggests that the use of the analysis of covariance as a parametric test to analyze the comparison of both groups is insignificant. Therefore, the researcher utilizes the Mann-Whitney U test as an alternative non-parametric test to determine the effect of an experiential learning approach on the academic achievement of grade 8 students.

As gleaned from Table 5, the mean rank in the pre-test of the experimental group (36.53) is higher than the mean rank of the control group (24.47), which indicates that students taught with experiential learning have an initial advantage in academic achievement. This has been supported by the sum of rank, with the experimental group totaling 1096.00 compared to 734.00 for the control group. In the post-test phase, the mean rank for the experimental group increased to 45.00 while the control group decreased to 15.00. The widened gap in the sum of ranks at 1365.00 for the experimental group and 465.000 for the control group suggested a continuous positive effect of experiential learning in teaching and improving the academic achievement of the student over time compared to conventional methods.

The Mann-Whitney U test indicated a significant difference between the two groups at both assessment points, with values of 269.00 and 0.000 for the post-test. The subsequent Wilcoxon W statistics showed a distribution shift towards a more significant effect of experiential learning, with values of 734.000 for the pretest and 465.000 for the post-test. The Z score was also in favor of experiential learning, with values of -2.695 for the pretest and -6.693 for the post-test. The asymptotic significance values in the pretest were 0.007 and 0.000 for the post-test, which both have a statistically significant difference.

Based on the results provided by the Mann-Whitney U test, Wilcoxon W statistics, and asymptotic significance values for the pre-test and post-test stages, the null hypothesis, which stated there is no significance difference in academic achievement between two groups is *rejected*. This rejection supports the conclusion that the experiential learning approach has a significant positive impact on the academic achievement of grade 8 students compared to the conventional teaching method

The findings of the present study agree with the findings of Abonyi and Okoli (2014), stated that implementing an experiential learning strategy in the lesson would improve the academic achievement of the students. It can be concluded that teaching with the use of an experiential learning strategy would enhance the skills and knowledge of the students through group activities, hands-on experimentation, and academic performance.

Furthermore, the result of this study is also strengthened by the study conducted by Hafeez (2022), which highlighted the comparison of game-based learning with the traditional learning method. It showed that game-based learning strategy is more effective learning strategy as compared to the traditional learning strategy while also the learners' engagement level increased more in the game- based learning strategy,

Hence, game based learning is a form of experiential learning which also offers the learners first-hand learning experiences, like the experiential learning approach.

As shown in table 6, the overall mean and majority of the responses of grade 8 students towards the level of reflective skills assessment were *Always*. This indicates that students taught using experiential learning approach consistently engage in self-reflection, demonstrating a high level of reflective skills.

Moreover, among the 15 statements, the items with the top 5 highest mean were as follows: *The students love engaging in self-reflection to understand insights from the previous activity* (4.97)*. The students were able to connect their learning experience to their future goals* (4.90). *The students regularly take time to think about the concepts they learned during class activity* (4.83). *The students were able to compare and contrast theories to gain a broader understanding from their activities* (4.80). Lastly*, the students feel confident to make decision due to reflecting previous observation from their activities* (4.77).

The students involved in experiential learning responses to the statements with high degree of positive respond towards the effect of experiential learning towards their reflective skills. These responses are related to the students' skills developed during the implementation of experiential learning approach. These present findings agreed with the study of Abu-Assab (2015) which states that the experiential learning approach make the students active learner since it promotes their thinking, social skills, and able to connect their future goals based on their experiences. Furthermore, these responses from the students strongly supports the statement of Wurdinger (2005) that the "outcomes of the learning process are varied and often unpredictable" and "learners play a critical role in assessing their own learning". Generally, as shown in the table, the grade 8 students had a high level of reflective skills in force and motion topic using the experiential learning approach. This shows that the students were certainly able to reflect their learning experience to grasp deeper understanding of the concept to enrich their knowledge in force and motion topic.

According to Moon (1990), "reflective practice can be enhanced through engaging in systematic and structured reflection activities, fostering deeper understanding and self-awareness". Moreover, the promotion of reflective skills aligns seamlessly with the experiential learning approach, as emphasized by Kolb (1984). By engaging in hands-on experiences, such as practical activities, students have concrete experiences to reflect upon.

According to Hatton and Smith (1995), "effective feedback and facilitation contribute significantly to the development of reflective skills of the students". Subsequently, the facilitation of reflective skills as emphasized by Hatton and Smith (1995), complements the experiential learning approach. In the context of the present study, feedbacks and guidance play a pivotal role during the reflective and sharing phase of the cycle, reinforcing the connections between exploration phase and Processing phase. This integration ensures a stronger experiential learning process.

Conclusions

1. The experiential learning approach is effective in improving the academic achievements of grade 8 students in science.
2. The conventional method is less effective in improving the academic achievements of grade 8 students in science.
3. The integration of Experiential Learning Approach in teaching science 8 specifically Force and Motion topic can improve the academic achievement of students. It can help develop proficiency in knowledge and skills in science.
4. The use of Experiential Learning Approach could develop and enhance the reflective skills of the students.

Recommendations

1. It is recommended that the students be exposed to experiential learning approach to enhance their ability to connect their knowledge and conceptual understanding to real-world applications.
2. Science teachers should utilize the experiential learning approach to support the development and improvement of students' academic achievement and performance in science.
3. It is suggested that teachers are encouraged to utilize the experiential learning approach in designing the lesson in science to encourage active learning and engagement among students.
4. Students should be exposed to experiential learning approach to enhance their reflective skills and further reflect learning for a quality concrete and abstract knowledge.
5. School Administrators should introduce the used of experiential learning approach in teaching not only Science but other subject areas.

Compliance with Ethical Standards

This study diligently addresses the appropriate ethics and concerns regarding the authority to conduct the study. The researcher of this study profoundly approaches the thesis adviser for the accuracy of the manuscripts, and strictly follows the suggestions made by the panel of experts during the correction phase. Moreover, the researcher also appreciates the importance of conducting research with commitment to uphold research excellence, data confidentiality, originality, while ethically safeguarding the rights and well-being of all individuals involved in the study.

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THE INFLUENCE OF BEAUTY CONTENT, CONTEXT, AND CREATOR IN THE TIKTOK MARKETPLACE ON THE ENGAGEMENT OF MANILA CONSUMERS

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ABSTRACT

As TikTok continues to flourish, understanding it as a digital marketplace requires further empirical inquiry. Given this, the current study aims to understand the influence of TikTok content, context, and creators on consumer engagement, particularly in the beauty industry. The information gathered from 398 Manila consumers, with a specific focus on those who have experienced buying beauty products in TikTok, was gathered using a survey and analyzed using Spearman's correlation analysis. The study's findings reveal that three independent variables, namely TikTok contents, contexts, and creators, significantly and positively influence the engagement of Manila consumers in the beauty industry.

Keywords: *customer engagement, beauty industry, TikTok marketing, content, creator*

INTRODUCTION

In this modern time, individuals have been hooked on using various social media platforms for entertainment. Despite the use of social media for this purpose, several studies have been conducted to determine their use as a digital marketing tool. For instance, in Jaakonmäki et al.'s (2017) study about the impact of social media marketing on user engagement, 96 percent of their 3,700 respondents reported utilizing different social media platforms for business. The same author reported that people are familiar with various social media engagements, especially with popular applications, which help consumers look for affordable products that they can use.

According to Farook and Abeysekara (2016), getting people to notice brand posts and encouraging them to engage with the material is a concern for a business. Engagements through social media are often measured by the number of likes and comments on posts (Chen et al., 2023) and user growth like followers and subscribers (Balbi et al., 2018). It is better if each of these indicators has a higher volume. Even though some posts do not receive too many likes, there is still a chance that they will influence people and have an unexpected impact on users in the future. Some posts may not have the full context, but it is one of the reasons why customers are curious about the content and look it up on the internet, making it part of their feed through the algorithm. With this, knowing the various interests and preferences of consumers helps in providing context for any social media postings made and improves communication with people.

One of the product lines flourishing through social media marketing is related to the beauty industry. Given the rise of beauty product advertisements on different social media platforms, many researchers have endeavored to investigate its influence on consumer behavior. For instance, in the study of Syawaluddin et al. (2019), three variables, namely social media marketing, e-marketing, and product quality, are identified as positive and significant factors influencing consumer's decision on purchasing cosmetics. Their data findings support the imminent relevance of the use of social media in advertising beauty products on different online platforms. Moreover, several studies have focused on how social media platforms, such as Instagram, Facebook, and Twitter, are used as advertising channels to boost customer engagement with beauty products. One of these empirical endeavors is the study of Lauwrence et al. (2024), wherein the application of direct messages through Instagram is empirically validated to be an effective way to interact with the company's customers, increase brand loyalty, and strengthen customer engagement. However, a paucity of studies on the utilization of the TikTok marketplace for the same purpose has been identified.

In this light, the current study focuses on TikTok's features to expand the current knowledge on how social media creators of beauty products, context, and content affect Manila users' engagement. Moreover, it aims at empirically identifying the benefits of TikTok as a platform for promoting beauty products.

Research Questions

Since this study aims to determine the statistical influences of TikTok's content, context, and creators of beauty products on the engagement of Manila consumers, the following questions were sought:

1. How does TikTok's content help significantly increase Manila consumers' engagement with beauty products?
2. How does TikTok context significantly boost beauty products' Manila consumer engagement?
3. How do TikTok beauty creators' popularity and reputation significantly affect Manila consumers' engagement?

In relation to these questions, the following null hypotheses were tested:

Ho_1: TikTok content related to beauty products has no significant influence on the engagement of select Manila consumers.

Ho_2: TikTok contexts related to beauty products have no significant influence on the engagement of select Manila consumers.

Ho_3: TikTok beauty creators' popularity and reputation do not significantly influence the engagement of select Manila consumers.

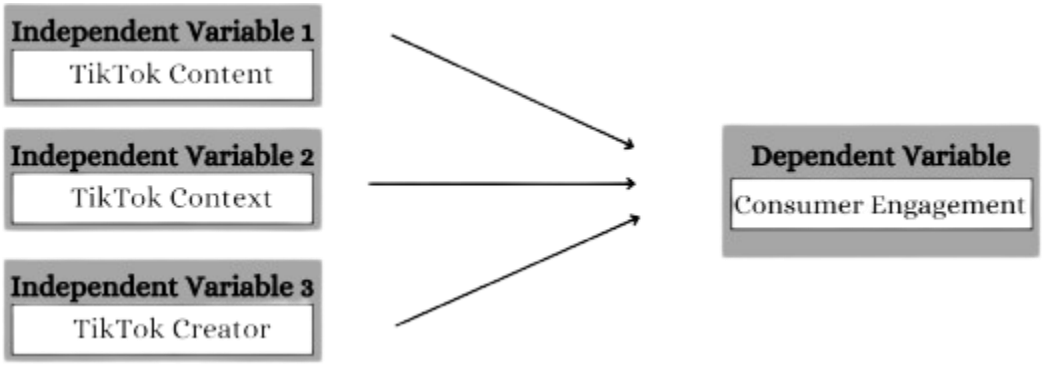
Conceptual Framework

Following Jaakonmäki et al.'s (2017) drivers of social media engagement, the study employed three independent variables – contents, contexts, and creators, as factors influencing the engagement of Manila consumers in beauty products promoted in the TikTok marketplace. According to the same authors, user engagement can be significantly impacted by the kind and quality of content provided on social media. Relevant, educational, interesting, and aesthetically pleasing content will likely catch users' attention and develop engagement. Moreover, user engagement can be affected by the context in which social media material is shared. For instance, content shared with the appropriate audience at the appropriate moment, on the appropriate platform, can result in more significant interaction than content shared at the incorrect time or on the incorrect platform. User engagement may also be controlled by the social media content creator. Mostly loyal followers of influencers and celebrities can use their support to extend the reach of content and increase engagement.

Considering these drivers of social media engagement, Figure 1 serves as the study's research paradigm. The figure shows that the three identified drivers – TikTok contents, contexts, and creators, independently influence the level of engagement of select Manila consumers with beauty products.

Figure 1

Research Paradigm



In the study, content is operationally defined as the medium of a TikTok post. Following the model of Jaakonmaki et al. (2017), content is considered as either of the three types – textual content, visual content, and audio content. Additionally, context is defined as the

storyline or meaning of the posted content. Notably, content and context vary in every TikTok post, which may affect customer engagement positively or negatively. Lastly, creators significantly affect customer engagement due to the reason that they are visible to the consumers. Creators are also a major factor in consumer engagement since they interact with the audience (Jaakonmaki et al., 2017).

METHODOLOGY

Research Design

This study employed correlational research to examine the relationships of beauty content, context, and creator in the TikTok marketplace with Manila consumer engagement. According to Cresswell (2012, as cited in Seeram, 2019), a correlational research design is a statistical test used to identify the relationship between two or more variables or sets of data. This design is considered, as it can be used to discover if the study's independent variables have significant influences on the customer engagement of select Manila consumers. Moreover, it is noteworthy that previous related studies like Jaakonmäki et al. (2017) and Darmatama and Erdiansyah (2021) utilized the same approach.

Sample and Sampling Technique

In this study, purposive sampling was used to determine the sample of Manila consumers that will be surveyed. According to Campbell et al. (2020), utilizing purposive sampling better matches the sample to the research goals and objectives, enhancing the study's rigor and the data's reliability. This sampling technique was conducted in this research to gather data from the most fitting and appropriate respondents. The following criteria were considered in the selection of the study's respondents: (1) must be 18-50 years old, (2) must be a user of TikTok, and (3) must be a consumer of beauty products/services. Through this sampling technique, 398 beauty consumers in Manila were included in the study. Using the G*Power software, this sample size exceeds the minimum required number of responses to determine a statistical effect in a bivariate correlational test (with a minimum sample size of n=84).

Data Gathering Procedure

This study utilized a self-developed survey questionnaire to collect data. The questionnaire comprises four-point Likert scale sub-questionnaires: consumer purchasing decisions, beauty products' TikTok content, beauty products' TikTok context, and beauty products' TikTok creator. An expert in the field of business administration validated the study's questionnaire. Before conducting the main study, the researchers conducted an internal and participatory pilot study to test and make changes to the research methods after receiving clearance from an ethics research committee. The

dataset collected from this pilot testing was used to check the reliability of the study's instrument using Cronbach's alpha. Since the resulting alphas all exceed 0.80, the four Likert scales were deemed internally consistent. Then, the actual data gathering transpired by administering the survey online.

Data Analysis

The study used quantitative strategies to analyze the data collected. The weighted means for each item and each scale were computed to describe the results of the Likert scales. Furthermore, Spearman's rho correlation test was used to identify the individual influences of the study's independent variables (TikTok beauty contents, contexts, and creators) on the engagement of Manila consumers. This mode identifies relations with two ranked variables and measures the data's strengths and direction. A positive correlation shows that the variables increase or decrease together, following each other. In contrast, a negative correlation shows that when one variable increases, the other decreases, and vice versa.

RESULTS AND DISCUSSION

Table 1 shows the respondents' level of engagement with beauty products in TikTok using weighted means. The respondents generally agreed on all the items pertaining to consumers' level of engagement, as evidenced by the overall weighted mean of 3.08. Specifically, the statement "Based on my observations, TikTok is an effective platform for customer engagements on beauty products" received the highest agreement level among the respondents, with a weighted mean of 3.40. On the other hand, the statement "I go to TikTok to discover new beauty brand finds" obtained the lowest assessment level with a weighted mean of 2.95. These findings suggest that the select Manila consumers are highly engaged with content or creators related to beauty products in TikTok.

Table 1

Agreement Levels on Select TikTok Consumer Engagement

Indicator	Weighted Mean	Interpretation
1. My TikTok "For you page" consists of more than ten beauty product related videos in a day.	2.98	Agree
2. I go to TikTok to discover new beauty brand finds.	2.95	Agree
3. My engagement in TikTok with new beauty products has led me into purchasing those products.	2.97	Agree

4.	Based on my observation, TikTok is an effective platform for customer engagement on beauty products.	3.40	Strongly Agree
	Overall Mean	**3.08**	**Agree**

Note. The verbal interpretation is based on the following: Strongly disagree: 1.00-1.75; Disagree: 1.76-2.50; Agree: 2.51-3.25; Strongly Agree: 3.26-4.00.

Table 2 summarizes the respondents' agreement levels on select indicators about the influence of TikTok content on their engagement with beauty products. The respondents strongly agree on all indicators, evidenced by the overall weighted mean of 3.41. Specifically, the statement "Content (Textual, Visual, Audio) matters in customer engagement" received the highest agreement level, with a weighted mean of 3.62. On the other hand, the statement "I engage with a beauty content TikTok video if it is eye-pleasing disregarding the creator and context of the video" obtained the lowest assessment level, with a weighted mean of 3.17. Accordingly, these findings imply that, on average, the select Manila consumers appear to highly engage with beauty products in any form of TikTok content.

These findings relate to the study of Ansari et al. (2019), stating that healthy content helps deliver brand activities and engage with customers. Furthermore, the data results on the statement "I like engaging in TikTok content that contains a visual demonstration about a product," which garnered a 3.62 weighted mean, further validates the findings of Adobe's (2014) *The Social Intelligence Report*, stating that posts with visual content are the best engaging contents.

Table 2

Agreement Levels on Select Indicators of TikTok Content and Consumer Engagement

	Indicator	Weighted Mean	Interpretation
1.	I like engaging in TikTok content that contains a textual description about a product	3.29	Strongly Agree
2.	I like engaging in TikTok content that contains an audio/voice-over description about the product.	3.44	Strongly Agree
3.	I like engaging in TikTok content that contains a visual demonstration about a product.	3.61	Strongly Agree
4.	When the text is appealing and high-quality, I engage in the TikTok video.	3.36	Strongly Agree
5.	When I find appearances of people in a TikTok video, I engage with it.	3.35	Strongly Agree
6.	When the audio is clear, relatable, and	3.46	Strongly Agree

	catchy, I engage in the TikTok video.		
7.	I engage with a beauty content TikTok video if it is eye-pleasing, disregarding the creator and context of the video.	3.17	Agree
8.	Content (textual, visual, audio) matters in customer engagement.	3.62	Strongly Agree
	Overall Mean	**3.41**	**Strongly Agree**

Note. The verbal interpretation is based on the following: Strongly disagree: 1.00-1.75; Disagree: 1.76-2.50; Agree: 2.51-3.25; Strongly Agree: 3.26-4.00.

Table 3 shows the respondents' assessment of context engagement using weighted means. The respondents mostly strongly agree on all items concerning context, as evidenced by the overall weighted mean of 3.29. Notably, the statement "Context matters in customer engagement" received the highest agreement from the respondents, with a weighted mean of 3.57. The following one, which received the second highest agreement from the respondents, the statement "I am most likely to engage with TikTok beauty posts about how effective the product is," received a weighted mean of 3.42. These results suggest that the context of posted content about beauty products in TikTok is a salient factor affecting the Manila consumers' level of engagement with said products. These outcomes are supported by Bilgin (2018), who states that having a good utility and knowing the use of a product from posts construct better consumer engagement. Correspondingly, these findings on context and engagement level verify the findings of the study of Jaakonmäki et al. (2017), which establish the salience of context in terms of increasing engagement level of consumers in products marketed in online domains.

Table 3

Agreement Levels on Select Indicators of TikTok Context and Consumer Engagement

	Indicator	Weighted Mean	Interpretation
1.	I am most likely to engage with posts that are about beauty product reviews.	3.09	Agree
2.	I am most likely to engage with TikTok beauty posts that show and use beauty products for Get ready with me (GRWM) videos.	3.20	Agree
3.	I am most likely to engage with TikTok beauty posts that compare and contrast two beauty products by product reviews.	3.19	Agree
4.	I am most likely to engage with TikTok beauty posts about how effective the product is.	3.42	Strongly Agree
5.	Context matters in customer engagement.	3.57	Strongly Agree

Overall Mean	**3.29**	**Strongly Agree**

Note. The verbal interpretation is based on the following: Strongly disagree: 1.00-1.75; Disagree: 1.76-2.50; Agree: 2.51-3.25; Strongly Agree: 3.26-4.00.

Table 4 shows the respondents' agreement levels on select indicators of creators' influence on their engagement with beauty products in TikTok. They generally agree on all the items on the scale, as evidenced by the overall weighted mean of 3.10. Specifically, the statement "Creator's current issues greatly impact my engagement with them" received the highest agreement levels among the respondents, with a weighted mean of 3.33. On the other hand, the statement "If a beauty content creator has 5k+ followers, I will most likely engage with them even if it is the first time I have seen them" obtained the lowest assessment levels with a weighted mean of 2.83.

Within the context of value co-creation, Ren et al. (2022) highlight the importance of carefully examining how social media content creators interact with customers, influence one another, and promote community building in commercial promotion initiatives. As the above findings validate creators' influence on consumer engagement, this study supports the statement of Ren et al. (2022).

Table 4

Agreement Levels on Select Indicators of TikTok Creator and Consumer Engagement

Indicator	Weighted Mean	Interpretation
1. I consider the beauty content creator's social reputation before engaging with them. If they have a good reputation, I will most likely engage with them.	3.32	Strongly Agree
2. Creator's current issues greatly impact my engagement with them.	3.33	Strongly Agree
3. If a beauty content creator is popular, I will most likely engage with them.	3.04	Agree
4. If a beauty content creator has 5k+ followers, I will most likely engage with them, even if it is the first time I have seen them.	2.83	Agree
5. I consider beauty content creator's popularity in terms of likes and followers before engaging with them.	2.94	Agree
6. I agree that more followers equate to higher customer engagement.	3.16	Agree
Overall Mean	**3.10**	**Agree**

Note. The verbal interpretation is based on the following: Strongly disagree: 1.00-1.75; Disagree: 1.76-2.50; Agree: 2.51-3.25; Strongly Agree: 3.26-4.00.

Table 5 illustrates the correlations between consumer engagement level and TikTok content, context, and creator using Spearman analysis. The results reveal significant positive relationships between consumer engagement with beauty products and TikTok content, context, and creator. TikTok context produces the highest positive correlation with consumer engagement (ρ=0.688, $p<0.05$), followed by TikTok content (ρ=0.514, $p<0.05$) and TikTok creator (ρ=0.458, $p<0.05$). These findings are associated with the research study of Jaakonmäki et al. (2017), which states that the main drivers of engagement are content, context, and creator, suggesting a positive relationship between consumer engagement and these variables. Given that TikTok context has the highest correlation with consumer engagement, it aligns with Bilgin's (2018) statement, implying that context is one of the most helpful marketing tools for improving consumer interaction with a product on social media.

Table 5

Correlations between Consumer Engagement and TikTok Content, Context, and Creator

Variables	Spearman rho	*p-value*	Decision	Relationship
Content and Consumer Engagement	0.514	0.000	Reject Ho_1	Positive and significant
Context and Consumer Engagement	0.688	0.000	Reject Ho_2	Positive and significant
Creator and Consumer Engagement	0.458	0.000	Reject Ho_3	Positive and significant

Note. Correlation is computed at a five (5) percent level of significance. If *the p*-value is less than 0.05, there is a significant relationship; thus, reject *Ho*. If otherwise, there is no significant relationship.

Conclusions and Recommendations

This descriptive-correlational study investigates the influence of TikTok content, context, and creator on the engagement level of select Manila consumers with beauty products. Through an online survey, the data results show strong positive correlations between the study's dependent and independent variables, implying the necessity of considering TikTok contents, contexts, and creators in developing more engaging and effective beauty TikTok campaigns. Therefore, the researchers came up with the following recommendations for online beauty product sellers:

1. **Prioritize visually engaging demonstrations**. Videos showcasing product applications, before-and-after effects, and unboxing experiences garnered the highest agreement for engagement. Creators should prioritize visually appealing demonstrations that clearly illustrate the product's benefits and usage.

2. **Enhance with appealing text and audio**. Supplement visual demonstrations with high-quality textual descriptions and clear, relatable voice-over explanations. This approach will provide additional context and strengthen the product's message.
3. **Embrace the power of aesthetics**. Create eye-pleasing videos with high production value to enhance viewer appeal and engagement.
4. **Consider incorporating the appearance of the creator**. Many viewers responded favorably to the presence of creators in the videos. However, ensuring that the creator aligns with the brand image and target audience is crucial.
5. **Embrace creative context formats**. Experiment with unique and engaging context formats to capture viewers' attention and stand out from the competition. Consider scenarios, challenges, or storytelling approaches to present product information in a captivating manner.
6. **Partner with influencers with good social reputations**. Prioritize collaborations with creators with a positive social image and align with your brand values. This approach ensures the partnership's authenticity and resonates with your target audience.
7. **Consider the creator's previous context creativity**. Evaluate the creator's past content and promotional experience to assess their ability to develop engaging and innovative contexts for showcasing your products. For further research, it is advisable to consider topics the current study could not cover. Specifically, future researchers are recommended to:
8. **Explore diverse scenarios and examples**. Further research is needed to analyze content, context, and creator variables within various scenarios and provide specific examples for different product types and target audiences.
9. **Investigate consumer interaction motivators**. Uncover the underlying reasons behind consumers' interactions with specific content, context, and creators. This knowledge can guide creators in crafting more targeted and effective content strategies.

In conclusion, creating effective TikTok content for beauty brands in Manila requires a holistic approach encompassing high-quality content, creative context, and reputable creators. By following these recommendations, brands can increase their chances of capturing viewers' attention, driving engagement, and ultimately achieving their marketing goals.

Compliance with Ethical Standards

This section assures that the collection of data from survey participants strictly abides by the ethical standards on data privacy and security, confidentiality, and anonymity. Moreover, the study's proposal manuscript and instrument underwent an ethics review, and the researchers received an ethical clearance before data gathering.

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THE LEVEL OF COMPLIANCE OF TEENAGE MOTHERS TO MATERNAL CARE FROM THE SELECTED BARANGAY HEALTH CENTERS IN MARIKINA CITY: BASIS FOR HEALTH TEACHING

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ABSTRACT

Compliance in maternal care is crucial for fetal health and preventing teratogens during pregnancy. While satisfaction is a key factor influencing compliance. Adolescent health remains a global health concern, and an issue targeted to be addressed by the SDGs. This study aimed to determine the level of compliance and satisfaction with maternal care given to teenagers in Marikina City namely Barangay Malanday and Barangay Tumana. This quantitative study utilized purposive sampling to collect data. The study was carried out with a total of 36 teenage mothers as respondents from the said both barangays. Results revealed that the youngest mother in the study was fourteen years old, and the youngest mother respondent during pregnancy was thirteen years old (13) and was only in Grade 6. Most of the mothers visited the health center for prenatal (86%) and immunization of the mothers (83%) and their level of satisfaction with receiving maternal care is noted to be highly satisfied (weighted mean of 1.75). The result also showed that the level of compliance of teenagers receiving maternal care from the health centers was slightly compliant (weighted mean of 2.64). Furthermore, the researchers discovered that there was no significant relationship between the level of satisfaction and level of compliance as assessed by the teenagers receiving maternal care from the selected health centers in Marikina City. The researchers composed a proposed health teaching for teenage pregnant/mothers, barangay health workers, and the parents, this aims to improve teenagers' compliance with health center visits.

Keywords: *Compliance, Satisfaction, Teenage pregnant/mother, Maternal Care*

INTRODUCTION

Health of women throughout pregnancy, childbirth, and the postpartum period is referred to as maternal health. To ensure that women and their unborn children achieve their maximum potential for health and wellbeing, each stage should be pleasant. Despite significant advancement over the past 20 years, 295, 000 women died during or after pregnancy and childbirth in 2017, this amount is just too high. In addition to indirect factors including anemia, malaria, and heart disease, the most frequent direct causes of maternal injury and death are excessive blood loss, infection, high blood pressure, botched abortion, and obstructed labor (World Health Organization [WHO], 2019). Thus, the effort of every professional to give care to the mother and unborn child is vital and needs more effort in order for the mother and child to have a safe delivery and to avoid morbidity and mortality.

Maternal morbidity and mortality remain a major global problem in developing and underdeveloped countries. Various international interventions have been implemented over the last 50 years, but they basically use the same objectives and indicators. This review traces the evolution of maternal and child health programs based on key global guidelines, from the 1978 Declaration on Primary Health Care to the Millennium and Sustainable Development Goals and relates the approaches they have generated to the Philippine experience. Maternal Mortality Ratio (MMR) is still increasing and yet becomes global health issue. Low Middle-Income Countries in the Southeast Asia region are greatly affected by the high rate of MMR. A lot of countries in the Southeast Asia didn't still reach the Sustainable Development Goals (Herwansyah et al., 2022).

According to Nisperos (2022) despite adherence to recommended goals and programs, health outcomes have not improved significantly. New strategies are said to offer new and innovative ways of doing things, but they basically suffer from the same old assumptions. This means that governments have limited resources and must use all available means to support interventions. Despite the current socio-economic climate shaped by neo-liberal and conservative policies, there continues to be a preference for low-cost, measurable programs that provide a minimum of basic services.

The Philippines faces a high Maternal Mortality rate, despite implanting various ways to use Maternal Health Care programs to provide Services in order to lessen it. Utilizing the maternity care services that are accessible might assist decrease maternal morbidity and death and close the gap between community adolescent mothers' need for and usage of such services (Cagayan et al., 2022). The maternal mortality and morbidity in the Luzon, Philippines has factors that affects teenage pregnant mothers to utilize the maternal services such as non availability of skilled health worker and financial status. It also identifies that the factors that deter the patient to receive maternal care services should be eliminated. By eliminating these barriers will help the local community to improve the Services given to teenage pregnancy and give them a chance to utilize the maternal health Service to lessen the maternal mortality. Less usage of medical services by women who give birth at home could result in more frequent atypical symptoms throughout the postpartum period. These symptoms may lead to the maternal mortality rate in the Philippines (Yamashita et al., 2017).

As cited in Hadian et al. (2019) a systematic review study in Iran 2017 showed that adolescents are at higher risk of complications in pregnancy and childbirth, which may interfere with Iran's national development goals (reduction of maternal mortality and morbidity). Adolescents face additional negative individual and societal responses to preterm birth and may therefore have less freedom to access services compared to older mothers (Hackett et al., 2019). Exavery et al. (2013 as cited in Hackett et al., 2019) states that in Tanzania it had reported that women who had unplanned pregnancies tend to be hesitant to visit antenatal care (ANC) this resonates with the experiences of many adolescents in our study who expressed embarrassment at an unexpected early pregnancy and subsequent reluctance to attend ANC.

Pregnant teenagers had factors that affected their everyday life, self esteem, and lack of budget. The maternal mortality and morbidity in Nigeria is increasing because of the lack of utilizing the Maternal Health Service (MHS) of pregnant teenage mothers. In the study of Odetola and Mekwunyei (2020) further discussed that the maternal health services had been proven that using it as a tool to provide maternal care to teenage pregnant mothers was very effective to lessen the rate of maternal mortality and morbidity. Encouraging the pregnant teenage mother to attend and use the MHS will help them and will lessen the mate

According to Sewpaul et al. (2021), there was evidence of a differing connection between the pregnant teens and the health staff. Adolescents experienced mistreatment and discrimination from the medical staff, which deterred them from visiting antenatal clinic A number of variables affect the multifaceted idea of maternal satisfaction. Maternal satisfaction with the delivery process is used to gauge how well the services offered are able to live up to customers' expectations. Additionally, happy customers are more likely to use the facility again in the future and tell their friends and family about it (Gejea et al., 2020). Satisfaction in patients gives them the urge to attend their appointments, comply with their medications, give the appropriate immunization to their babies or in general, it encourages them to receive all the care that they need during and after pregnancy for themselves and for their neonates. A key indicator of quality in healthcare systems is typically thought to be the degree of satisfaction with maternal healthcare services (Kidane et al., 2022) Promotion of good health and counseling and rehabilitation came up as two themes. Teenage first-time mothers wanted to learn more about important topics like family planning, breastfeeding, immunization, and self- and newborn care (Namutebi et al., 2021)

The municipal health officer of Mabini, Compostela Valley Dr. Gesim states that “because of the prenatal check-ups and the presence of the facilities, we have no more maternal deaths here in Mabini in 2017" (WHO, 2018, News section). The barangay health teams could now send pregnant women to the health center for high-quality maternal health services closest to home, in addition to the building, supplies, and equipment, which has been a great benefit of this project.

According to Islam and Masud (2018) Bangladesh's level of compliance with the WHO's recommended level of maternal care use during pregnancy, delivery, and the postnatal period is unsatisfactory. Bangladesh's government and non-governmental organizations have placed a great deal of focus on safe motherhood policies and programs, but the

nation is still a long way from having all women receive the required maternity care. Meanwhile, in the context of our health centers it is noted by Health Director Dr. Eric Tayag to ABS-CBN News that all health centers in the nation still need to strengthen leadership and governance, health finance, health information, availability of drugs, vaccinations, technology, human resource, and delivery services (Chanco, 2019). This shows that there are still problems specifically in the local health centers here in our country that still need to be assessed and be solved.

The researchers chose this study in order to evaluate how compliant are the teenage mothers in the selected barangay in Marikina City with regards to the maternal care services given to them. It is a fact that age is a big factor affecting the capability of taking responsibilities and obligations whether at home, work, school or even in their own health.

Research Questions

Given the increasing maternal mortality rate in the Philippines and the unique challenges faced by pregnant teenagers, this study ais to explore the level of compliance of maternal care given to teenagers by a selected Health center in Marikina City. The researchers also seek to find answer to the following questions:

1. What is the Demographic profile of the respondents in terms of
   1.1 Age
   1.2 Age when you got pregnant
   1.3 Educational Background
2. What is the maternal care needed in visiting selected health centers in Marikina City?
3. What is the level of satisfaction of the teenagers receiving maternal care from the selected health centers in Marikina City?
4. What is the level of compliance of teenagers receiving maternal care from the selected health centers in Marikina City?
5. Is there a significant relationship between the level of satisfaction of the teenagers receiving maternal care from the selected health centers and level of compliance of teenagers receiving maternal care from the selected health centers in Marikina City?
6. What measures can be proposed to assist the development aid in developing Health teaching?

METHODOLOGY

This quantitative study used a correlational approach to determine the compliance and satisfaction of teenage mothers to maternal care offered by the selected health centers in Marikina city. This measured how well they complied with and how satisfied they were with the maternal care they received both during and after pregnancy. The sampling method that was utilized by the researcher is total enumeration sampling in which the researcher decides to look at the complete population that has a specific set of characteristics. The researcher's target population were teenage mothers from the

selected Barangay Health Centers in Marikina City. Based on Marikina City Health Office, Barangay Tumana and Malanday were among the top 3 barangays which had the highest number of adolescent pregnancies and births in Marikina City. The researchers only accessed 25 teenage mothers from Barangay Tumana and 11 from Barangay Malanday with a total of 36 respondents from both barangay

The inclusion criteria were as follows:

- Pregnant teenagers (ages 13 -17) receiving prenatal care at Malanday Health Center and Tumana Health Center within the 3 years starting 2019.
- Teenage mothers (already given birth) receiving postnatal care at Malanday Health Center and Tumana Health Center within the 3 years starting 2019.
- Has an appointment and undergoes a follow-up check-up visit during and after pregnancy only in Barangay Malanday at Barangay Tumana Health Center in Marikina City

The exclusion criteria were as follows:

- Mothers ages 18 years old and above
- Pregnant mothers ages 18 years old and above
- Follow-up check-up and visits outside Barangay Tumana and Barangay Malanday Health Center Marikina City
- Pregnant teenagers who only took prenatal care in Barangay Tumana and Barangay Malanday in Marikina City
- Teenage parents who only took postnatal care in Barangay Tumana and Barangay Malanday in Marikina City.
- Teenage parents who were only going to Barangay Tumana and Barangay Malanday Health center for neonatal care after giving birth.
- Mothers who were in the intrapartum stage of pregnancy

The researcher was able to make a 36 self-made questionnaire in Likert scale of five choices. The questionnaire made by the researchers was validated by the experts, specifically an Obstetrician who had expert experiences in handling maternal services for legal aged mothers or maternal teenagers. Additionally, the researchers also asked for the validation of experts in the field of public health, specifically registered nurses who were in the public health sector, who knew the perspective of different services offered in a local health clinic. To test the reliability of the questionnaire, the researchers utilized Cronbach Alpha and were able to obtain a value of 0.82 interpreted as good internal consistency. The survey contained four parts in total where the part I contained the informed consent. Part II included the demographic profile of the respondents. Part III contained a Likert scale questionnaire to assess the level of satisfaction of the teenage mothers. For part IV this contained the level of compliance that was measured by the service quality of the health center rendered to the respondents. The answers that the

researchers obtained from the survey would be the data to be utilized in the next steps of the research.

The following arbitrary scale was used to interpret the data gathered:

Scale	Range	Verbal Interpretations	Adjectival Description for Level of Satisfaction	Adjectival Description for Level of Compliance
1	1.00 – 1.79	Strongly Agree	Highly Satisfied	Highly Compliant
2	1.80 – 2.59	Agree	Satisfied	Compliant
3	2.60 – 3.39	Neutral	Slightly Satisfied	Slightly Compliant
4	3.40 – 4.19	Disagree	Less Satisfied	Less Compliant
5	4.20 – 5.00	Strongly Disagree	Not Satisfied	Not Compliant

Figure 1. Arbitrary Scale

The researchers employed the following statistical treatment to interpret the data gathered such as the Frequency and Percentage, Weighted mean and Pearson r product correlation.

With constant communication with the Marikina City Health Office the researcher was able to obtain the approval from the City Health Office. With Marikina City Health Office recommendation to the two barangays the researchers was able to obtain data with the assistance of the Barangay Health Workers who helped the researchers to conduct a face to face survey.

RESULTS

Research Question #1. What is the Demographic profiles of the respondents in terms of:

Table 1.1 Demographic profile of the respondents in terms of age

Age	Frequency	Percentage
20	1	2.78
19	8	22.22

18	11	30.56
17	11	30.56
16	2	5.56
15	1	2.78
14	2	5.56
Total	**36**	**100.00**

Table 1 shows the demographic profile of the respondents in terms of age. Notice that the most frequent age of the respondents were ages 17-18 years old with 30.56%. The oldest respondent was only twenty years old only. Youngest mother was fourteen (14) years old.

Table 2. Demographic profile of the respondents in terms of age during pregnancy

Age	Frequency	Percentage
17	16	44.44
16	9	25.00
15	4	11.11
14	6	16.67
13	1	2.78
Total	**36**	**100.00**

Table 2 shows the age of the respondents during pregnancy. Most common age of the mother respondents was seventeen (17) with frequency of 16. The youngest age was thirteen (13) years old.

Table 3. Demographic profile of the respondents in terms of educational background

Educational Backgroun	Frequency	Percentage
Grade 12	1	2.78
Grade 11	9	25.00
Grade 10	3	8.33
Grade 9	9	25.00

Grade 8	7	19.44
Grade 7	6	16.67
Grade 6	1	2.78
Total	**36**	**100.00**

Table 3 revealed the educational background of the mother respondents. Noticed that most of them were in Grade 9 and Grade 11 with a frequency of eleven (11). Youngest was in Grade 6.

Research Question #2. What is the maternal care needed for visiting selected health centers in Marikina City?

Table 4. Maternal Care needed for Visiting selected Health centers in Marikina City

Maternal Care	Frequency	Percentage
Pre-natal	30	83.00
Post-natal	24	67.00
Immunization for mother	31	86.00
Immunization for baby	29	81.00
Family Planning	22	61.00
Health Counseling	21	58.00
Health Education	26	72.00

***Multiple response; n=36*

Table 4 shows the maternal care needed for visiting selected health centers in Marikina City. Observed that the frequency is more than the total number of the respondents since the visiting mother respondents have more than one reason for visiting the health center. Observes that in their barangay, 21 adolescent moms have a lower frequency of receiving health counselling and family planning. Most of them visit for pre-natal and immunization of the mother.

Research Question #3. What is the level of satisfaction of teenagers receiving maternal care from the selected health centers in Marikina City?

Table 5. The Level of Satisfaction of the Teenagers Receiving Maternal Care from the selected Health Centers in Marikina City

Level of Satisfaction	Weighted Mean	Verbal Interpretation
1. The services that I need were provided for me.	1.78	Strongly Agree
2. The service for my health problems were managed appropriately.	1.94	Agree
3. First time services were performed right for me.	1.83	Agree
4. They fulfilled the needed service for me and performed at the right time.	1.86	Agree
5. Error-free services were maintained for patients like me.	1.64	Strongly Agree
6. Health care services were well explained by the service provider.	1.72	Strongly Agree
7. Services were prompt for patients like me.	1.67	Strongly Agree
8. Health service providers were courteous and approachable.	1.78	Strongly Agree
9. My questions and queries were attended to by the health workers.	1.64	Strongly Agree
10. My concerns were handled professionally by the health workers.	1.64	Strongly Agree
11. I felt safe and comfortable during the consultation or health check-up.	1.67	Strongly Agree
12. My health is dealt with by the health care workers with tenderness, love and care.	1.72	Strongly Agree
13. I performed the exercises recommended by my doctor or healthcare provider.	1.75	Strongly Agree
14. My needs were understood by the health care workers.	1.83	Agree
15. Modern equipment was utilized for my consultation.	1.83	Agree
16. The facility maintains a clean environment for patients like me.	1.67	Strongly Agree

17. The health care workers were neat and well-groomed while attending patients like me.	1.64	Strongly Agree
18. Services are properly advertised through visual aids for patients like me.	1.92	Agree
Over-all Weighted Mean	**1.75**	Strongly Agree (Highly Satisfied)

Table 5 shows the level of satisfaction of the teenagers receiving maternal care from the selected health centers in Marikina City. The highest computed weighted mean of 1.64 was found in 4 statements numbers 5,9,10 and 20 “Error free services were maintained for patients like me, my questions and queries were attended to by the health workers, my concerns were handled professionally by the health workers and the health care workers were neat and well-groomed while attending patients like with verbal interpretation “strongly agree”. This implied that the health care workers were careful in giving service to make sure that findings were free from errors, handling their patients professionally.

While the lowest computed weighted mean of 1.94 was found in the statement number 2, “The service for my health problems were managed appropriately” verbally interpreted agree. This meant that most of the respondents agreed that their health problems were managed appropriately. The over-all weighted mean was 1.75 with verbal interpretation strongly agree. Using the arbitrary scale, it is equivalent to being highly satisfied. This implied that the level of satisfaction of the teenagers receiving maternal care from the selected health centers in Marikina City was highly satisfied. Health care workers professionally handled their patients and gave prompt service.

As per Kidane et al. (2022) a key indicator of quality in healthcare systems is typically thought to be the degree of satisfaction with maternal healthcare services. To determine how satisfied moms were with their care during delivery.

Research Question # 4. What is the level of compliance of teenagers receiving maternal care from the selected health centers in Marikina City?

Table 6. The Level of Compliance of the Teenagers Receiving Maternal Care from the selected Health Centers in Marikina City.

Level of Compliance	Weighted Mean	Verbal Interpretation
1. I know that the purpose prenatal/postnatal is to avoid complications during pregnancy.	1.58	Strongly Agree
2. I’ve had trouble remembering when to attend my prenatal/postnatal appointments.	2.53	Agree

3. I did not attend my prenatal/postnatal appointment because I feel I do not need it.	3.64	Disagree
4. My prenatal/postnatal appointments are not helping me.	4.17	Disagree
5. My physical problems keep me from attending my prenatal/postnatal appointments.	3.50	Disagree
6. I think that any of my postnatal/prenatal consultations were giving me a good effect.	1.56	Strongly Agree
7. I know all the dates of my prenatal/postnatal appointments because I am very eager to do it for my pregnancy.	1.83	Agree
8. I think that I need all of my prenatal/postnatal appointments.	1.64	Strongly Agree
9. In the past 6 months, I have had difficulty getting a new prenatal/postnatal appointment.	3.75	Disagree
10. I often missed attending my prenatal/postnatal appointment.	3.56	Disagree
11. I have forgotten attending any of my prenatal/postnatal appointments within the past few months.	3.25	Neutral
12. The cost of my prenatal/postnatal check-up concerns me.	3.81	Disagree
13. I took the needed test such as CBC, blood sugar, urinalysis etc. as it is needed in my check up during my pregnancy and advised by my Doctor.	1.89	Agree
14. I am following my doctor's recommended diet.	2.22	Agree
15. I am taking my vitamins and medicines that are prescribed by my doctor.	1.92	Agree
16. I attended my required prenatal/postnatal check-ups.	2.03	Agree
17. I performed the exercises recommended by my doctor or healthcare provider.	2.81	Neutral
18. I am taking the vaccines and immunizations advised by my Doctor. (Ex. Tetanus Toxoid)	1.81	Agree
Over-all Weighted Mean	**2.64**	**Neutral (Slightly Compliant)**

Table 6 shows the level of compliance of teenagers receiving maternal care from the selected health centers in Marikina City. The highest computed weighted mean of 1.56 was found in statement number 6, "I think that any of my postnatal/prenatal consultations were giving me a good effect" with verbal interpretation of strongly agree.

This implied that the teenagers who received maternal care acknowledged that the post-natal and prenatal consultations gave them good effect. This validated the lowest computed weighted mean of 4.17 in statement number 4, that “prenatal/postnatal appointments are not helping me”. This implied that their schedule postnatal/prenatal were important in order to make sure that the babies were alive and healthy in their womb. The over-all weighted mean was 2.64 with verbal interpretation of neutral. Based on the arbitrary scale, neutral means slightly compliant. This implied that the level of compliance of teenagers receiving maternal care from the selected health centers in Marikina City were slightly compliant.

According to Hadian et al. (2019) adolescent pregnancy is a public health concern that affects mothers, their children, and the wider community. Complications of pregnancy and childbirth remain a leading cause of mortality and morbidity among adolescent girls worldwide and can be influenced by lifestyle choices. Teenage pregnancy rates are on the rise worldwide and recent changes in family planning policies in Iran are estimated to increase teenage pregnancies in the near future. Current research suggests that teenagers be provided accurate information on pregnant women's health habits and related factors.

In the study of Odetola and Mekwunyei (2020) further discussed that the Maternal health services has been proven that using it as a tool to provide Maternal care to Teenage pregnant mothers is very effective to lessen the rate of maternal mortality and morbidity. Encouraging the pregnant teenage mother to attend and use the Maternal Health Service (MHS) will help them and will lessen the Maternal mortality and morbidity rate, especially in the undeveloped countries.

Research Question #5. Is there a significant relationship between the level of satisfaction of the teenagers receiving maternal care from the selected health centers and level of compliance of teenagers receiving maternal care from the selected health centers in Marikina City?

Table 7. Test of Relationship between the Level of Satisfaction and Level of Compliance of the Teenagers receiving Maternal Care from the selected Health Centers in Marikina City

Pearson r Value	Sig-Value	Decision	Verbal Interpretation
0.201	0.240	Accept	Not Significant

Table 7 shows the relationship between the level of satisfaction and level of compliance of the teenagers receiving maternal care from the selected health centers in Marikina City. The computed Pearson r value was 0.201 with significant value 0.240 which was greater than the level of significance 0.05, therefore the hypothesis was accepted. There was no significant relationship between the level of satisfaction and level of compliance as assessed by the teenagers receiving maternal care from the selected health centers in Marikina City.

This implied that even the health care workers professionally handled their patients and gave prompt service was rated highly satisfied. Although the level of compliance assessment of the teenagers who are receiving maternal care was slightly compliant.

As cited in Hadian et al. (2019) a systematic review study in Iran (2017) showed that adolescents are at higher risk of complications in pregnancy and childbirth, which may interfere with Iran's national development goals (reduction of maternal mortality and morbidity). Consequently, the development of an adolescent-specific health practice improvement strategy can have a significant role in achieving national development goals. Given the high risk of teenage pregnancy, maternal and neonatal complications and the positive impact of health practices on health status and reduction of adverse maternal and neonatal outcomes, health practices in pregnancy should be encouraged, especially in adolescents.

According to the study of Namutebi et al. (2021) promotion of good health and counseling and rehabilitation came up as two themes. Teenage first-time mothers wanted to learn more about important topics like family planning, breastfeeding, immunization, and self- and newborn care. They pointed out that health professionals must keep an eye on their vital signs because doing so helps with disease prevention and treatment as well as early diagnosis of complications. Others said that health professionals were crucial in mediating between them and their estranged parents and in establishing linkages between them and community organizations that might offer them counseling and life skills. This shows that the role of health care workers were vital for the first time teenage mothers in where they stand as their guide in place of their parents. Thus, health care workers must give extra attention to take care of the teenage mothers in order to answer their worries and questions.

Research Question #6. What measures can be proposed to assist the development aid in the development of health teaching?

Proposal	Expected Result
For the maternal teenagers / young parents	
Teach the teenage pregnant/mother about the importance of pre and postnatal care and the teratogenic factors that can affect the fetus/baby.	Teenage pregnant who learned information about prenatal care, will be able to attend future appointments/consultation.
Give information on why compliance to consultation at the Health Center are important for their baby/fetus and themselves.	The number of pregnant teenagers' compliance to their follow up checkup in the health center increases.
Include the importance of healthy lifestyle choices such as exercise, walking and	Numbers of maternal teenagers will be less anxious and more prepared for giving

yoga to prepare their perineal muscles for giving birth and to promote good circulation, and as well as to lessen the stress they are experiencing such as anxiety and overthinking.	birth and the young parents who newly give birth will do it for faster wound healing.
Inform the maternal teenagers and young parents about the affordable nutritious food.	The teenage parents and maternal teenagers identify healthy and nutritious food that will benefit both the mother and the baby that will also fit on their budget.
Encourage the target population to adhere and continuously learn more about breastfeeding and its importance.	The teenage parents will be more adherent to breastfeeding their babies. While the maternal teenagers will verbalize the importance of breastfeeding after giving birth.
Instruct the importance and encourage both target populations to take the medications and vitamins prescribed for them and their babies.	Both target populations will take advantage of the free services including medications and vitamins and regularly take it for them and the baby.
Encourage both target populations in adhering with regards to immunizations needed for them and their babies and its importance.	Both target populations will attend and willingly participate on their immunization schedule whether for the mother or the baby.
Encourage both target populations to attend parenting sessions even before or after giving birth to inform them the importance of good parenting strategies, safety precautions and techniques.	Both target populations will be able to demonstrate basic safe techniques in taking care of their babies and verbalize good parenting strategies.
For the Barangay Health Workers Encourage Barangay Health Worker to establish better rapport in serving the target population to understand more about their concern.	The target population openly verbalizes their concerns and needs to the Barangay health worker.
Encourage the BHWs to have a focus assessment especially for maternal teenagers and young parents.	The BHWs will have one on one assessment for each target population and thoroughly address their independent needs.
Inform the importance of continuous monitoring for maternal teenagers and	The Barangay Health Center will have 3 days in a week separated check-ups

young parents and suggest a more frequent and accessible operation schedule for check-ups.	accessible and exclusive for the maternal teenagers and young parents.
Motivate the BHWs in doing home visit especially those who are remotely located to the Barangay Health Center to encourage the maternal teenagers and new young parents to comply and set up an schedule in the Barangay health center for close monitoring.	The BHWs will visit the target population in the remote area for close monitoring, and encourage those who are noncompliant in attending the regular schedule needed for them and their babies.
Instruct the BHWs to emphasize free services and medications the Barangay Health Center readily provide for the target population.	The target population will be less anxious with regards to their financial concern in acquiring health services including medications and will be more aware of the free services given by their Barangay health center.
For the Parents Encourage parents to guide their child in doing good parenting techniques, safety precautions and techniques.	The target population will be easily monitored at home while doing safety precautions in parenting strategies and techniques.
Instruct parents to encourage their child to adhere to the health appointments needed for both the mother and the baby.	The target population will be guided accordingly about their appointments as their parents are assisting them in their schedule and avoid missed appointments.
Instruct parents to monitor their child's lifestyle with regards to food, vitamins and nutritional diet as well as the exercise needed in avoiding maternal and child complications.	The target population will be assisted by their parents in doing lifestyle modifications and acquire proper diet and vitamin intake to avoid maternal and child complications.
Assist parents to recall proper breastfeeding techniques and its importance so they can assist their child in doing it.	The target population will be assisted by their parents in breastfeeding and avoid the danger of misdoing the procedure.

Figure 2. Proposed Health Teaching Output

Figure 3 shows the researcher's proposal for health teaching. The researchers propose to teach the teenage pregnant/ mother about the importance of prenatal and post-natal care and the teratogenic factors that can affect the baby in their womb. This will help them be informed and able to attend the scheduled consultation.

Secondly, the researchers would like to give information about why they need the compliance of the schedule consultation at the health center and its health benefit not only for the teenage mother but also for the babies. This may lead to an increase of the number of pregnancies that will go to the health center for follow-up. Furthermore, Pregnant teenagers cooperation with health advice can help barangay health workers and other healthcare professionals manage systemic, comprehensive, and innovative methods for experiencing a successful pregnancy and delivery of the baby.

According to the study of Namutebi et al. (2021) promotion of good health and counseling and rehabilitation came up as two themes. Teenage first-time mothers wanted to learn more about important topics like family planning, breastfeeding, immunization, and self- and newborn care. They pointed out that health professionals must keep an eye on their vital signs because by doing so helps with disease prevention and treatment as well as early diagnosis of complications. Others said that health professionals were crucial in mediating between them and their estranged parents and in establishing linkages between them and community organizations that may offer them counseling and life skills. This shows that the role of health care workers are vital for the first time teenage mothers in which they will stand as their guide in place of their parents. Thus, health care workers must give extra attention to take care of the teenage mothers in order to answer their worries and questions.

Overall, this shows the total need of collaboration between the 3 including the target population (maternal teenagers and young parents), barangay health workers and the parents to empower the participation and compliance of the target population in acquiring their health needs especially during and after pregnancy. All the proposed health teaching by the researchers will be a big help for service modification to be able to guide the target population from the Barangay Health Center or even within their home in getting use of their everyday lifestyle now that they are about to have a child or already have one. Parents' guidance from within the home and the acceptance from the Barangay Health Center from a very little concern up to addressing their major needs will make the target population feel important and accepted, and by doing so, they will feel comfortable in attending their consultation as they know they have a special space from those people who they might be willing to get help from.

DISCUSSION

The summary of findings was drawn based on the data gathered:

1. In table 1 the most frequent age of the respondents were ages 17-18 years old with 30.56%.
2. In table 2 most of the age of the mother respondents was seventeen (17) years old with frequency of 16.
3. In table 3 most of them became pregnant when they were in Grade 9 and Grade 11.
4. Table 4 shows that the visiting mother respondents had more than one reason for visiting the health center. Most of them visited for prenatal and immunization of the mother.

5. Table 5 shows the level of satisfaction of the teenagers receiving maternal care from the selected health centers in Marikina City. The overall weighted mean was 1.75 with verbal interpretation of strongly agreed. Using the arbitrary scale, it was equivalent to being highly satisfied.
6. Table 6 shows the level of compliance of teenagers receiving maternal care from the selected health centers in Marikina City. The overall weighted mean was 2.64 with verbal interpretation of neutral. Based on the arbitrary scale, neutral meant slightly compliant. This implied that the level of compliance of teenagers receiving maternal care from the selected health centers in Marikina City were slightly compliant.
7. Table 7 shows the test of relationship between the level of satisfaction and level of compliance of the teenagers receiving maternal care from the selected health centers in Marikina City. The computed Pearson r value was 0.201 with significant value 0.240 which was greater than the level of significance 0.05, therefore the hypothesis was accepted. There was no significant relationship between the level of satisfaction and level of compliance as assessed by the teenagers receiving maternal care from the selected health centers in Marikina City.
8. Figure 3 shows the researchers proposal for health teaching and the expected outcome that teenage pregnant/mothers will be able to do for future consultations/appointments and hence, increase their compliance in the selected health centers in Marikina City. It also shows the health teaching proposal for the Barangay Health Workers that it needed to be modified and by doing so, would be able to encourage the young parents and maternal teenagers to adhere in their appointments with regards to their health and their children. Lastly, was the proposed health teaching for the young parents and maternal teenagers' parents that would be able to assist and guide them even within their homes.

Conclusions

The following conclusions were drawn based on the summary of findings:

1. The oldest respondent was only twenty years old only. Youngest mother was fourteen years old. The youngest mother respondents during pregnancy is thirteen (13) years old who was only in Grade 6.
2. Most of them visited the health center for prenatal and immunization of the mother.
3. The level of satisfaction of the teenagers receiving maternal care from the selected health centers in Marikina City was highly satisfactory. Health care workers professionally handled their patients and gave prompt service.
4. The level of compliance of teenagers receiving maternal care from the selected health centers in Marikina City were slightly compliant.
5. There was no significant relationship between the level of satisfaction and level of compliance as assessed by the teenagers receiving maternal care from the selected health centers in Marikina City.

Recommendations

This study showed that compliance and satisfaction had no significance. The result showed that the respondents were highly satisfied with the healthcare workers, who worked professionally and the respondents' compliance to maternal care service were slightly compliant. Based on the survey results, the researchers offer the following recommendations:

1. To guide the students to comprehend the importance of teenage mother's compliance and satisfaction with maternal care as well as its quality.
2. To the teenagers to be aware and ready to be compliant into taking care of themselves and the baby if they become pregnant in the future.
3. Pregnant mothers to be motivated when it comes to their prenatal or postnatal appointments. And to know the importance of compliance to their appointments.
4. To the parents to be well informed and encourage their children when it comes to compliance. Search the consequences of non-compliance so that they will set as an example to their children to be compliant to their prenatal and postnatal appointments
5. To the health centers, may this be a foundation for health education as well as an assessment of whether teenage mothers receiving care are satisfied with the services they are receiving, also whether they are sufficient and appropriate for them. It will also be enable them to encourage teenager mothers who are missing appointments and/or who have not visited a health center since they first became pregnant.
6. To the Health Policy Maker, may they use as their guide as they work with the school to develop a plan in creating an adolescent center connected to the local government unit (LGU) where thay can go if they become pregnant and have concerns about their health or the health of their unborn children, even without the supervision of their parents.
7. To the School Administrator, may this be a foundation on how they will cope with the students in their school that having pregnant teenagers, on how they will treat them and on how they will give solution for those teenage mother who can't manage their time to go to school and do certain task that will compromise their pregnancy. Professional development sessions for teachers should be held, giving them the chance to be trained to be knowledgeable and better able to discuss with the students the key components of the curriculum. With the high school to increase teacher and parental awareness about the teenage pregnancy and their compliance for their health.
8. To the Local Government Unit, may this be their basis for further health teaching for young individuals not only for women. All government organizations and tools are mandated to find and execute workable interventions, such as comprehensive sexuality education, educational and career possibilities for youth, and health promotion through media and communications, in order not only to combat teenage pregnancies but also implement the strategies on compliance about their health and babied.

9. To the future researcher, to expand the findings, more studies should be done on a bigger sample of this population. To be able to know the depth of the compliance of maternal teenagers in different locale and on bigger population.

Compliance with Ethical Standards

First and foremost, the researchers conduct the survey and let the respondents do a voluntary participation wherein they are free to withdraw or give their answers in the surveys at any point in time. The researchers provided an informed consent where the participants will be able to know the purpose, the benefits, the risk and the reason behind the study before they agree or decline to join. The researchers maintained their anonymity, personal identifiable data is not collected aside from the demographic data we needed for the research. Confidentiality is also utilized wherein the researchers kept all the data and information that was collected for academic purposes only and hidden from everyone else aside from the researchers. The researchers also apply the ethical principle of nonmaleficence where we do not implicate any potential harm, physically, emotionally, socially and psychologically. Lastly, and the result of communication wherein the researchers tried their best to make the research plagiarism free, to avoid research misconduct and accurately represent the result.

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TPACK AND COMPUTER LITERACY AS PREDICTORS OF KNOWLEDGE AND UNDERSTANDING IN PLANE AND SOLID GEOMETRY

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ABSTRACT

This study determined the influence of technological pedagogical content knowledge and computer literacy on knowledge and understanding of plane and solid geometry among mathematics students in Agusan del Sur. A quantitative predictive-correlational design was utilized in this study to investigate the relationship between the three variables. Purposive sampling was used to choose the respondents in this study. Data used in this study were gathered through adapted questionnaires validated by experts. The statistical tools used were mean, standard deviation, Pearson product-moment correlation, and multiple regression. This study revealed that higher education institution teachers had a very high level of TPACK. Moreover, mathematics students have a high level of computer literacy and a moderately high level of knowledge and understanding of the plane and solid geometry. The relationship between TPACK and knowledge and understanding of plane and solid geometry was positive and significant. In addition, the relationship between computer literacy and knowledge and understanding of plane and solid geometry was positive and significant. Results showed that the teachers' TPACK significantly influenced the students' knowledge and understanding of plane and solid geometry.

Keywords: *Education, TPACK, Computer Literacy, Knowledge and Understanding in Plane and Solid Geometry, Predictive Correlation, Philippines*

INTRODUCTION

Mathematics is essential in almost every field and is a necessity for people of all ages to be successful in life (Andaya, 2014). Despite mathematics' utility in daily life, several variables impair students' ability to comprehend and apply mathematical concepts. Plane and solid geometry, in particular, is a critical component of mathematics education. Due to its significance, geometric material is assigned to students from elementary to upper secondary school. However, Purwasih et al. (2019) report that, although students have been exposed to geometry material from elementary school, junior high school students frequently struggle with it, particularly when solving plane and solid geometry problems. This result is comparable to Hidaya's (2018) assertion that certain mathematics ideas, particularly geometry, are poorly understood by students. Many students struggle to solve simple problems due to a lack of grasp of pre-requisite ideas. Similarly, low achievement in Geometry thinking at the secondary level may result in a dearth of students who successfully pursue Geometry-related fields at the university level (Wahab et al., 2017).

While school effectiveness and teacher competency affect learning and promote higher levels of accomplishment (Andaya, 2014), secondary students continue to do badly on compulsory solid geometry questions on public examinations (Meng & Idris, 2012). It is also necessary for mathematics teachers, as well as college and university lecturers, to ascertain their students' levels of thinking before starting the geometry course for students and pre-service teachers and to adjust the teaching level to the students' level (Patkin, 2014). Meanwhile, the Indonesian curriculum heavily encourages the use of manipulatives in mathematics education. This was owing to students' limited comprehension of certain mathematics concepts, particularly geometry (Hidaya, 2018). This situation is exacerbated when their teachers do not adequately understand some geometry topics. The same holds for geometry achievement among students in Minna, Niger State, Nigeria's senior secondary schools. Gambari et al. (2014) attribute the challenges and problems encountered by secondary school students in geometry to an insufficient understanding of the rubrics for creating, measuring, and identifying plane shapes from solids. This concerning trend has prompted numerous scholars to investigate the cause(s) of poor mathematics performance among senior secondary school students. Additionally, the study by Pentang et al. (2021) investigated prospective elementary teachers' problem-solving abilities and capabilities (PETs) in the Northern Philippines. It was shown that prospective primary teachers fared poorly on assessments. It demonstrated an insufficient understanding of unit conversion and an inability to answer problems involving perimeter, area, and volume. PETs fared particularly poorly on easy and average items. These indicate PETs' limited capability in measuring the perimeter of a square and converting from inches to feet and determining the area of a rectangle and converting from kilometers to meters. Additionally, they fared poorly on the challenging item. This result demonstrates PET's inability to calculate the volume of a regular prism and the conversion from hectares to square meters. The findings indicated that future educators might be unable to impart measuring competency to their students.

Furthermore, the majority of previous research centered on mathematics in general. Urbina and Polly (2017) focused on how primary school teachers used technology in their classrooms to teach mathematics. Also, Patahuddin et al. (2016) examined the difficulty of technology integration in mathematics classrooms using the TPACK framework. Finally, Young (2017) published a study that presents a complete systematic evaluation and critique of the design and reporting of meta-analytic studies on technology integration in the mathematics classroom. A small number of researchers have focused on Plane and Solid Geometry. As a result, the researcher argues that the study linking teachers' technological pedagogical content knowledge and computer literacy to students' knowledge and understanding of plane and solid geometry is both relevant and timely.

The information gathered during this investigation can be a starting point for school administrators, deans, instructors, and other stakeholders to establish programs to support students' topic learning. Also, The researchers have planned to disseminate the result of this study through a paper presentation during an in-house research forum at the local, regional, national, and even at international levels. Moreover, the publication of this paper could also be another goal for the vast dissemination of the findings.

Research Questions

This study aimed to determine if technological pedagogical content knowledge and computer literacy of mathematics students predict knowledge and understanding in plane and solid geometry. Specifically, it sought answers to the following questions:

1. What is the level of the teachers' TPACK in terms of:
    - 1.1 Technological Knowledge;
    - 1.2 Pedagogical Knowledge;
    - 1.3 Content Knowledge;
    - 1.4 Pedagogical Content Knowledge;
    - 1.5 Technological Content Knowledge;
    - 1.6 Technological Pedagogical Knowledge; and
    - 1.7 Technological Pedagogical Content Knowledge?
2. What is the level of students' computer literacy in terms of:
    - 2.1 Software;
    - 2.2 Hardware;
    - 2.3 Multimedia;
    - 2.4 Network;
    - 2.5 Information ethic; and
    - 2.6 Information security?
3. What is the level of students' knowledge and understanding in plane and solid geometry in the areas of:
    - 3.1 Triangles and quadrilaterals;
    - 3.2 Circles; and
    - 3.3 Solids?
4. Is there a significant relationship between:
    - 4.1 TPACK and knowledge and understanding in plane and solid geometry; and

4.2 computer literacy and knowledge and understanding in plane and solid geometry?
5. Do TPACK and computer literacy significantly influence knowledge and understanding in Plane and Solid Geometry?

METHODOLOGY

This study used a quantitative research design, specifically the Predictive-correlational technique, to investigate the influence of TPACK and computer skills on teachers' knowledge and understanding of plane and solid geometry. This study design seeks to forecast future results by analyzing the relationships between variables. Further, the respondents of the study were the students from the selected higher educational institutions in the Province of Agusan del Sur. There were 170 respondents taken from the population size of the three big schools through the Raosoft sample calculator. This study used purposive sampling as the researcher selected the respondents according to the inclusion criteria. In addition, data gathering was done through online survey questionnaires through Google Forms after the researcher collected informed consent from the respondents. The procedure is deemed appropriate in the context of the pandemic and following the Inter-Agency Task Force (IATF) for management of emerging infectious disease resolution no. 38 series of 2020. The data analysis process used Mean and standard deviation to measure the levels of TPACK, computer literacy, and knowledge and comprehension in the plane and solid geometry. Pearson Product Moment Correlation and Regression Analysis were used to predict relationships between independent variables, specifically TPACK and computer literacy, and the dependent variable.

RESULTS

Table 1. Level of Level of Teachers' TPACK

Teachers' TPACK	Mean	SD	Description
Technological Knowledge	4.11	0.72	High
Pedagogical Knowledge	4.34	0.60	Very High
Content knowledge	4.41	0.71	Very High
Technological Pedagogical Knowledge	4.55	0.57	Very High
Technological Content Knowledge	4.24	0.63	Very High
Pedagogical Content Knowledge	4.23	0.68	Very High
Technological Pedagogical Content Knowledge	4.29	0.66	Very High
Overall Mean	**4.31**	**0.56**	**Very High**

Table 2. Level of Computer Literacy of Students

Computer Literacy	Mean	SD	Description
Software	4.41	0.70	Very High
Hardware	3.64	0.89	High
Multimedia	3.90	0.81	High
Network	4.64	0.55	Very High
Information Ethic	4.15	0.80	Very High
Information Security	4.11	0.84	High
Over-all mean	**4.14**	**0.59**	**High**

Table 3. Level of Students' Knowledge and Understanding in Plane and Solid Geometry

Plane and Solid Geometry Areas	Mean	SD	Description
Triangles and Quadrilaterals	45.42	18.26	Moderately High
Circles	35.35	16.38	Low
Solids	42.43	17.56	Moderately High
Overall	**41.05**	**14.40**	**Moderately High**

Table 4.1Significance of the Relationship between TPACK and Knowledge and Understanding in Plane and Solid Geometry

	Knowledge and Understanding in Plane and Solid Geometry		
TPACK	r-value	p-value	Remarks
Technological Knowledge	0.29	0.00	Significant
Pedagogical Knowledge	0.34	0.00	Significant
Content Knowledge	0.36	0.00	Significant
Pedagogical Content Knowledge	0.37	0.00	Significant
Technological Content Knowledge	0.31	0.00	Significant
Technological Pedagogical Knowledge	0.25	0.00	Significant
Technological Pedagogical Content Knowledge	0.20	0.01	Significant

Overall	**0.36**	**0.00**	**Significant**

Table 4.2. Significance of the Relationship between Computer Literacy and Knowledge and Understanding in Plane and Solid Geometry

	Knowledge and Understanding in Plane and Solid Geometry		
Computer Literacy	r-value	p-value	Remarks
Software	0.29	0.00	Significant
Hardware	0.22	0.00	Significant
Multimedia	0.20	0.01	Significant
Network	0.33	0.00	Significant
Information Ethic	0.20	0.00	Significant
Information Security	0.29	0.00	Significant
Overall	0.32	0.00	Significant

Table 5. Significance of the Influence of TPACK, and Computer Literacy on the Knowledge and Understanding in Plane and Solid Geometry

Variables		Knowledge and Understanding in Plane and Solid Geometry			
		β	t	p-value	Remarks
TPACK		0.26	2.65	0.009	Significant
Computer Literacy		0.15	1.56	0.12	Not Significant
Holistic Model					
r^2	0.140				
F	13.64				
p	0.000				

DISCUSSION

It is revealed that the overall mean level of Teachers' TPACK is 4.31 described as very high. It means that the TPACK of teachers is always manifested. It implies that in this 21st-century education, teachers have high strength and expertise in integrating technology in education because they are equipped with the different forms of teachers' knowledge that are required to enable technology integration in the classroom. They can educate effectively using ICT applications appropriate in terms of pedagogy and content. In addition, the overall standard deviation is 0.56 implies a relatively tight clustering around the mean, which is less than one denoting that the respondents have ratings that

are practically almost the same. The very high level of TPACK supports the study of Archambault and Crippen (2009) that was conducted in the United States. The study examined the Teachers reported that their knowledge relative to the TPACK is highest among the domains of pedagogy, content, and pedagogical content, indicating that they, overall, felt very good about their knowledge related to the TPACK framework. The study of Archambault and Crippen (2009) was further agreed upon by Huang (2018) in the study entitled “Assessing Language Teachers’ Technological Pedagogical Content Knowledge (TPACK): EFL Students’ Perspectives”. The study also revealed that as perceived by their students, teachers excelled in four components of TPACK such as technological knowledge (TK), pedagogical knowledge (PK), content knowledge (CK), and pedagogical content knowledge (PCK).

On the other hand, the level of computer literacy of students. The overall mean of the computer literacy of students is 4.14 described as high. It means that the computer literacy of students is oftentimes evident. This result implies that students are already equipped with basic computer skills but there are still needs for improvement on their basic computer skills, media-related skills, and web-based skills which they need for the teaching-learning process such as using spreadsheet software, handling computer peripheral devices, multimedia and even the legal processes related to computers. Meanwhile, the overall standard deviation of 0.59 indicates a high dispersion of responses of the students around the mean. The high level of computer literacy among students affirms the findings of SZ et al. (2014) in their study that was undertaken in the Tiruvallur District of Tamil Nadu to understand the digital competency of Arts and Science students which revealed that students are digitally literate. The majority of the students are average in computer literacy level. Only a very few male and female students are not at all confident in using digital resources and tools. It is therefore computers in school laboratories should be updated to improve students' study circumstances and the amount of time they spend at computers during the day and after school. As a result, computer literacy could be improved. Furthermore, similar results were found in the study conducted by Ic and Tutak (2017) on the computer literacy levels of Turkish pupils attending private, district, and provincial schools. It was found that the level of computer literacy was high.

Moreover, the level of knowledge and understanding in Plane and Solid Geometry which was measured by the percent of the correct answer reveals a mean of 41.05, described as moderately high. This means that the knowledge and understanding of students in the subject Plane and Solid Geometry is satisfactory. Thus, students were good at learning the concepts of plane and solid geometry like how to relate points, lines, angles, planes, and shapes. Nevertheless, the result also implies that the students lack the knowledge to apply some principles and properties needed in learning the subject which causes them to fail some items in the test. The standard deviation value of 14.40 is somewhat large denoting that the scores in the knowledge and understanding in plane and solid geometry tests vary considerably among students. This result clashes with the assertion of Pujawan et al (2020) wherein reality, students still have difficulties in understanding the concepts of geometry. It was stated that students still have difficulties in solving geometry problems and constructing 3D shapes in general. Some different achievement test results in Geometry were enumerated in the study and all give an

implication that the absorption rate of geometry learning was low. As explained by Purnomo and Machromah (2018) in their qualitative study the major difficulty for university students in the solid Geometry learning process is that learning geometry is not easy, and a substantial proportion of pupils have struggled to grasp geometric principles, reasoning, and problem-solving. Geometry learning problems are frequently caused by a lack of understanding which leads to discouragement among students, resulting in low geometry performance.

With regards to the relationship between TPACK, and Knowledge and Understanding in Plane and Solid Geometry has a significant positive relationship with students' knowledge and understanding in plane and solid geometry with a p-value of 0.00 that is less than 0.05 level of significance (two-tailed). It means that as the level of the TPACK of the teacher increases, the knowledge, and understanding of the plane and solid geometry among the students also significantly increases. The table further revealed that even though the TPACK significantly related to the knowledge and understanding of Plane and Solid Geometry, their relationship is not very strong having a correlation coefficient of 0.36. This result supports the paper of Rakes et al. (2022) which examines how 17 secondary mathematics teachers implemented technology in their classrooms during COVID-19 using the TPACK framework and the TPACK levels rubric. Results indicated that teachers increased their use of effective mathematics teaching practices. However, there was no discernible increase in TPACK. A link between TPACK and mathematics classrooms was not found, implying that there may be a need for a more explicit focus on using technology for mathematical conceptual understanding. The study further pointed out that TPACK was not the direct focus on mathematics learning but was considered an important inquiry because of the national emphasis on integrating technology in mathematics teaching demonstrated by the national education organizations.

Meanwhile, the relationship between Computer Literacy and Knowledge and Understanding of Plane and Solid Geometry is significant, and positive with a p-value of 0.00 which is greater than the alpha set at 0.05. This means that if students' computer literacy level increases their knowledge and understanding in Plane and Solid Geometry also significantly increases. It was also revealed that computer literacy tends to increase in response to knowledge and understanding of Plane and Solid Geometry. However, the relationship between the two variables in this study is weak with a correlation coefficient of 0.32. Novita and Herman (2021) argue that upon studying mathematics like knowledge and understanding in some mathematical fields, so many other factors and concepts need consideration. Other related literacies also need to be studied theoretically and practically. Undeniably, some opinions mention that technology hurts the learning process. However, the use of technology in early mathematics classes, for example, is still being debated, a concern occurs because students during the learning process need a touch of real experience in learning mathematics.

The Multiple Regression analysis results reveal that TPACK significantly influences the knowledge and understanding in plane and solid geometry among students with a p-value that is lesser at 0.05 level of significance with a positive standardized beta value of 0.26. It means that for every unit increase in the value of the level of TPACK,

there is a corresponding increase of 0.26 in the level of knowledge and understanding in plane and solid geometry. However, in a singular capacity, the computer literacy of students has no significant influence on the students' knowledge and understanding in plane and solid geometry with a p-value that is greater than the 0.05 level of significance with a positive standardized beta value of 0.15. It means that there is no significant linear relation between computer literacy and the knowledge and understanding of plane and solid geometry among the students. Importantly, the combined influence of the two independent variables, TPACK, and computer literacy towards student knowledge and understanding in plane and solid geometry is significant ($F = 13.64$, $p < .05$).

Meanwhile, the model explains 14 percent of the variance of knowledge and understanding in plane and solid geometry was explained by the independent variables explored in this study as indicated by $r2 = 0.14$. This means that 86 percent of the variance of the knowledge and understanding in plane and solid geometry can be attributed to other factors aside from TPACK, and computer literacy. The National Council of Teachers of Mathematics (NCTM) (2000) stated that technology is critical in the teaching and learning of mathematics and that it has an impact on the mathematics taught. Learners can use technology to help them visualize abstract ideas, organize, and analyze data, and focus on decision-making, reflection, reasoning, and problem-solving. Numerous academics acknowledged that the framework of TPACK has provided the knowledge base for the integration of technology and curriculum. Meanwhile, the positive influence of TPACK towards knowledge and understanding in the plane and solid geometry is an affirmation on Mishra & Koehler's (2006) theory of TPACK wherein the TPACK framework has highlighted teacher knowledge as a type of knowledge that is important in the subject of Geometry while incorporating technology. With an increasing focus on technology, teachers need to also learn how to combine technology with content and pedagogy to create an effective learning environment. This further supports the study of Xu et al. (2019) which revealed Information technology can play an important influence on the learning and teaching of solid geometry.

Conclusions

The following conclusions were made based on the findings:

1. The college teachers in Agusan del Sur had a very high level of TPACK as perceived by their students. All the indicators under TPACK were revealed to be very high among the college teachers. The level of TPACK of the college teachers in Agusan del Sur was always manifested.

2. The mathematics major students in Agusan del Sur had a high level of computer literacy with network as the highest level. Software-related literacy was also revealed to be very high. While information ethic, information security, multimedia and hardware-related literacies are found to be high among mathematics major students. Furthermore,

computer literacy of the mathematics major students in Agusan del Sur was oftentimes evident.

3. The mathematics major students in Agusan del Sur had a satisfactory level of knowledge and understanding in plane and solid geometry. Areas in triangles and quadrilaterals together with areas in solids also resulted to a satisfactory level of knowledge and understanding in plane and solid geometry. Nevertheless, the areas in circles were fairly satisfactory. Thus, students still have difficulty in their knowledge and understanding in plane and solid geometry especially in the concept of circles

4. TPACK and computer literacy were both associated with knowledge and understanding in plane and solid geometry of mathematics major students in Agusan del Sur. This implies that as the level of the TPACK of the teachers increased, the knowledge and understanding of plane and solid geometry of mathematics major students increased. In the same manner, if the level of computer literacy of teachers increased, the knowledge and understanding of plane and solid geometry of mathematics major students increased.

5. Knowledge and understanding in plane and solid geometry were significantly influenced by TPACK. This result showed that for every unit increase in the value of the level of TPACK, there was a corresponding increase in the level of knowledge and understanding of plane and solid geometry. Furthermore, the large variance of the knowledge and understanding of plane and solid geometry of mathematics major students in Agusan del Sur can be attributed to other factors not included in this study.

Recommendations

Based on the conclusions drawn, the following recommendations are suggested:

1. Since the college teachers in higher education institutions experienced a very high level of TPACK, to sustain this exemplary level of TPACK, school administrator may provide and support them with additional trainings and seminars related to their TPACK.

2. Since mathematics major students possess a high level of computer literacy, to elevate their basic computer skills, the researcher recommends that school administrators may implement up-to-date educational technology and efficient ICT courses and activities regarding the use of common programs such as Excel, and PowerPoint, Photoshop, the legal basis in using computers and others pertinent to the use of all required digital resources and technology which they need for the teaching-learning process.

3. Since the level of knowledge and understanding in plane and solid geometry of students was moderately high, this knowledge and understanding may be augmented by mathematics teachers through continuing to improve and develop their teaching styles and learning plans that will cater the learning needs of students that might improve their knowledge and understanding in their major subjects like geometry particularly in the area

of circle. Likewise, students may continue to strive in their studies and review some fundamental concepts that is very relevant in mathematics learning.

4. Since teachers' TPACK and students' computer literacy had a significant positive relationship with knowledge and understanding in plane and solid geometry among mathematics major students in Agusan del Sur, the researcher recommends that school administrator may offer high quality development programs to advance the computer skills among the students particularly in, hardware and multimedia related skills. Concurrently, they may focus their evaluation on the technological, pedagogical and content knowledge among teachers to maintain and sustain their TPACK level.

Since the positive relationship of both TPACK and computer literacy towards knowledge and understanding in Plane and Solid Geometry is not strong, future researchers may study other variables that will link to the knowledge and understanding in plane and solid geometry or look into other indicators under the present variables in this study that might improve the weak relationships.

5. Since there is a small percent of the variance of the knowledge and understanding in plane and solid geometry of mathematics major students in Agusan del that were attributed to the independent variables covered in this study, future researchers may also pursue other research designs such as mixed methods and path analysis to discover further association of the variables or perhaps indirect effect of the mentioned independent variables in this study towards the dependent variable.

Compliance with Ethical Standards

The study adhered to ethical guidelines set by the UIC Research Committee, focusing on social value, academic problems, and students' knowledge of plane and solid geometry. The research aimed to address these issues and provide valuable information for school administrators and teachers, scholars, and researchers. The findings will be disseminated through research forums at various levels, reaching as many people as possible.

Informed consent forms were secured, providing participants with information about the study's purpose, rights, risks, benefits, safety, privacy, confidentiality protocols, and the researcher's qualifications. Vulnerable respondents, such as those with disabilities, poverty, or marginalization, were considered adult participants. Data was collected online using Google Forms, following health protocols set by the Inter-Agency Task Force on Infectious Diseases (IATF).

The study generated relevant information that can be useful to public and private school administrators, providing evidence-based information for improving the mathematics curriculum. The researcher valued their participation and prioritized their

welfare. Privacy and confidentiality of information were maintained, and the researcher ensured that personal information was kept private and confidential.

Justice was the sole responsibility of the researcher, and only students enrolled in the subject plane and solid geometry were selected for the study. Results and findings were shared with respondents, and they were given a twenty pesos load allowance as an incentive for their participation.

Transparency was promoted by clearly outlining the study's objectives, time allocation, and any potential impact on the respondents' rights, health, and safety. The study's findings will be used to improve the mathematics curriculum and support students in their learning journey.

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