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Address: Katipunan St, Tisa, Cebu City, Philippines

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Validation of a Mathematics Teaching Assessment Scale for K-12 Basic Education: A Confirmatory Factor Analysis Approach

Keith A. Madrilejos

Jose V. Palma Senior High School, Quezon City, Philippines

Author email: keith.madrilejos001@deped.gov.ph

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Abstract. Mathematics teaching in the K-12 Basic Education Curriculum encourages educators to adopt student-centered approaches and emphasize the development of 21st-century skills. Assessing the pedagogical practices of mathematics teachers using a specific tool validated through quantitative approaches is essential to ensure the effectiveness and quality of mathematics instruction. While previous research has focused on instrument validation in various areas, including self-efficacy of math teachers, mathematics teachers' anxiety, and online education, existing classroom observation tools have limitations, particularly in assessing public school teachers' performance specifically intended for mathematics teachers. This study aimed to validate a mathematics teaching assessment scale. The scale, constructed based on the Department of Education's classroom observation tool, initially comprised 22 items across four constructs: Mastery of the K-12 Mathematics, Teaching Methodologies, ICT Integration, and Assessment of Learning. The scale was validated through content validation, reliability testing, inter-item correlation, confirmatory factor analysis (CFA), convergent validity, and discriminant validity. A total of 687 mathematics teachers from four public schools in each of the five municipalities of the National Capital Region participated. Content validity was established by eight experts using the Scale Content Validity Index and Item-Content Validity Index, with indices exceeding 0.833, indicating validity. Each construct demonstrated desirable reliability indices based on Cronbach's alpha and composite reliability coefficients. Confirmatory Factor Analysis removed six indicators, resulting in a final scale of 16 items across four constructs. The validated instrument can effectively evaluate mathematics teachers' classroom teaching, focusing on 21st-century skills and student-centered approaches.

Keywords: Mathematics teaching assessment; 21st-century skills; Content validity; Reliability test; Construct validity.

1.0 Introduction

Student-centered teaching in mathematics shifts the focus from teacher-led instructions to practices that prioritize students' active participation, interests, and learning needs. This approach is grounded in the belief that learning is more meaningful and effective when students actively engage directly with the material, collaborate with peers, and reflect on their understanding (Keiler, 2018). Constructivism, a theory in the psychology of learning advocated by Jean Piaget and other educational psychologists, provides a foundational theoretical basis for student-centered teaching (WGU, 2020). It posits that learners construct their understanding and knowledge of the world, through experiencing things and reflecting on those experiences, which aligns with the emphasis on active engagement and discovery in student-centered mathematics education. Specifically, these student-centered approaches include collaborative activities, project-based exercises, and social constructivist learning (National Council of Teachers of Mathematics, 2020). Moreover, the Mathematics Teachers Association of the Philippines (n.d.) strongly advocates that teachers should motivate students to learn mathematics better through student-centered approaches of collaborative group learning. It is a well-established fact that teaching strategies significantly impact

the academic success of learners. Joaquin et al. (2023) of the University of the Philippines NISMED affirmed that teaching styles had a significant relationship with the student's achievement based on the highest mean performance score.

Aside from learner-centered teaching practices, career and life skills are important key points that mathematics teachers should incorporate into his or her teaching. Buckle (2024) of Panorama Education pointed out that the increasing changing demands of the economy compelled many school districts to include 21st-century skills in their strategic plans to prepare students for college, career, and life. These life skills, so-called 21st-century skills, encompass problem-solving skills, information literacy, and critical thinking skills are also stressed in the twin goals of mathematics education in the K-12 curriculum (Department of Education, 2016). In the MATATAG Agenda, one of the supporting components of the framework to facilitate the development of mathematically proficient and critical problem solvers is the pedagogy which necessitates math teachers to become effective by employing relevant teaching strategies and assessment considering the learning phases of the students (Department of Education, 2023). Mathematics is an integral subject in the Philippines Department of Education K-12 curriculum that necessitates critical thinking abilities because it is crucial to daily life along with the development of other sciences (Artuz & Roble, 2021). By implementing engaging activities and real-world examples, teachers are encouraged to demonstrate the practical applications of mathematics, helping students deeply realize its relevance and importance.

Classroom assessment in mathematics is crucial as it provides teachers with valuable insights into students' understanding and helps tailor instruction to meet their needs. Additionally, assessing teaching methodologies ensures that educators are using effective strategies to promote learning and critical thinking in mathematics. Birgin and Yilmaz (2023) discussed in their paper that assessment of learning is essential to measure student achievement but it should include classroom assessment to uphold teaching and learning. Several studies stressed the effectiveness of teachers is an important ingredient in achieving quality learning (Lazarides et al., 2020; Yin, 2022; Nieto et al., 2023). This makes sense as Calaguas (2012) stated in his paper that it is important to consistently motivate teachers to do their best and be effective at all times. Kumar et al. (2024) emphasized that to measure the effectiveness of math teachers as this is crucial to student achievement, a tool must be developed. To determine the efficacy and effectiveness of teachers in their contributions to the educational process, there must be a validated instrument to address this concern.

One key measure of teaching and learning quality in basic education is the National Achievement Test (NAT) results for Grades 6 and Grade 12. However, NAT results from SY 2017-2018 up to SY 2022-2023 have indicated that learners in many schools had declining achievement and were still in the process of developing 21st-century skills such as problem-solving, information literacy, and critical thinking (Branzuela et al., 2023; Casildo et al., 2023; Philippine Star, 2024). This is a significant concern, especially considering the Philippines' 81st ranking in the 2022 PISA results, which highlights the challenges in students' critical thinking abilities. To address these issues, educators must adopt innovative teaching strategies that focus on developing these essential skills. These results suggest the need for assessing mathematics teachers on their content knowledge and teaching practices, particularly in fostering 21st-century skills among students. In this study, the researcher considered the entire National Capital Region (NCR) as the locale of the study with a sufficient number of participants.

In recent years up to now, the Department of Education Philippines followed the system of the Philippine Professional Standard for Teachers (PPST) involving the use of classroom observation tools to assess public school teachers' performance, determine their needs, and support them in professional enhancement. In general, this consists of domains such as content knowledge and pedagogy, learning environment, diversity of learners, curriculum and planning, and assessment and reporting (Department of Education, 2019). These were structured in a broad sense to assess and evaluate public school teachers in particular but not specifically for mathematics teachers. This classroom observation tool was only developed and validated for pre-service teachers using qualitative approaches (Lucero et al., 2024). In the field of mathematics education, measuring the teachers' self-efficacy was one of the areas in development and validation studies (Aldhafri et al., 2017). Another validated instrument to assess mathematics teachers' frequency of using classroom assessment tools was conducted by Birgin and Yilmaz (2023). The professional competence of mathematics teachers was investigated in Russia on a large scale; however, this study did not aim to create and validate a scale for evaluating professional competence

(Podkhodova et al., 2020). Some studies conducted before involved developing and validating a teaching effectiveness scale for college professors (Shahzad & Mehmood, 2019; Calaguas, 2012; Jislan et al., 2018). Hence, there is a need for an instrument to assess the teaching practices of the mathematics teachers in the basic education level. Due to the challenges and problems in the education sector as well as the lack of scale to assess mathematics teachers' pedagogical practices, the researcher intends to contextualize and validate an instrument intended for evaluating mathematics teachers in basic education in terms of teaching strategies in the 21st century.

2.0 Methodology

2.1 Research Design

This study used a quantitative-correlational research design because it utilized confirmatory factor analysis as a primary statistical technique which involves measuring the inter-correlations of constructs of mathematics teaching assessment and regression analyses between the constructs and their respective indicators. Studies that use factor analysis involve complex relationships among a large number of conceptually similar variables that apply to correlational design (Price et. al., 2015). Furthermore, this is supported by Tavakol and Wetzel (2020), who comprehensively discussed factor analysis, explaining the relationships between multiple variables/items of a scale.

2.2 Research Participants

The researcher, being a mathematics teacher from Quezon City, considered selecting the participants of this validation study in the National Capital Region. This research includes 687 math teacher-respondents selected from the following cities, each with its corresponding number: Quezon City (147), Makati City (133), Valenzuela City (140), Pasig City (137), and Marikina City (130), during the school year 2022-2023. A multi-stage random sampling approach was employed for respondent selection. Clusters were formed from municipalities within the National Capital Region (NCR), with five cities chosen randomly. Within each city, four public high schools were selected at random. The study included all mathematics teachers from these selected schools as respondents. Random sampling was conducted because it is an acceptable type of sampling procedure for quantitative studies. Mananghaya (2020) of the University of the Philippines Los Banos pointed out that random samples are only valid for statistical inferences. The sample size was determined based on the recommendation of White (2021) of 620 respondents for quantitative validation studies and Myers et al. (2011) emphasizing at least 300 participants after they conducted a Monte Carlo method for validation studies.

2.3 Research Instrument

Based on the indicators of the classroom observation tool developed by the Department of Education following the Philippine Professional Standards (PPST), the researcher contextualized the items of the scale. This classroom observation tool is used to assess the teaching performance in classroom-based settings of public school teachers. This developed tool was the primary basis for crafting the items and grouping these items into domains or constructs. The classroom observation tool originally consisted of domains such as content knowledge and pedagogy, learning environment, diversity of learners, curriculum and planning, and assessment and reporting (Lucero et al., 2024). In this study, the researcher simplified and contextualized these constructs into four such as mastery of the k-12 mathematics, teaching methodologies, ICT integration, and assessment of learning. Furthermore, the researcher consulted eight (8) experts (master teachers, head teachers, college professors, and high school principals) from the field of mathematics education in crafting the items and ensuring that these are aligned with the domains of 21st-century skills.

Mastery of the Content was considered a construct of mathematics teaching assessment based on the studies of George (2021) and Baumert and Kunter (2013). Teaching Methodology, being taken as one of the constructs, was included with specific indicators highlighting the relevance of developing critical thinking, higher-order thinking skills, differentiated instruction, developing career life skills, cooperative learning, and diversified teaching. Items under the teaching methodology domain were crafted from the studies of Sachdeva and Eggen (2021), Asmar et al. (2020), Bal (2023), Patnode and Lee (2021), Motseki and Kakoma (2023), Kaya and Kesan (2023), and the Mathematics Teachers Association of the Philippines (n.d.).

Moreover, the integration of ICT in teaching mathematics was considered a construct based on the existing literature (Arrieta, 2020; Turel et al, 2017; Ghavifekr et al., 2015; Gebremedhin et al., 2015). The researcher

formulated the indicators of the Assessment of Learning based on DepEd Order No. 8 s. (2015), Chigonga (2019), and Teaching at UNSW (2023).

Unlike the template of the classroom observation tool in IPCRF (Individual Performance Commitment and Review Form), this instrument is structured on a Likert Scale form with five options. This may be used to specifically evaluate the classroom teaching performance of mathematics teachers under Basic Education emphasizing 21st-century skills.

Initial Development of the Scale

Based on the classroom observation tool for public school teachers in the IPCRF, the scale was primarily structured with four domains with the corresponding number of items such as Mastery of the K-12 Mathematics (5), Teaching Methodologies (6), ICT Integration (5), and Assessment of Learning (6). After conducting intensive discussions with the subject matter experts and a thorough examination of the related studies, the following indicators with respective codes were primarily constructed before the data analysis procedures of validation and reliability testing.

I. Mastery of the K-12 Mathematics (MC)

- MC1. Demonstrated mastery of the topics in the K-12 mathematics curriculum.
- MC2. Utilized knowledge of the mathematical content across various curriculum teaching areas.
- MC3. Offered classroom-based examples during the lesson execution within the class's time frame.
- MC4. Incorporated real-world examples to illustrate mathematical concepts.
- MC5. Ability to explain complex mathematical concepts clearly and effectively.

II. Teaching Methodologies (T)

- T1. Employed various teaching strategies that improve learner achievement in literacy and numeracy skills.
- T2. Applied multiple teaching strategies to enhance student understanding of mathematical concepts.
- T3. Utilized a variety of teaching approaches to cultivate critical and creative thinking, alongside other advanced cognitive abilities.
- T4. Promoted cooperative and collaborative learning among students to make learning mathematics enjoyable.
- T5. Implemented diverse teaching in mathematics lessons to accommodate different learning styles and individual variances.
- T6. Integrated learning activities into mathematics instruction placing a focus on developing career and life skills.

III. ICT Integration (ICT)

- ICT1. Used technology to enhance mathematical concepts and learning experiences.
- ICT2. Demonstrated proficiency in using ICT for mathematical problem-solving and exploration.
- ICT3. Incorporated technology-based assessments to evaluate student understanding and progress in mathematics.
- ICT4. Facilitated online collaborative activities and discussions related to mathematical concepts.
- ICT 5. Integrated interactive multimedia presentations to engage students in learning.

IV. Assessment of Learning (A)

- A1. Designed, selected, organized, and applied diagnostic, formative, and summative assessment strategies aligned with curriculum standards.
- A2. Provided timely and constructive feedback to students on their performance in mathematics.
- A3. Employed diversified assessment methods to evaluate student understanding of mathematical concepts.
- A4. Implemented strategies to address student misconceptions and promote a deeper understanding of mathematical concepts.
- A5. Alignment of assessments with learning objectives and standards in mathematics.
- A6. Incorporated technology-based assessments to evaluate student understanding and progress in mathematics.

2.4 Data Gathering Procedure

To accommodate time constraints, the survey was structured using Google Forms and distributed to selected schools' respondents via QR codes. To ensure understanding and compliance, virtual orientations and face-to-face meetings were held with school leaders and mathematics teachers. Clear instructions and the survey's purpose

were explained. Before administering the survey, all necessary protocols were observed, including obtaining approval from Schools Division Offices in Quezon City, Makati City, Pasig City, Marikina City, and Valenzuela City. After a month, formal letters were sent to school principals for survey administration. Responses in Google Forms were monitored for completion, and follow-ups were conducted through various communication channels such as phone calls, emails, chat messages, and text messages. Data inspection and cleaning were performed to avoid missing entries before tabulation. The finalized data was then organized and summarized using Microsoft Excel and analyzed using SPSS (Statistical Package for Social Sciences) Version 26, with additional scale validation and analysis conducted using SPSS AMOS (Analysis of Moment Structures).

2.5 Ethical Considerations

Data gathering and storage of data were under strict conformance with ethical standards such as letter of informed consent, privacy, and confidentiality of the respondents. The proponent of this study attended a research ethics webinar and training before the data gathering started. The researcher only communicated with the respondents using their DepEd email accounts only. The researcher respected the respondents' privacy and ensured they were not pressured to participate. Upon submission of the accomplished informed consent, participants were designated with a unique respondent number. Names or any personal information was not collected from the respondents. Correspondences directly sent to the respondents who chose not to participate were deleted from the personal files of the researcher. Digital copies of the questionnaire, consent letter, demographic profile, and the respondents' answers were protected in a password-templated file saved in the researcher's designated folder.

To enhance data protection in the Google Form Survey, the researcher mandated that only participants with DepEd Gmail Accounts could complete the electronic survey form. After collecting all the necessary information, the researcher closed the Google Form for responses by adjusting the privacy settings. The original copy of all responses was retained solely in the Excel File of the organized dataset; following data analysis, results, and findings production, the researcher deleted both the spreadsheets and the survey to prevent unauthorized access. The tabulated data of the participant's responses were deleted after one year. None of the respondents' information or actual survey responses were stored in any public data storage. The findings from this study will be disseminated in scientific and international research journals, utilizing anonymous data.

2.6 Data Analysis

The content validity through the scale content validity (S-CVI) formula and item content validity (I-CVI) formula were first utilized in the study. The main reason for using validation statistics like the content validity index formula and content validity ratio is to assess the extent to which the items in a scale represent the content domain of the construct being measured. The researcher adhered to the procedures and acceptable value of the content validity index suggested by Yusoff (2019). Since there were eight (8) experts being consulted, the required range of content validity index must be at least 0.833 (Lynn, 1986; Yusoff, 2019). Each item was evaluated by the experts using the rating scale from 1 to 4: 1 - The item is not relevant to the measured domain, 2 - The item is somewhat relevant to the measured domain, 3 - The item is relevant to the measured domain, and 4 - The item is highly relevant to the measured domain.

The internal consistency of the items per construct was determined using Cronbach's Alpha Coefficient. Based on the framework of Adamson and Prion (2013), and Taber (2018), the reliability index of a scale must be at least 0.70. As suggested by Magno (2021), the Mathematics Teaching Assessment, a multidimensional variable, requires the calculation of a reliability coefficient for each construct.

Inter-item correlations were computed to determine the degree of association or relationship between different items per construct in the Mathematics Teaching Assessment, aiding in understanding the internal consistency and reliability of the instrument. This was also determined to inspect if there are highly correlated items because it could indicate redundancy in the assessment tool, suggesting that some items may be measuring the same underlying construct and could potentially be simplified or combined. If inter-item correlations are 0.70 or higher, it suggests that the items are measuring nearly the same thing, and it may be advisable to remove one of them (Röschel and Wagner, 2021). Correlations between 0.30 and 0.70 are considered desirable, as lower values may suggest a lack of consistency among items, while higher values could indicate that some items are redundant (Hawker, 2008; Streiner & Norman, 1991).

Confirmatory Factor Analysis (CFA) was used to examine the model fit of the instrument, composite reliability, convergent validity, and discriminant validity. The scale model fit must have a Chi-Square p-value of greater than 0.05 and $2 < \chi^2/df \leq 3$ (Muller et al., 2003). However, if the Chi-Square result is not significant and the results of other fit measures are desirable, then the model attains an acceptable fit (PARSSU, 2022). Comparative Fit Index (CFI) must be 0.90 or higher (Capinding, 2023). The Tucker-Lewis Index must have values greater than 0.95 (Magno, 2021). On the other hand, Finster and Feldman (2019) indicated that TLI must have values of at least 0.90. The Normed Fit Index (NFI) must be at least 0.90 or between 0.90 and 0.95 inclusive (Muller et al., 2003; Byrne, 1994). The Root Mean Square Error of Approximation (RMSEA) value must be 0.05 and 0.08 (Muller et al., 2003; Fabrigar et al, 1999; Magno, 2021). A model is considered an acceptable fit if its Relative Fit Index (RFI) is closer to 1, its Incremental Fit Index (IFI) must be greater than 0.90, and its Parsimony-Adjusted Measures Index (PNFI) should be higher than 0.50 (Mattan et al., n.d.).

3.0 Results and Discussion

3.1 Content Validity Results

Table 1. Content Validity of the Mastery of the K-12 Mathematics Construct

Item Code	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Rater 8	Number of Agreement	I-CVI
MC1	3	3	3	4	4	4	3	2	7	0.875
MC2	4	4	4	3	4	4	4	3	8	1
MC3	4	4	4	3	4	4	3	4	8	1
MC4	4	4	4	4	4	4	4	4	8	1
MC5	2	2	2	3	3	1	4	2	3	0.375
									S-CVI	0.85
									Total Agreement	4

Table 1 presents the content validation of the Mastery of the K-12 Mathematics Construct. As shown in the table, the overall scale-content validity index of 0.85 indicates the scale's validity, as it falls within the recommended range of at least 0.833, as discussed by Yusoff (2019). However, it is suggested that MC5 (Ability to explain complex mathematical concepts clearly and effectively) be revised or deleted from the scale, as only three raters agreed that it is relevant to mastery of the content. Conversely, MC1, MC2, MC3, and MC4 had higher item-content validity indices of 0.875 to 1.00, indicating their validity. This evaluation highlights the importance of thorough item analysis in scale development, ensuring that each item contributes meaningfully to the overall construct.

Table 2. Content Validity of the Teaching Methodologies Construct

Item Code	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Rater 8	Number of Agreement	I-CVI
T1	2	2	1	2	2	3	4	4	3	0.375
T2	3	3	3	4	3	4	3	4	8	1
T3	3	4	4	4	4	4	3	4	8	1
T4	4	4	4	4	4	4	4	4	8	1
T5	4	4	4	3	4	4	4	3	8	1
T6	4	4	4	3	3	4	4	3	8	1
									S-CVI	0.896
									Total Agreement	5

Shown in Table 2 are the results of the content validation of the items under Teaching Methodologies. The overall scale-content validity index of 0.896 indicates strong validity, meeting the required threshold based on Lynn (1986) and Yusoff (2019). However, T1 (Employed various teaching strategies that improve learner achievement in literacy and numeracy skills) stands out as needing improvement or deletion due to its limited perceived relevance by only three raters. Conversely, items T2 to T6 demonstrated high item-content validity indices ranging from 0.896 to 1.00, suggesting their strong alignment with the construct of Teaching Methodologies. This content analysis underscores the importance of reviewing and refining individual items to ensure the overall quality and validity of the scale.

Table 3. Content Validity of the ICT Integration Construct

Item Code	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Rater 8	Number of Agreement	I-CVI
ICT 1	4	3	3	3	4	4	3	3	8	1
ICT 2	4	4	4	3	3	4	3	4	7	0.875
ICT 3	4	3	4	3	4	4	3	4	8	1
ICT 4	4	4	3	4	4	3	3	4	8	1
ICT 5	2	2	2	3	2	2	4	4	3	0.375
									S-CVI	0.85
									Total Agreement	4

Table 3 shows the results of the content validation of the scale under the ICT Integration construct. The overall scale-content validity index of 0.85 ensures the validity of most items (Yusoff, 2019), yet ICT 5 (Integrated interactive multimedia presentations to engage students in learning) was deemed relevant by only three raters, suggesting a need for its revision or removal. Conversely, ICT 1, ICT 2, ICT 3, and ICT 4 were rated as valid, with item-content validity indices ranging from 0.875 to 1.00 based on expert ratings.

Table 4. Content Validity of the Assessment of Learning Construct

Item Code	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7	Rater 8	Number of Agreement	I-CVI
A1	4	4	3	4	4	3	4	4	8	1
A2	4	3	4	4	3	4	3	4	8	1
A3	4	4	3	4	3	4	3	4	8	1
A4	2	1	3	3	3	2	2	1	3	0.375
A5	2	3	3	2	3	2	2	2	3	0.375
A6	1	2	2	3	3	2	2	3	3	0.375
									S-CVI	0.688
									Total Agreement	3

Presented in Table 4 are the content validation results of the Assessment of Learning Construct taken from the ratings of the eight experts. The overall scale-content validity index of 0.688 falls short of the standard required by Yusoff (2019) and Lynn (1986). Three items, namely A4, A5, and A6, exhibited a low item content validity index of 0.375, prompting the researcher to revisit and delete these items. On the other hand, items A1, A2, and A3 were retained.

3.2 Reliability Test Results

Table 5. Reliability Indices of the Scale

Constructs	Number of Items	Cronbach's Alpha	Interpretation
Mastery of the K-12 Mathematics	4	0.850	Good
Teaching Methodologies	5	0.834	Good
ICT Integration	4	0.871	Good
Assessment of Learning	3	0.811	Good

Table 5 reveals the reliability coefficient of each construct. The computation of the reliability index per construct was done after deleting the non-significant items from the scale. The matrix above illustrates the computed Cronbach alpha coefficients for each construct, with values exceeding 0.80 indicating strong internal consistency among items. Specifically, coefficients of 0.850, 0.834, 0.871, and 0.811 fall within the 0.80 to 0.89 range, categorizing them as "good" items according to Arof et al. (2018). These coefficients signify the reliability of the constructs, suggesting that the items consistently measure the intended concepts within each construct of the Mathematics Teaching Assessment Scale.

3.3 Inter-Item Correlations

Shown in Table 6 are the inter-item correlations of the pairs of items under Mastery of the K-12 Mathematics. This inter-item correlation was computed after performing content validation and confirmatory factor analysis. Notably, no correlation coefficients exceeding 0.70 were observed, indicating that none of the items are overly redundant or measuring the same underlying construct to a high degree. This aligns with the recommendation by Röschel and Wagner (2021) to retain these items in the scale, as they each contribute distinct information.

Table 6. Inter-Item Correlation Matrix for Mastery of the K-12 Mathematics

Variable	1	2	3	4
1. MC1	1.00	-	-	-
2. MC2	0.598	1.00	-	-
3. MC3	0.486	0.578	1.00	-
4. MC4	0.550	0.668	0.641	1.00

Furthermore, the computed correlation coefficients among the items ranged from 0.498 to 0.668, suggesting moderate to strong relationships between some items. These findings underscore the scale's coherence and the complementary nature of its items in measuring the intended construct, further supporting its validity and utility in assessing mastery of K-12 mathematics.

Table 7. Inter-Item Correlation Matrix for Teaching Methodologies

Variable	1	2	3	4	5
1. T2	1.00	-	-	-	-
2. T3	0.579	1.00	-	-	-
3. T4	0.530	0.566	1.00	-	-
4. T5	0.482	0.562	0.666	1.00	-
5. T6	0.360	0.395	0.408	0.463	1.00

Revealed in Table 7 the inter-item correlations between the pairs of items of the Teaching Methodologies Construct. The calculation of this inter-item correlation followed content validation and confirmatory factor analysis. Results in this matrix demonstrate that akin to the findings in Table 6, no highly correlated items were observed, as none of the correlation coefficients exceeded 0.70. This aligns with the recommendations of Hawker (2008), Streiner and Norman (1991), and Röschel and Wagner (2021), supporting the retention of these indicators in the scale due to their unique contributions. The computed inter-item correlations, ranging from 0.360 to 0.666, indicate moderate to strong relationships between some items. These results highlight the scale's robustness and the complementary nature of its items, affirming its effectiveness in measuring the Teaching Methodologies Construct.

Table 8. Inter-Item Correlation Matrix for ICT Integration

Variable	1	2	3	4
1. ICT1	1.00	-	-	-
2. ICT2	0.620	1.00	-	-
3. ICT3	0.601	0.627	1.00	-
4. ICT4	0.626	0.637	0.657	1.00

Table 8 shows the inter-item correlation results among the pairs of items in the ICT Integration Construct. After completing content validation and confirmatory factor analysis, this inter-item correlation was computed. The correlation coefficients for each item, ranging from 0.601 to 0.675, indicate moderate to strong relationships between these items. This suggests that the items within the ICT Integration Construct are related but not redundant, highlighting their collective ability to capture different facets of ICT integration in education. These findings support the construct's internal consistency and coherence, reinforcing its validity in assessing the integration of information and communication technology in educational settings. The results affirmed the recommendations made by Röschel and Wagner (2021).

Table 9. Inter-Item Correlation Matrix for Assessment of Learning

Variable	1	2	3
1. A1	1.00	-	-
2. A2	0.525	1.00	-
3. A3	0.628	0.620	1.00

Table 9 presents the inter-item correlation between the pairs of items under Assessment of Learning Construct. This inter-item correlation was derived following the completion of content validation and confirmatory factor analysis procedures. The correlation coefficients, ranging from 0.525 to 0.628, indicate moderate to strong relationships between these items. These findings suggest that while the items are related, they each contribute

unique information to the Assessment of Learning Construct. This supports the construct's validity and indicates that the items collectively assess various aspects of learning assessment effectively. As suggested by Hawker (2008), Streiner and Norman (1991), and Röschel and Wagner (2021), inter-item correlations below 0.70 indicate that items are not redundant and can therefore be retained in the scale.

3.4 Removal of the Non-Significant Items from the Scale

Table 10. Deleted Items from the Scale

Item Code	Indicator	Factor Loadings	p-value
MC5	Ability to explain complex mathematical concepts clearly and effectively	-0.049	0.882
T1	Employed various teaching strategies that improve learner achievement in literacy and numeracy skills	-0.034	0.328
ICT5	Integrated interactive multimedia presentations to engage students in learning	0.115	0.732
A4	Implemented strategies to address student misconceptions and promote a deeper understanding of mathematical concepts	0.232	0.992
A5	Alignment of assessments with learning objectives and standards in mathematics	0.225	0.323
A6	Incorporated technology-based assessments to evaluate student understanding and progress in mathematics	0.189	0.644

Table 10 reveals the deleted items from the scale. After conducting the content validity, reliability test, and confirmatory factor analysis, it was found that the above items were not significant and did not contribute to their respective constructs based on factor loadings meaningfully.

In terms of scale development, this means that the above items failed to meet the threshold for significant factor loadings and p-values do not sufficiently align with the underlying construct they are intended to measure. These items were dropped from the scale as a result of low factor loadings ($r < 0.50$) to their corresponding latent variables. Hair et al. (2009), Ximenez (2015), and Oswald (2019) stressed that the p-values associated with the indicator loadings must be less than or equal to 0.05 and the factor loadings must be higher than or equal to 0.50. The results obtained above decreased the total number of items on the scale from 22 to 16. Six non-significant indicators were removed from the instrument.

Table 11. Factor Loadings in CFA

Item Code	Indicator	Factor Loading
MC1	Demonstrated mastery of the topics in the K-12 mathematics curriculum.	0.632
MC2	Utilized knowledge of the mathematical content across various curriculum teaching areas.	0.760
MC3	Offered classroom-based examples during the lesson execution within the class's time frame.	0.770
MC4	Incorporated real-world examples to illustrate mathematical concepts.	0.854
T2	Applied multiple teaching strategies to enhance student understanding of mathematical concepts.	0.636
T3	Utilized a variety of teaching approaches to cultivate critical and creative thinking, alongside other advanced cognitive abilities.	0.725
T4	Promoted cooperative and collaborative learning among students to make learning mathematics enjoyable.	0.777
T5	Implemented diverse teaching in mathematics lessons to accommodate different learning styles and individual variances.	0.798
T6	Integrated learning activities into mathematics instruction placing a focus on developing career and life skills.	0.592
ICT1	Used technology to enhance mathematical concepts and learning experiences.	0.773
ICT2	Demonstrated proficiency in using ICT for mathematical problem-solving and exploration.	0.795
ICT3	Incorporated technology-based assessments to evaluate student understanding and progress in mathematics.	0.788
ICT4	Facilitated online collaborative activities and discussions related to mathematical concepts.	0.815
A1	Designed, selected, organized, and applied diagnostic, formative, and summative assessment strategies aligned with curriculum standards.	0.743
A2	Provided timely and constructive feedback to students on their performance in mathematics.	0.740
A3	Employed diversified assessment methods to evaluate student understanding of mathematical concepts.	0.831

3.5 Confirmatory Factor Analysis (CFA)

Table 11 reveals the results of conducting the Confirmatory Factor Analysis in terms of the factor loadings. Factor loadings in Confirmatory Factor Analysis (CFA) are similar to regression coefficients (Cambridge University Press, 2021). In this study, these represent the relationships between observed variables (items of the Mathematics Teaching Assessment scale) and latent variables (factors or constructs) in the model. These loadings indicate the strength and direction of the linear relationship between the observed variables and the underlying latent factors such as Mastery of the K-12 Mathematics, Teaching Methodologies, ICT Integration, and Assessment of Learning. As observed in the table, each factor loading exceeds 0.50, with computed p-values less than 0.05, indicating the retention of items in the scale. Hair et al. (2009), as discussed by PARSSU (2022), emphasized that factor loadings must surpass the threshold of 0.50 and be statistically significant.

Table 12. Model Fit Statistics

Fit Measure	Value	Threshold for Acceptable Fit	Verbal Interpretation
CMIN	314.863, $p < 0.001$	$2df < \chi^2 \leq 3df$	Significant
Degrees of Freedom (df)	96	-	-
CMIN/df	3.280	$2 < \chi^2/df \leq 3$	Not A Good Fit
NFI	0.943	$0.90 \leq NFI < 0.95$	Acceptable
RFI	0.928	Closer to 1.00	Acceptable
IFI	0.960	$IFI \geq 0.90$	Acceptable
TLI	0.949	$TLI \geq 0.90$	Acceptable
CFI	0.959	$0.95 \leq CFI < 0.97$	Acceptable
PNFI	0.754	$PNFI > 0.50$	Acceptable
RMSEA	0.058	$0.05 < RMSEA \leq 0.08$	Acceptable

Table 12 shows the model fit indices. The obtained values revealed that the majority of the required fit measures were satisfied. However, it was noticed that the CMIN p-value is less than 0.05 and CMIN/df reached 3.280 which does not fall between the range of $2 < \chi^2/df \leq 3$. This suggests that the model does not fit the data based on the Chi-Square test. This discrepancy could be attributed to the Chi-Square's sensitivity to large sample sizes.

Nonetheless, other fit statistics were utilized to evaluate the data. The normed Fit Index (NFI) of 0.943 is higher than 0.90, the Relative Fit Index (RFI) is closer to 1.00, the Incremental Fit Index (IFI) of 0.960 is above the threshold of 0.90, the Tucker-Lewis Index (TLI) of 0.949 is greater than 0.90, Comparative Fit Index (CFI) of 0.959 falls within the range of [0.95,0.97), Parsimony-Adjusted Measures Index (PNFI) of 0.754 is greater than 0.50, and the Root Mean Square Error of Approximation (RMSEA) of 0.058 falls within the ranges of values between 0.05 and 0.08. These findings collectively suggest that while the Chi-Square test indicates poor fit, the model fits reasonably well based on the other fit indices.

Figure 1 illustrates the Four-Factor Model Diagram of the Mathematics Teaching Assessment Scale for K-12 Basic Education, displaying standardized estimates. The inter-factor correlations observed were as follows: Mastery of the K-12 Mathematics and Teaching Methodologies ($r = 0.482$), Mastery of the K-12 Mathematics and ICT Integration ($r = 0.517$), Mastery of the K-12 Mathematics and Assessment of Learning ($r = 0.566$), Teaching Methodologies and ICT Integration ($r = 0.682$), Teaching Methodologies and Assessment of Learning ($r = 0.584$), and Assessment of Learning and ICT Integration ($r = 0.468$).

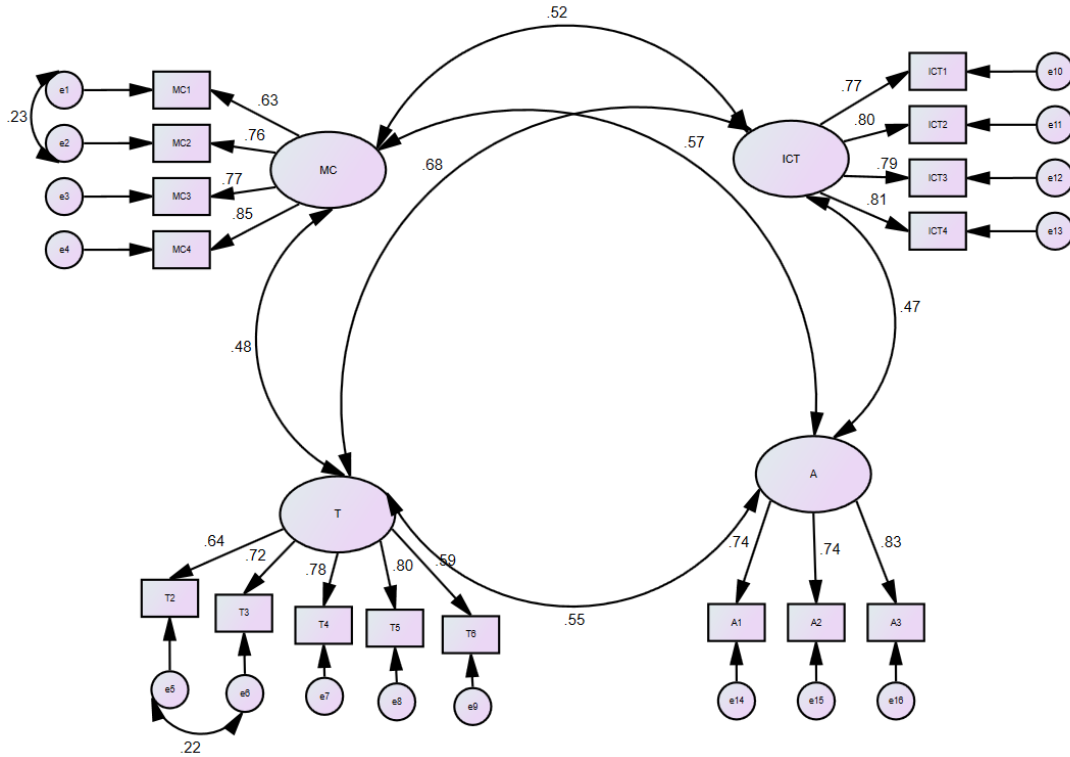


Figure 1. Four-Factor Measurement Model of Mathematics Teaching Assessment for K-12 Basic Education

Furthermore, the error terms of items MC1 and MC2, as well as items T2 and T3, were found to be correlated. This correlation can be attributed to shared method variance and the common wording of the statements. The above correlation values indicate that the constructs are not too correlated with each other. The moderate correlations (between 0.30 and 0.70) between related constructs are common, as they indicate some degree of overlap or shared variance without indicating redundancy (Berry et al., 2006). This range suggests that the constructs are related but distinct, providing evidence of convergent validity without raising concerns about discriminant validity – that is, the constructs are not so highly correlated that they appear to measure the same underlying dimension (Lesia et al., 2024).

Table 13. Composite Reliability

Latent Variable	Number of Items	Composite Reliability
Mastery of the K-12 Mathematics	4	0.834
Teaching Methodologies	5	0.842
ICT Integration	4	0.871
Assessment of Learning	3	0.816

Shown in Table 13 are the coefficients of the composite reliability. This is another measure of reliability to consider when conducting Confirmatory Factor Analysis. Based on the computed values, each construct in the scale demonstrates desirable internal consistency, as indicated by coefficients exceeding 0.70. This aligns with the conservative criterion set by Shamim (2022), Nunally and Berstein (1994), as discussed by PARSSU (2022). Specifically, Mastery of the K-12 Mathematics has a composite reliability index of 0.834, Teaching Methodologies has 0.842, ICT Integration has 0.871, and Assessment of Learning has 0.816.

These results indicate that the items within each construct are highly reliable and consistently measure the underlying construct. This strengthens the overall validity and reliability of the scale for assessing mathematics teaching in K-12 education. These results were also aligned with the obtained Cronbach's Alpha in Table 5.

Table 14. Convergent and Discriminant Validity

	AVE	MSV	MaxR(H)	Teaching Methodologies	Mastery of the K-12 Mathematics	ICT Integration	Assessment of Learning
Teaching Methodologies	0.504	0.465	0.849	0.710			
Mastery of the K-12 Mathematics	0.575	0.320	0.861	0.482	0.758		
ICT Integration	0.629	0.465	0.872	0.682	0.517	0.793	
Assessment of Learning	0.597	0.320	0.824	0.548	0.566	0.468	0.772

Table 14 presents the results of performing convergent validity and discriminant validity as the last phase of conducting Confirmatory Factor Analysis (CFA). According to Kock (2020), a research instrument demonstrates good convergent validity when respondents interpret the item statements associated with each latent construct in the same way as intended by the designers. The Average Variance Extracted (AVE) of each constructed was calculated to determine the proportion of variance in the items explained by the latent variable (PARSSU, 2022). As observed from the matrix, each average variance extracted exceeds the required value of greater than 0.50 as indicated by Shamim (2022), and Fornell and Larker (1981). Hence, the model has achieved the desired convergent validity. These results were connected with the reported data in Table 11 which detailed the significant factor loadings higher than 0.70.

In terms of discriminant validity, the square root of the average variance extracted was calculated in each latent variable. To attain discriminant validity, the square root of the average variance extracted should be higher than the correlations with the constructs (Fornell & Larker, 1981). For teaching methodologies, the square root of 0.504 is 0.710 which is higher than the inter-construct correlations such as 0.482, 0.682, and 0.548. For the Mastery of K-12 Mathematics, the square root of the average variance extracted of 0.758 exceeds the inter-construct correlations such as 0.517 and 0.566. For ICT Integration, the square root of the average variance extracted of 0.793 exceeds the inter-construct correlation of 0.468. Lastly, the square root of the average variance extracted of 0.772 for Assessment of Learning is higher than all inter-construct correlations. These results indicate that the model exhibited good discriminant validity, suggesting that respondents were able to differentiate between the indicators of each construct and did not confuse them with the item statements associated with other constructs (Kock, 2020).

4.0 Conclusion

This study offers a validated and reliable instrument for assessing mathematics teachers' pedagogical practices, aligning with the objectives of K-12 education with 21st-century skills. The research utilized the scale-content validity index and item-content validity index to determine whether the research instrument effectively measures the intended constructs based on the evaluation made by the eight experts on the subject matter. This resulted in content validity indices of greater than 0.833 in the three constructs. However, the Assessment of Learning Construct had a scale content validity index below 0.833, prompting the removal of three items to enhance the scale's validity. This instrument is considered reliable based on the computed Cronbach's alpha coefficient of greater than 0.80 in each construct. It makes the items internally consistent as proven by the empirical evidence. The inter-item correlations showed that there were no highly correlated items implying that the items in the scale are not redundant and measure distinct aspects of the construct. The confirmatory factor analysis (CFA) validated the four constructs of the mathematics teaching assessment scale. These four constructs are as follows: Mastery of the K-12 Mathematics, Teaching Methodologies, ICT Integration, and Assessment of Learning. The teaching performance of mathematics teachers at the basic education level can be measured using the mastery of the K-12 mathematics scale and the teaching methodologies scale. The teaching Methodologies scale is composed of items aligned to multiple or diverse teaching strategies, enhancement of creative and critical thinking skills, promotion of collaborative and cooperative learning, differentiated instruction, and emphasis on developing life and career skills. The ICT Integration scale can assess the mathematics teachers' skill to incorporate and utilize technology in their teaching and assessment. The Assessment of Learning Scale can measure mathematics teachers' skills in providing relevant and aligned assessments to standards and competencies, utilizing diverse ways of assessing learners and providing constructive feedback to students.

Public school teachers, specifically the Master Teachers and Head Teachers, can use the validated instrument to determine the level of classroom teaching performance of mathematics teachers and use it as a benchmark to craft training on pedagogical styles and various interventions. This is to make the mathematics teachers well-equipped with the necessary teaching skills for 21st-century learners under the K-12 curriculum. Researchers in the field can utilize this instrument for extended projects. Future researchers can re-assess and evaluate the scale or contextualize it for further investigations.

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9.0 References

- 15-Day Capacity Development Program on Data Analysis (2021). Sponsored by STAR Training Center. Title of the Topic: Factor Analysis. Speaker: Dr. Carlo P. Magno.
- Adamson, K., & Prion, S. (2013). Reliability: Measuring Internal Consistency Using Cronbach's α . *Clinical Simulation in Nursing*, 9, 179-180. <https://doi.org/10.1016/j.ecns.2012.12.001>
- Ali, S., & Maat, S. M. (2019). Exploring the 21st Century Teaching and Learning Practice among Mathematics Secondary School Teachers. *International Journal of Academic Research in Progressive Education and Development*, 8(2), 361-378. <http://dx.doi.org/10.6007/IJARPED/v8-i2/5990>
- Alkharusi, B., Aldhafri, S., Al-Hosni, K., Al-Busaidi, S., Ambusaidi, A. & Alrajhi, M. (2017). Development and Validation of a Scale for Measuring Mathematics Teaching Self Efficacy for Teachers in the Sultanate of Oman. *International Journal of Instruction*, 10(3), 143-158. <https://doi.org/10.12973/iji.2017.10310a>
- Arrieta, G.S. (2020). Assessment of the ICT Integration in Teaching Math and Science in High School: Basis for an ICT Integration Program. *Jurnal Pendidikan MIPA*. 21(1), 95-108. <http://dx.doi.org/10.23960/jpmipa/v21i1.pp95-108>
- Artuz, J. & Roble, D. (2021). Developing Students' Critical Thinking Skills in Mathematics Using Online-Process Oriented Guided Inquiry Learning (O-POGIL). *American Journal of Educational Research*. <https://www.sciepub.com/EDUCATION/abstract/13518>
- Asmar, A., Arnellis, A., & Sriningsih, R. (2020). Implementation of the 21st Century Skills to High Order Thinking Students' Mathematical in Senior High School Padang. *Journal of Physics: Conference Series*. International Conference on Mathematics and Mathematics Education. Volume 1554, <https://iopscience.iop.org/article/10.1088/1742-6596/1554/1/012080>
- Bal, A.P. (2023). Assessing the impact of differentiated instruction on mathematics achievement and attitudes of secondary school learners. *South African Journal of Education*. 43(1), 1-10. <https://orcid.org/0000-0003-1695-9876>
- Baumert, J., & Kunter, M. (2013). The Effect of Content Knowledge and Pedagogical Content Knowledge on Instructional Quality and Student Achievement. https://link.springer.com/chapter/10.1007/978-1-4614-5149-5_9
- Birgin, O. & Yilmaz, M. (2023). Development and Validation of a Scale to Assess the Frequency of Using Classroom Assessment Tools and Methods for Mathematics Teachers. *International Journal of Educational Research and Innovation (IJERI)*. 20, 1-20. <https://doi.org/10.46661/ijeri.8075>
- Branzuela, N., Namoco, S., Duero, J., & Walag, A.P. (2023). Descriptive Analysis of the National Achievement Test of Primary and Secondary Students in Misamis Oriental Philippines. *Sci.Int.(Lahore)*. 35(6), 809-813. https://www.researchgate.net/publication/376613773_Descriptive_Analysis_of_the_NAtional_Achievement_Test_Performanc_e_of_Primary_and_Secondary_Schools_Students_in_Misamis_Oriental_Philippines
- Buckle, J. (2024). A Comprehensive Guide to 21st Century Skills. Panorama Education. <https://www.panoramaed.com/blog/comprehensive-guide-21st-century-skills>
- Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS/Windows*. Thousand Oaks, CA: Sage Publications. <https://www.scirp.org/reference/referencespapers?referenceid=2264937>
- Calaguas, G. (2012). Teacher effectiveness scale in higher education: Development and psychometric properties. *International Journal of Research Studies in Education*, 2(2), 3-20. https://www.researchgate.net/publication/272696664_Teacher_effectiveness_scale_in_higher_education_Development_and_psy_chometric_properties
- Cambridge University Press (2021). Chapter 5 - Confirmatory Factor Analysis, retrieved from: <https://www.cambridge.org/core/books/abs/assessing-measurement-invariance-for-applied-research/confirmatory-factor-analysis/6244C89BBAC08AC1B33338076F15BEED>
- Capinding, A.T. (2023). Construction and Validation of Mathematical Satisfaction Questionnaire: An Exploratory and Confirmatory Factory Analysis. *Problems of Education in the 21st Century*. 81(3), 327-339. <http://dx.doi.org/10.2139/ssrn.4507618>

- Casildo, N., Aguirre, M., Bonifacio, K.L., Ayunar, G., Escarlos, G., & Wenceslao, R. (2023). A Decision Support System for Predicting Students' Performance in the National Achievement Test (NAT) of Senior High School Students. *ASSEHR* 745, 178-190. <https://www.atlantis-press.com/proceedings/icetech-22/125989114>
- Chigonga, B. (2020). Formative Assessment in Mathematics Education in the Twenty-First Century. *Theorizing STEM Education in the 21st Century*. <https://www.intechopen.com/chapters/69139>
- Demosthenous E, Christou C, Pitta-Pantazi D. (2021) Mathematics Classroom Assessment: A Framework for Designing Assessment Tasks and Interpreting Students' Responses. *European Journal of Investigation in Health, Psychology and Education*. 11(3), 1088-1106. <https://doi.org/10.3390/ejihpe11030081>
- Department of Education (2019). Classroom Observation Tool, Philippine Professional Standards for Teachers
- Department of Education. (2016). K-12 curriculum guide in Mathematics.
- Department of Education. (2023). MATATAG curriculum for Mathematics.
- DepEd order no. 8, s.2015. Policy Guidelines on Classroom Assessment for the K to 12 Basic Education Program
- Engel, K., Moosbrugger, H., and Muller H. (2003). Evaluating the Fit of Structural Equation Models: Tests of Significance and Descriptive Goodness Fit Measures. *MRP-Online*. 8, 23-74. https://www.researchgate.net/publication/251060246_Evaluating_the_Fit_of_Structural_Equation_Models_Tests_of_Significance_and_Descriptive_Goodness-of-Fit_Measures
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272-299. <https://doi.org/10.1037/1082-989X.4.3.272>
- Finster, M. & Feldman, J. (2019). Examining Construct Validity of a Child Health Interview Instrument. Westat, An Employee-Owned Research Corporation, 1600 Research Boulevard Rockville, Maryland 20850-3129 (301) pages 251-1500, <https://files.eric.ed.gov/fulltext/ED599089.pdf>
- Fornell, C., & Larcker, D.F. (1981). Evaluating Structural Equation Models with Unobserved variables and Measurement error. *JMR. Journal of Marketing Research*, 18(1), 39. <https://www.scirp.org/reference/ReferencesPapers?ReferenceID=1927929>
- Gebremedhin, M.A., & Fenta, A.A. (2015). Assessing Teachers' Perception on Integrating ICT in Teaching Learning Process: The Case of Adwa College. *Journal of Education and Practice*. 6(4), 114-124. <https://eric.ed.gov/?id=EJ1083759>
- George, M.P. (2021). Mathematics Teachers' Pedagogical Content Knowledge and its Relation to Student Achievement. Walden University, College of Education. <https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=12664&context=dissertations>
- Ghavifekr, S. & Rosdy, W.A.W. (2015). Teaching and learning with technology: Effectiveness of ICT integration in schools. *International Journal of Research in Education and Science (IJRES)*, 1(2), 175-191. <https://files.eric.ed.gov/fulltext/EJ1105224.pdf>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis* (7th ed.). Prentice-Hall. <https://www.drnishikanthja.com/papersCollection/Multivariate%20Data%20Analysis.pdf>
- Hawker, G.A., Davis, A.M., French, M.R., Cibere, J., Jordan, M.D., March, M.B., Suarez-Almazor, M., Katz, J.M., & Dieppe, P. (2008). Development and Preliminary Psychometric Testing of a New OA Pain Measure – an OARSI/OMERACT Initiative. *Osteoarthritis Research Society International*, 16, 409-414. <https://pubmed.ncbi.nlm.nih.gov/18381179/>
- Ismail, S. N., Muhammad, S., Omar, M. N., Shanmugam, S. K. S., & Rajoo, M. (2022). The practice of critical thinking skills in teaching mathematics: Teachers' perception and readiness. *Malaysian Journal of Learning and Instruction*, 19(1), 1-30. <https://doi.org/10.32890/mjli2022.19.1>
- Jislan, F., Jani, S. H. M., Shahid, S. A. M., Thomas, M., Francis, P., & Francis, P. (2018). Using Teaching Effectiveness Scale as Measurement for Quality Teaching. *International Journal of Academic Research in Business and Social Sciences*, 8(9), 1394-1404. <http://dx.doi.org/10.6007/IJARBS/v8-i9/4704>
- Joaquin, N.B., Lumbré, A.P., & Monterola, S.C. (2023). Relationship between Mathematics Teachers' Teaching Styles and Students' Achievement in Mathematics. *Athens Journal of Sciences*, 10(1), 9-30. <https://doi.org/10.30958/ajs.10-1-1>
- Kaya, D., & Keşan, C. (2023). The Connection of Mathematics with Real-Life Situations: Preservice Elementary Mathematics Teachers' Perceptions of Creating and Evaluating Story Problems. 12. 118-135. <https://doi.org/10.55020/iojpe.1135191>
- Keiler, L.S. (2018). Teachers' roles and identities in student-centered classrooms. *IJ STEM Ed* 5, 34. <https://doi.org/10.1186/s40594-018-0131-6>
- Kock, N. (2020). Using indicator correlation fit indices in PLS-SEM: Selecting the algorithm with the best fit. *Data Analysis Perspectives Journal*, 1(4), 1-4. https://scriptwarp.com/dapi/2020_DAPJ_1_4/Kock_2020_DAPJ_1_4_XsCorrMatrixIndices.pdf
- Lal Kumar, A.C., Dinesh Kumar, A., & Vasuki, M. (2024). A Study on Teaching Effectiveness of Mathematics Teachers, *International Journal of Scientific Research and Modern Education, International Peer Reviewed - Refereed Research Journal*, 9(1), 33- 37, https://www.researchgate.net/publication/378595477_A_STUDY_ON_TEACHING_EFFECTIVENESS_OF_MATHEMATICS_TEACHERS
- Lazarides, R., Watt, H., & Richardson, P. (2020). Teachers' classroom management self-efficacy, perceived classroom management, and teaching contexts from beginning until mid-career. *Learning and Instruction*. Volume 69. <https://doi.org/10.1016/j.learninstruc.2020.101346>
- Lesia, M.P., Aigbavboa, C.O. & Thwala, W.D. (2024). Factors influencing residential location choice in South Africa: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). *J Hous and the Built Environ*, 39, 133–160. <https://doi.org/10.1007/s10901-023-10070-w>
- Lynn, MR. (1986). Determination and quantification of content validity. *Nursing Research*. 35(6), 381–385, <https://www.scirp.org/reference/referencespapers?referenceid=2044975>
- Lucero, L., Hernandez, N., Grageda, C., & Semilla, J. (2024). Development and Validation of Classroom Observation Tool for Pre-Service Teachers based on Career Stage 1 of the Professional Standard for Teachers. 12(1), 194-203. <https://www.russianlawjournal.org/index.php/journal/article/view/3642/2328>
- Mananghaya, A. K. (2020). It's Not Complicated: Analysis of Data from A Single, Two, or More Populations. *University of the Philippines Los Baños, Institute of Statistics*. Webinar Title: One-STAT at a time Session 1. YouTube.
- Mathematics Teachers Association of the Philippines (n.d.). Cooperative Learning in the Teaching of Mathematics, prepared by Sr. Iluminada C. Coronel

- Mattan S., Ben-Shachar, Dominique, M., Daniel, L., Indrajeet, P., Brenton, W., Remi, T., & Wagonner, P. (n.d.). Interpret of CFA / SEM Indices of Goodness of Fit. effectsize. Retrieved from: https://easystats.github.io/effectsize/reference/interpret_gfi.html
- Mohd Arof, K., Ismail, S., & Saleh, A.L. (2018). Contractor's Performance Appraisal System in the Malaysian Construction Industry: Current Practice, Perception and Understanding. *International Journal of Engineering & Technology*. https://www.researchgate.net/publication/326698967_Contractor's_Performance_Appraisal_System_in_the_Malaysian_Construction_Industry_Current_Practice_Perception_and_Understanding
- Motseki, P. & Kakoma, L. (2023). The influence of different teaching and learning strategies in mathematics - a case study. *The Independent Journal of Teaching and Learning*. 18(1), 98-117. <https://doi.org/10.17159/ijtl.v18i1.17174>
- Myers, N., Ahn, S., & Jin, Y. (2011). Sample Size and Power Estimates for a Confirmatory Factor Analytic Model in Exercise and Sport: A Monte Carlo Approach. *Research Quarterly for Exercise and Sport, American Alliance for Health, Physical Education, Recreation and Dance*, 82(3), 412-423, <https://pubmed.ncbi.nlm.nih.gov/21957699/>
- National Council of Teachers of Mathematics (2020). NCTM 2020 Standards for Mathematics Teacher Preparation. <https://www.nctm.org/Standards-and-Positions/CAEP-Standards/>
- Nieto, J.L., Garrido, S., Dominguez-Lara, S., Levican, K., & Chacaltana, M. (2023). Psychometric properties of the Teachers' Sense of Efficacy Scale in a sample of Chilean public-school teachers. *Frontiers in Psychology*, Volume 14, <https://doi.org/10.3389/fpsyg.2023.1272548>
- Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric Theory*. New York, NY: McGraw-Hill
- Oswald, F., Donnellan, B., Ozkok, O., Zyphur, M., Barsky A., & Theilacker, M. (2019). Modeling Measurement as a Sequential Process: Autoregressive Confirmatory Factor Analysis (AR-CFA). *Frontiers in Psychology*. 10 | <https://doi.org/10.3389/fpsyg.2019.02108>
- Patnode, L.H., & Lee, H. (2021). Differentiated Instruction to Teach Mathematics: Through the Lens of Responsive Teaching. *Mathematics Teacher Education and Development*. 23(3), 6-25, <https://eric.ed.gov/?id=EJ1320720>
- Philippine Association of Researchers and Statistical Software Users (PARSSU). (2022). Confirmatory Factor Analysis and Structural Equation Modeling using SPSS AMOS: Statistical Tools for Theory-Testing Research, Topic 3. Presented by Prof. Johnny T. Amora.
- Philippine Star (2024, January 23). Delays in testing leave DepEd in the dark about student progress. Authored by Cristina Chi. <https://www.philstar.com/headlines/2024/01/23/2327932/delays-testing-leave-deped-dark-about-student-progress>
- Podkhodova, N., Snegurova, V., Stefanova, N., Triapitsyna, A., & Pisareva, S. (2020). Assessment of Mathematics Teachers' Professional Competence. *Journal on Mathematics Education*, 11(3), 477-500. <http://doi.org/10.22342/jme.11.3.11848.477-500>
- Price, P.C., Jhangiani, R., & Chiang, I.C. (2015). *Complex Correlational Designs*. *Research Methods in Psychology* - 2nd Edition. <https://opentextbc.ca/researchmethods/chapter/complex-correlational-designs/>
- Rakes, C.R., Stites, M.L., Ronau, R.N., Bush, S.B., Fisher, M.H., Safi, F., Desai, S., Schmidt, A., Andreasen, J.B., & Saderholm, J. (2022). Teaching Mathematics with Technology: TPACK and Effective Teaching Practices. *Educ. Sci.* 12, 133. <https://doi.org/10.3390/educsci12020133>
- Röschel A, & Wagner C, D, M. (2021). Examination of validity, reliability, and interpretability of a self-reported questionnaire on Occupational Balance in Informal Caregivers (OBI-Care) - A Rasch analysis. *PLoS One*. 16(12), 261-315. <https://pubmed.ncbi.nlm.nih.gov/34941966/>
- Sachdeva, S., & Eggen, P.O. (2021). Learners' Critical Thinking About Learning Mathematics. *International Electronic Journal of Mathematics Education*. 16(3), 6-44. <https://doi.org/10.29333/iejme/11003>
- Shahzad, S., & Mehmood, N. (2019). Development of Teaching Effectiveness Scale for University Teachers. *Journal of Research in Social Sciences*, 7(2), 2305-6533. https://www.researchgate.net/publication/336145557_Development_of_Teaching_Effectiveness_Scale_for_University_Teachers
- Shun, S., Beck, S., Pett, M., & Berry, P. (2006). Psychometric Testing of Three Chinese Fatigue Instruments in Taiwan. *Journal of Pain and Symptom Management*. 32, 155-167. <https://pubmed.ncbi.nlm.nih.gov/16877183/>
- Streiner, D., & Norman, G. (1991). *Health Measurement Scales: A Practical Guide to Their Development and Use*. Oxford University Press.
- Taber, K.S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, 48, 1273-1296. <https://doi.org/10.1007/s11165-016-9602-2>
- Tavakol M, & Wetzel A. (2020). Factor Analysis: a means for theory and instrument development in support of construct validity. *Int J Med Educ*. 11, 245-247. <https://pubmed.ncbi.nlm.nih.gov/33170146/>
- Teaching at UNSW, Sydney (2023). Giving Assessment Feedback. <https://www.teaching.unsw.edu.au/assessment-feedback>
- Türel, Y., Özdemir, T., & Elmali, F. (2017). Teachers' ICT Skills Scale (TICTS): Reliability and Validity. *Cukurova University Faculty of Education Journal*. 46, 503-516. <https://dergipark.org.tr/tr/download/article-file/358165>
- WGU. (2020). What is Constructivism? <https://www.wgu.edu/blog/what-constructivism2005.html#:~:text=Constructivism%20is%20based%20on%20the,new%20things%20that%20they%20learn>
- White M. (2021). Sample size in quantitative instrument validation studies: A systematic review of articles published in Scopus, *Heliyon*. 8(12), 122-143. <https://pubmed.ncbi.nlm.nih.gov/36568672/>
- Ximénez C. (2016). Recovery of Weak Factor Loadings When Adding the Mean Structure in Confirmatory Factor Analysis: A Simulation Study. *Frontiers of Psychology*. 6, 1943. <https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2015.01943/full>
- Yanuari, N. & Turmudi, T. (2023). Critical thinking in mathematics education: A bibliometric Analysis. *International Journal of Trends in Mathematics Education Research*. 6(2), pages 191-197. <https://doi.org/10.33122/ijtmer.v6i2.241>
- Yin, M., Cronen, S., Condelli, L., & Ogut, B. (2022). Teacher Effectiveness in Adult Education: The Relationship Between Teacher Characteristics and Student Test Gains and Transitions into Postsecondary Education. *Adult Education Quarterly*. 72(3), 262-283, <https://journals.sagepub.com/doi/abs/10.1177/07417136211044515>
- Yusoff, M.S. (2019). ABC of Content Validation and Content Validity Index Calculation. *Education in Medicine Journal*. 11, 49-54. <https://doi.org/10.21315/eimj2019.11.2.6>

Principals' Leadership Practices in Encouraging Parental Involvement in School Activities: Basis for a Proposed Shared Management Framework

Ernesto Jr. L. Español

Emilio Aguinaldo College, Manila, Philippines

Author email: josh1907geoff@gmail.com

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Abstract. This research focuses on principals' leadership strategies in fostering parental involvement in school events, which will serve as the foundation for a shared management framework that will be developed. In this context, the researcher will apply Bourdieu's theory of social practice to discover the objective circumstances of the field where parental engagement is generated and experienced, both now and in the future. The study will then look at how different types of home-school ties grow by examining the leadership behaviors and capital deployment of the principals. The researcher collected quantitative data using a descriptive method to determine the principals' leadership practices in encouraging parental involvement in school activities. The descriptive design is an acceptable strategy for gathering trustworthy and accurate data through survey measurement of two or more variables to determine or estimate the extent to which the variables' values are related or vary in an identifiable pattern. As a sampling design, the researcher utilized a purposive sampling strategy. The questionnaire is a researcher-modified tool based on Epstein's Theoretical Model (2016) and Burns' Transformational Leadership Theory (1978). The first section establishes the profile of parents and principal respondents in terms of age, sex, and highest educational attainment. It was revealed that there was no significant relationship between principals' leadership practices according to the findings. However, a strong association was discovered between principals' leadership practices in terms of intellectual stimulation and parental involvement in school events regarding children's mental and physical health.

Keywords: Leadership strategies; Bourdieu's Theory of Social Practice; Transformational leader.

1.0 Introduction

Parental involvement in children's education at home and school has grown as part of the current worldwide decentralization reform movement in different parts of the world (Beattie, 2018; Brown, 2015, 2015; Ho, 2016, 2016). Growing evidence of the positive impacts of parental involvement on children's learning and school success has prompted politicians, educators, and educational researchers to look for ways to increase parental involvement, especially among poor parents (Comer, Haynes, Joyner, & Ben-Avie, 2016, Coleman, 2015; Henderson, 2015; Henderson & Mapp, 2016, Ho & Willms, 2016). Until the School Management Initiative was announced in Hong Kong, parental involvement in their children's education was not formally recognized in educational policies (Education and Manpower Branch & Education Department, 2015). Since their inception, these policies have sparked a surge in interest in increasing parental involvement as one of the most important techniques for improving children's education and community school responsibility. However, according to several studies, Asian parents are only willing to assist their children's learning at home (Ho, 2016; Shen et al., 2015).

Furthermore, these studies claim that school administrators and teachers are often resistant to parental involvement (Pang, 2016; Shen, 2015; Shen et al., 2015). People appear to have varied conceptions of the phrase "parental involvement," as well as diverse ideas about the extent to which parents can become involved in their children's schools and the level of commitment that parents are willing to undertake. Indeed, little is known about how schools, teachers, and parents interpret the term "parental participation" and what value they place on it, and academics have yet to characterize or account for many different types of home-school interactions that exist in Asian schools.

With strategic planning and inviting parent participation in school concerns, school leaders can build meaningful parent relationships. By lowering barriers to parental involvement, principals can have a positive impact on parent-student relationships and achievement (Epstein, 2016). As a result, leadership attitudes must respect and value families and expectations must be adjusted in light of family demands.

On the other hand, the importance of parental involvement in schools to the achievement of education cannot be overstated (Henderson, 2015). Parents are their children's first and most influential teachers, and support from the school administration, particularly the principal, is critical (Sattes, 2018). Parental involvement gives schools the broad-based support they need to teach today's students. The quality and character of a child's home-school relationship have a significant impact on his education and academic success.

Furthermore, current concerns like site-based management, shared decision-making, and schools of choice need significant levels of parent involvement at the local level (Clinchy, 2015; Henninger, 2015; Taylor and Levine, 2015). Shared decision-making has the potential to be a crucial factor and parents' motivation and commitment. Similarly, in terms of parent involvement in today's local schools, school choice provides both opportunity and cause for concern (Nathan, 2015). Parent involvement programs have proven to be successful in several schools. However, the level of parental involvement varies from school to school.

Hence, the DepEd Order No. 13, s. 2022 orders regarding parental involvement in schools, and the need to update the operating manual of PTA, which will serve as a guide to collaborate and engage among education stakeholders. Another DepEd Order No. 54, s. 2009, parents are encouraged to be involved and participate in school activities have knowledge of learners' performance, volunteer themselves as teacher aids, and provide support to other parents.

2.0 Methodology

2.1 Research Design

The researcher collected quantitative data using a descriptive method (Siedlecki, 2020) to determine the principals' leadership practices in encouraging parental involvement in school activities. The descriptive design is an acceptable strategy for gathering trustworthy and accurate data through survey measurement of two or more variables to determine or estimate the extent to which the variables' values are related or vary in an identifiable pattern (Creswell, 2016). The descriptive research project can be done in three ways: (1) observational, which is defined as observing and recording participants; (2) case study, which is defined as an in-depth study of an individual or group of individuals; and (3) the survey which is defined as a research instrument containing the use of supply chain management in increasing customer value and cohesion.

2.2 Research Locale

This study will only focus on the principals' leadership practices in encouraging parental involvement in school activities in consideration of idealized influence, inspirational motivation, intellectual stimulation, and individual consideration as well as extra-curricular, students' mental and physical health and school development plan, respectively. Further, this research will employ purposive sampling which covers 7 selected secondary schools from City of Mandaluyong, District I and District II, namely City of Mandaluyong Science High School (CMSHS), Hulo Integrated School (HIS), Mandaluyong High School (MHS), Jose Fabella Memorial High School (JFNHS), Addition Hills Integrated School (AHIS), Highway Hills Integrated School (HHIS), and Bonifacio Javier National High School (BJNHS).

2.3 Research Participants

Seven (7) secondary school principals from the Schools Division Office of City of Mandaluyong from District I and District II are chosen as respondents based on the following criteria: 1) length of service as principal 2) school classification (medium and large), and 3) strategic location. While the ten (10) parent-respondents from each of the seven (7) schools are chosen based on 1) availability (Patton, 2015), 2) proximity, and 3) quality. As a sampling design, the researcher utilized a purposive sampling strategy. It is a purposive sampling approach, as defined by Easton & McColl, in which the researcher picks a group of participants (a sample) for study from a wider group (a population). Because everyone will be chosen by random and each member of the population has an equal probability of being included in the sample, this sampling method will choose to offer an equal chance to every conceivable sample.

2.4 Research Instruments

The questionnaire is a researcher-modified tool that is based on Epstein's Theoretical Model (2016) and Burns' Transformational leadership Theory (1978). Members of the review panel and experts in the field of research will serve as critics or perform face validation. The researcher is open to comments and will make any necessary changes to ensure the instrument's validity.

2.5 Data Gathering Procedure

There are two sections to the instrument. The first section establishes the profile of parents and principal respondents in terms of age, sex, and the highest educational attainment. The second section involved the respondents' assessments of the principals' leadership practices in encouraging parental involvement in school activities in terms of idealized influence, inspirational motivation, intellectual stimulation, and individual consideration as well as the extent of parental involvement in school activities as to extra-curricular, students' mental and physical health and school development plan. The Statistical Program for Social Sciences (SPSS) version 20.0, developed by the International Business Machines Corporation (IBM), processed the data collected in the first and second sections.

2.6 Data Analysis

The quantitative data was analyzed using Statistical Package for the Social Sciences (SPSS) software. Statistical tools such as frequency distribution, percentages, weighted mean, t-Test, and ANOVA (analysis of Variance) to process the raw data into meaningful information.

2.7 Ethical Considerations

When conducting this study, the researcher will adhere to all ethical norms, including the following: The research strategy of this study is focused on answering specific research questions. As a result, the study's findings and conclusions must be in line with the research questions. Furthermore, according to research ethics, the methodology used must be closely related to the research objectives. Nobody should ever feel obligated to take part in a research study. This category includes any type of persuasion or deception used to gain someone's trust. To participate in a study employing informed consent, people must give their explicit consent. The researcher will present a consent form as a trust agreement between the researcher and the participants. The confidentiality of study subjects' information, as well as the anonymity of responses, must be respected.

3.0 Results and Discussion

Table 1. Frequency distribution of the respondents' profile in terms of age

Age	Principals		Parents		Total	
	f	%	f	%	f	%
20 years old & below	-	-	1	1.4%	1	7.8%
21-30 years old	-	-	15	21.4%	15	19.5%
31-40 years old	-	-	28	40.0%	28	36.4%
41-50 years old	5	71.4%	20	28.6%	25	32.5%
51 years old & above	2	28.6%	6	8.6%	8	10.4%
Total	7	100%	70	100%	77	100%

Table 1 presents the frequency distribution of the respondents' profiles in terms of age. Most (f=28, 40.0 percent) of the respondents are 31-40 years old, followed by 41-50 years old (f=20, 28.6 percent); 21-30 years old (f=15, 21.4

percent); 51 years old & above (f=8, 8.6 percent); and 20 years old & below (f=6, 1.4 percent). These results show that the majority of the respondents are young professionals and most likely have experienced leadership challenges at school involving both the school heads and teachers.

Table 2. Frequency distribution of the respondents' profile in terms of sex

Sex	Principals		Parents		Total	
	f	%	f	%	f	%
Male	4	57.1%	22	31.4%	26	33.8%
Female	3	42.9%	48	68.6%	51	66.2%
Total	7	100%	70	100%	77	100%

Table 2 exhibits the frequency distribution of the respondents' profile in terms of sex. Most (f=51, 66.2 percent) of the respondents are female and the rest (f=26, 33.8 percent) is male. This is a female-dominated study.

Table 3. Frequency distribution of the respondents' profile in terms of educational attainment

Educational Attainment	Principals		Parents		Total	
	f	%	f	%	f	%
High School graduate	-	-	17	24.6%	17	22.1%
Bachelor's degree	-	-	37	52.9%	37	48.1%
w/ MA units	2	28.6%	14	20.0%	16	20.8%
Master's degree	1	14.3%	-	-	1	1.3%
w/ PhD units	1	14.3%	2	2.9%	3	3.9%
PhD degree	3	42.9%	-	-	3	3.9%
Total	7	100%	70	100%	77	100%

Table 3 reveals the frequency distribution of the respondents' profiles in terms of educational attainment. Most (f=37, 52.9 percent) of the respondents have a Bachelor's degree followed by High School graduates (f=17, 24.6 percent); w/ MA units (f=16, 20.0 percent); w/ PhD units and PhD degree (f=3, 2.9 percent) and Master's degree (f=1, 1.8 percent). Based on the results it can be seen that School Heads have continuously improved their craft by continued education like some parents.

Table 4. Summary of the respondents' assessment of the principals' leadership practices in encouraging parental involvement in school activities

Leadership Practices	Weighted Mean	SD	Interpretation	Ranking
1. Idealized Influence	3.71	0.38	Strongly Agree	3
2. Inspirational Motivation	3.69	0.36	Strongly Agree	4
3. Intellectual Stimulation	3.90	0.13	Strongly Agree	2
4. Individual Consideration	3.94	0.10	Strongly Agree	1
Over-all Mean	3.81	0.20	Strongly Agree	

Note: 3.51-4.00 Strongly Agree; 2.51-3.50 Agree; 1.51-2.50 Moderately Agree; 1.00-1.50 Disagree

Table 4 presents the summary of the respondents' assessment of the principals' leadership practices in encouraging parental involvement in school activities with an overall composite mean of 3.81 with SD of 0.20 and is interpreted as Strongly Agree. Respondents strongly agree that individual consideration (x=3.94) with SD of 0.10 and rank 1 is prominent about principals' leadership practices followed by intellectual stimulation (x=3.90) with SD of 0.13 and rank 2, idealized influence (x=3.71) with SD of 0.38 and rank 3, and inspirational motivation (x=3.69) with SD of 0.36 and rank 4. Parental involvement is critical for effective schools, and transformational leadership enhances teacher and staff participation. Parental engagement is also essential for transformational leadership. Practices that reinforce school culture, establish successful organizational structures, and foster collaborative processes are used by a charismatic and image-conscious transformational leader.

Table 5. Summary of the respondents' assessment on the extent of parental involvement in school activities

Parental Involvement in School Activities	Weighted Mean	SD	Interpretation	Ranking
1. Students' Extra-Curricular	3.51	0.44	Full Extent	1
2. Students' Mental and Physical Health	3.49	0.48	High Extent	2
3. School Development Plan	3.47	0.50	High Extent	3
Over-all Mean	3.50	0.43	High Extent	

Table 5 shows the summary of the respondent's assessment of the extent of parental involvement in school activities with an overall composite mean of 3.50 with SD of 0.43 and is interpreted as 'High Extent'. Parents believe that their involvement can be seen most in supporting their children's extracurricular ($x=3.51$) with SD of 0.44 and rank 1 and then on their mental and physical health ($x=3.49$) with SD of 0.48 and rank 2 and school development plan ($x=3.47$) with SD of 0.50 and rank 3. According to Seeley (2015), there has been a societal movement toward seeing parental involvement in schools as critical. As a result, schools freely and consciously abandoned the delegation model in favor of the value of parental involvement in goal setting and achievement, which has since become more well-documented and widely accepted. Even though the delegation model is losing favor, Seeley explained that many US societies still have a strong commitment to it. Furthermore, as Seeley (2015) explained, some educators may believe that moving away from the delegation model is impractical and would need a significant amount of additional labor and finance.

Table 6. Differences in the assessment of respondents on the principals' leadership practices according to age

Leadership Practices	Age	Weighted Mean	SD	t-value	Sig	Decision on Ho	Interpretation
1. Idealized Influence	41-50 y/o	3.76	0.36	0.47	0.66	Accepted	Not Significant
	51 y/o & above	3.60	0.57				
2. Inspirational Motivation	41-50 y/o	3.72	0.33	0.37	0.73	Accepted	Not Significant
	51 y/o & above	3.60	0.57				
3. Intellectual Stimulation	41-50 y/o	3.90	0.15	-0.13	0.91	Accepted	Not Significant
	51 y/o & above	3.92	0.12				
4. Individual Consideration	41-50 y/o	3.96	0.09	0.70	0.51	Accepted	Not Significant
	51 y/o & above	3.90	0.14				
Over-all	41-50 y/o	3.84	0.16	0.46	0.66	Accepted	Not Significant
	51 y/o & above	3.76	0.35				

Table 6 presents the differences in the assessment of respondents on the principals' leadership practices when grouped according to age. The computed Sig. values for Idealized Influence (0.66), Inspirational Motivation (0.73), Intellectual Stimulation (0.91), and Individual Consideration (0.51) accepted the null hypothesis of no significant difference. This means that the respondents' assessments of the principals' leadership practices and their age are significantly the same.

Table 7. differences in the assessment of respondents on the principals' leadership practices according to sex

Leadership Practices	Sex	Mean	SD	t-value	Sig	Decision on Ho	Interpretation
1. Idealized Influence	Male	3.70	0.38	-0.11	0.92	Accepted	Not Significant
	Female	3.73	0.46				
2. Inspirational Motivation	Male	3.65	0.34	-0.28	0.79	Accepted	Not Significant
	Female	3.73	0.46				
3. Intellectual Stimulation	Male	3.88	0.16	-0.65	0.54	Accepted	Not Significant
	Female	3.94	0.10				
4. Individual Consideration	Male	3.95	0.10	0.21	0.85	Accepted	Not Significant
	Female	3.93	0.12				
Over-all	Male	3.80	0.15	-0.26	0.81	Accepted	Not Significant
	Female	3.84	0.28				

Table 7 shows the differences in the assessment of respondents on the principals' leadership practices when grouped according to sex. The estimated Sig accepted the null hypothesis of no significant difference. values for Idealized Influence (0.92), Inspirational Motivation (0.79), Intellectual Stimulation (0.54), and Individual Consideration (0.85). This suggests that the respondents' opinions of the principals' leadership styles and gender are remarkably similar.

Table 8 exhibits the differences in the assessment of respondents on the principals' leadership practices when grouped according to educational attainment. The computed Sig. values for Idealized Influence (0.61), Inspirational Motivation (0.58), Intellectual Stimulation (0.27), and Individual Consideration (0.27) supported the

null hypothesis of no meaningful difference (0.46). This shows that the respondents have fairly comparable views on the principals' leadership styles and educational achievement.

Table 8. Differences in the assessment of respondents on the principals' leadership practices according to educational attainment

Leadership Practices	Educational Attainment	Mean	SD	F-value	Sig	Decision on Ho	Interpretation
1. Idealized Influence	w/ MA units	3.80	0.28	0.71	0.61	Accepted	Not Significant
	Master's degree	4.00	.				
	w/ PhD units	3.20	.				
	Doctoral degree	3.73	0.46				
2. Inspirational Motivation	w/ MA units	3.70	0.14	0.77	0.58	Accepted	Not Significant
	Master's degree	4.00	.				
	w/ PhD units	3.20	.				
	Doctoral degree	3.73	0.46				
3. Intellectual Stimulation	w/ MA units	3.75	0.11	2.20	0.27	Accepted	Not Significant
	Master's degree	4.00	.				
	w/ PhD units	4.00	.				
	Doctoral degree	3.94	0.10				
4. Individual Consideration	w/ MA units	4.00	0.00	1.14	0.46	Accepted	Not Significant
	Master's degree	4.00	.				
	w/ PhD units	4.00	.				
	Doctoral degree	3.87	0.12				
Over-all	w/ MA units	3.82	0.06	0.54	0.69	Accepted	Not Significant
	Master's degree	4.00	.				
	w/ PhD units	3.60	.				
	Doctoral degree	3.82	0.27				

Table 9. Differences in the assessment of respondents on the extent of involvement in school activities according to age

Involvement in School Activities	Age	Mean	SD	F-value	Sig	Decision on Ho	Interpretation
1. Extra-curricular	20 y/o & below	3.00	.	2.98	0.06	Accepted	Not Significant
	21-30 y/o	3.24	0.44				
	31-40 y/o	3.60	0.44				
	41-50 y/o	3.64	0.38				
	51 y/o & above	3.70	0.39				
2. Mental & Physical	20 y/o & below	4.00	.	1.92	0.12	Accepted	Not Significant
	21-30 y/o	3.25	0.34				
	31-40 y/o	3.47	0.56				
	41-50 y/o	3.64	0.41				
	51 y/o & above	3.63	0.44				
3. School Development	20 y/o & below	4.00	.	2.53	0.09	Accepted	Not Significant
	21-30 y/o	3.19	0.44				
	31-40 y/o	3.45	0.56				
	41-50 y/o	3.61	0.38				
	51 y/o & above	3.73	0.43				
Over-all	20 y/o & below	3.687	.	2.44	0.06	Accepted	Not Significant
	21-30 y/o	3.23	0.37				
	31-40 y/o	3.51	0.48				
	41-50 y/o	3.63	0.36				
	51 y/o & above	3.69	0.41				

Table 9 exhibits the differences in the assessment of respondents to the extent of involvement in school activities when grouped according to age. The computed Sig. values for extracurricular (0.06), Mental & Physical (0.12), and School Development (0.09) accepted the null hypothesis of no significant difference. This means that the respondents' assessments of parents' extent of involvement in school activities and their age are significantly the same.

Table 10 shows the differences in the assessment of respondents in the extent of involvement in school activities when grouped according to sex. The estimated Sig accepted the null hypothesis of no significant difference values for Extracurricular (0.07), Mental & Physical (0.24), and School Development (0.69). This suggests that the respondents' perceptions of their parent's level of involvement in school activities and their sexual orientation are quite similar.

Table 10. Differences in the assessment of respondents on the extent of involvement in school activities according to sex

Involvement in School Activities	Sex	Mean	SD	t-value	Sig	Decision on Ho	Interpretation
1. Extra-curricular	Male	3.39	0.44	-1.87	0.07	Accepted	Not Significant
	Female	3.60	0.43				
2. Mental & Physical	Male	3.41	0.32	-1.18	0.24	Accepted	Not Significant
	Female	3.53	0.54				
3. School Development	Male	3.44	0.46	-0.40	0.69	Accepted	Not Significant
	Female	3.49	0.52				
Over-all	Male	3.41	0.35	-1.26	0.21	Accepted	Not Significant
	Female	3.54	0.47				

Table 11. Differences in the assessment of respondents on the extent of involvement in school activities according to educational attainment

Involvement in School Activities	Educational Attainment	Mean	SD	F-value	Sig	Decision on Ho	Interpretation
1. Extra-curricular	High School	3.62	0.41	0.73	0.54	Accepted	Not Significant
	Bachelor's degree w/ MA units	3.47	0.47				
	w/ PhD units	3.56	0.42				
	High School	3.80	0.00				
2. Mental & Physical	High School	3.56	0.56	1.29	0.29	Accepted	Not Significant
	Bachelor's degree w/ MA units	3.40	0.46				
	w/ PhD units	3.61	0.42				
	High School	3.88	0.18				
3. School Development	High School	3.53	0.51	0.79	0.50	Accepted	Not Significant
	Bachelor's degree w/ MA units	3.39	0.52				
	w/ PhD units	3.59	0.45				
	High School	3.70	0.14				
Over-all	High School	3.57	0.41	1.04	0.38	Accepted	Not Significant
	Bachelor's degree w/ MA units	3.42	0.45				
	w/ PhD units	3.58	0.42				
	High School	3.79	0.01				

Table 12 reveals the differences in the assessment of respondents in the extent of involvement in school activities when grouped according to educational attainment. The computed Sig. values for Extracurricular (0.54), Mental & Physical (0.29), and School Development (0.29) supported the null hypothesis of no significant difference (0.50). This indicates that the respondents' assessments of their parent's involvement in school activities and educational attainment are very comparable.

Table 12. Relationship between the principals' leadership practices and parental involvement in school activities

Principals' Leadership Practices	Parental Involvement in School Activities	Computed r	Sig	Decision on Ho	Interpretation
1. Idealized Influence	Students' Extra-Curricular	-0.13	0.78	Accepted	Not Significant
	Students' Mental and Physical Health	0.43	0.33	Accepted	Not Significant
	School Development Plan	0.33	0.47	Accepted	Not Significant
2. Inspirational Motivation	Students' Extra-Curricular	-0.10	0.82	Accepted	Not Significant
	Students' Mental and Physical Health	0.56	0.19	Accepted	Not Significant
	School Development Plan	0.41	0.36	Accepted	Not Significant
3. Intellectual Stimulation	Students' Extra-Curricular	0.32	0.48	Accepted	Not Significant
	Students' Mental and Physical Health	0.79	0.04	Rejected	Significant
	School Development Plan	0.25	0.60	Accepted	Not Significant
4. Individual Consideration	Students' Extra-Curricular	0.71	0.07	Accepted	Not Significant
	Students' Mental and Physical Health	-0.04	0.94	Accepted	Not Significant
	School Development Plan	-0.36	0.43	Accepted	Not Significant
Over-all Principals' Leadership Practices	Over-all Parental Involvement in School Activities	0.48	0.28	Accepted	Not Significant

Table 12 shows the relationship between the principals' leadership practices and parental involvement in school activities. The result shows that there was no significant relationship between the leadership practices of Principals in terms of idealized influence, inspirational motivation, individual consideration, and parental involvement in school activities in terms of extracurricular, students' mental and physical health, and school development plan. However, a significant relationship was found between Principals' leadership practices in terms of intellectual stimulation, and parental involvement in school activities in terms of students' mental and physical health. The central leadership role of school principals, as indicated by the data given in this literature review, places them in a position of influence and authority when it comes to constructing the relationship between schools and parents. Principals, according to Goldring and Hausman (2016), occupy a "strategic position" for these purposes, with the ability to create an environment conducive to strengthening – or weakening – the school-parent relationship. This highlights the need for more research on the role of principals in including parents, research that recognizes the responsibility that principals bear in light of their relative influence in the educational system.

4.0 Conclusion

The following conclusions are derived from this study:

- a. The majority of parents' respondents are millennials and Generation X. This only shows that these groups of parents are involved in school activities. The principal is female-dominated with bachelor's degrees and Ph.D. units.
- b. The assessment of the respondents on the principals' leadership practices in encouraging parental involvement in school activities in terms of idealized influence, inspirational motivation, intellectual stimulation, and individual consideration was strongly agreed. This implied that they carry out their leadership practices effectively.
- c. The respondents' assessment of the extent of parental involvement in school activities is that there was a full extent on students' extra-curricular and a high extent on students' mental and physical activities and school development plan.
- d. There is no significant difference between principals' leadership practices when grouped according to age, sex, and educational attainment. This only proves that principals, regardless of their profiles, can still attend to their duties and responsibilities as leaders.
- e. There is no significant difference between the parents' extent of involvement in school activities when grouped according to age, sex, and educational attainment. The findings imply that parents do involve themselves in school activities regardless of their profile.
- f. There was no significant relationship between Principals' leadership practices in terms of idealized influence, inspirational motivation, individual consideration, and parental involvement in school activities in terms of extra-curricular, mental and physical health, and school development plan, according to the findings. In terms of kids' mental and physical health, however, a strong association was discovered between Principals' leadership practices in terms of intellectual stimulation and parental involvement in school events. It shows here that the collaboration of the principals and parents plays an important role in the development of the mental and physical health of the students.
- g. The researcher concluded that it simply proves that the cooperation of parents and the school, teacher, and school administration is of paramount importance for the good of the learners, in their development and enhancing the performance of the school. The school admin and teachers must have the knowledge to deal with parents properly. Parent involvement in school activities are part of the school's success, learners's achievement, and the effectiveness of teachers in facilitating learning. As a leader, the skills in inspiring, stimulating, influencing, and motivating parents' involvement in school activities must be included in school priorities.

Based on the findings of the study, the following recommendations are:

- a. The principals can be encouraged to enroll in graduate studies for professional development
- b. The principal may devise and implement an external evaluation to get feedback on how his/her actions affect people's performance.
- c. The principals can also initiate programs, projects, and activities (PPAs) that will articulate the mission and vision of the school, develop teachers' and students' abilities and potential, and will stimulate interest among teachers, students, and parents to view their work from new perspectives.

- d. Strengthen the existing partnership between the school and the community (Catechesis's Program, Youth for Christ Interact Club, and Cornerstone) which focuses on developing life lessons and providing opportunities for the students.
- e. The Schools Division Office (SDO) is encouraged to conduct a seminar or training that will enhance the principal's interrelationship skills to bolster their leadership practices, particularly on individual consideration.
- f. The school can start activities that would encourage parent's involvement in extra-curricular, mental and physical, and school development projects and other undertakings or activities.
- g. The principal may also include programs, projects, and activities (PPAs) that will support the mental and physical development of students and will provide assistance from parents to engage themselves in such school activities.

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All contributions to each part of this work were made by the sole author himself. He reviewed and approved the final version of this work.

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7.0 Conflict of Interests

The sole author affirms the absence of any conflicts of interest.

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9.0 References

- Adams, K. S., & Christenson, S. L. (2016). Trust and the family-school relationship: Examination of parent-teacher differences in elementary and secondary grades. *Journal of School Psychology, 38*(5), 477-497. [https://doi.org/10.1016/S0022-4405\(00\)00048-0](https://doi.org/10.1016/S0022-4405(00)00048-0)
- Amitay, S., Hawkey, D. J. C., & Moore, D. R. (2017). Auditory frequency discrimination learning is affected by stimulus variability. *Percept Psychophys, 67*(4), 691-698.
- Ascher, C. (2015). Improving the school-home connection for poor and minority students. *The Urban Review, 20*, 109-123. <https://doi.org/10.1007/BF01112512>
- Atkinson, P., Coffey, A., & Delamont, S. (2016). Key themes in qualitative research: Continuities and changes. *AltaMira*. <https://doi.org/10.1007/BF01112512>
- Ball, S. (2015). The micro-politics of the school: Towards a theory of school organization. *Methuen*.
- Ballou, D., & Podgursky, M. (2015). Recruiting smarter teachers. *Journal of Human Resources, 30*(2), 326-338.
- Balyer, A. (2018). Transformational leadership behaviors of school principals: A qualitative research based on teachers' perceptions. *International Online Journal of Educational Sciences, 4*(3), 581-591.
- Barnard, W. M. (2017). Parent involvement in elementary school and educational attainment. *Children and Youth Service Review, 26*, 39-62. <https://doi.org/10.1016/j.childyouth.2016.11.002>
- Barton, P. E. (2016). Parsing the achievement gap. *Educational Testing Service*.
- Bauch, P. A., & Goldring, E. B. (2016). Teacher work context and parent involvement in urban high schools of choice. *Educational Research and Evaluation, 6*(1), 1-23. [https://doi.org/10.1076/1380-3611\(201603\)6:1;1-1;FT001](https://doi.org/10.1076/1380-3611(201603)6:1;1-1;FT001)
- Becker, H. J., & Epstein, J. L. (2018). Parent involvement: A survey of teacher practices. *The Elementary School Journal, 83*(2), 103-113.
- Becker, H. J., Nakagawa, K., & Corwin, R. G. (2016). Parent involvement contracts in California's charter schools: Strategy for educational improvement or method of exclusion? *Teachers College Record, 98*(3), 511-536.

- Beteille, T., Kalogrides, D., & Loeb, S. (2018). Stepping stones: Principal career paths and school outcomes. *Social Science Research*, 41(4), 904–919.
- Bennis, W., & Nanus, B. (2018). *Leaders: The strategies for taking charge*. Harper and Row.
- Bolivar, J. M., & Chrispeels, J. H. (2018). Enhancing parent leadership through building social and intellectual capital. *American Educational Research Journal*, 48, 4-38. <https://doi.org/10.3102/0002831210366466>
- Bono, J. E., & Judge, T. A. (2017). Personality and transformational and transactional leadership: A meta-analysis. *Journal of Applied Psychology*, 89(5), 901-910. <https://doi.org/10.1037/0021-9010.89.5.901>
- Bower, H., & Griffin, D. (2018). Can the Epstein model of parental involvement work in a high minority, high-poverty elementary school? A case studies. *Professional School Counseling*, 15(2). <https://doi.org/10.1177/2156759X1101500201>
- Catsambis, J. S., & Garland, J. E. (2016). *Parental involvement in students' education during middle school and high school*. John Hopkins University: Center for Research of the Education of Students Placed at Risk.
- Constantino, S. M. (2016). *Engaging all families: Creating a positive school culture by putting research into practice*. Scarecrow Education.
- Goodall, J., & Montgomery, C. (2018). Parental involvement to parental engagement: A continuum. *Educational Review*, 66(4), 399-410. <https://doi.org/10.1080/00131911.2018.781576>
- Corbin, J., & Strauss, A. (2018). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Sage. <https://dx.doi.org/10.4135/9781452230153>
- Creswell, J. W. (2017). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Sage Publications, Inc.
- Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approach* (3rd ed.). Sage Publications, Inc.
- Creswell, J. W. (2018). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Pearson.
- Crozier, G., & Davies, J. (2017). Hard to reach parents or hard to reach schools? A discussion of home-school relations, with particular reference to Bangladeshi and Pakistani parents. *British Educational Research Journal*, 33(3), 295-313. <https://doi.org/10.1080/01411920701243578>
- Denzin, N. K., & Lincoln, Y. S. (2017). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of qualitative research* (pp. 1–32). Sage Publications Ltd.
- De Luigi, & Martelli, A. (2015). Attitudes and practices of parents: Disadvantage and access to education. *European Education*, 47, 46-60. <https://doi.org/10.1080/10564934.2015.1001259>
- Driessen, G., & Smit, F. (2017). Parents and schools as partners in multicultural and multireligious society. *Journal of Empirical Theology*, 20(1), 1-20. <https://doi.org/10.1163/157092507X188557>
- Desforges, C., & Abouchaar, A. (2016). *The impact of parental involvement, parental support and family education on pupil achievement and adjustment: A literature review [Research report]*. Department of Education and Skills.
- Epstein, J., & Dauber, S. (2015). School programs and teacher practices of parent involvement in inner city elementary and middle schools. *The Elementary School Journal*, 91(3), 289. <https://doi.org/10.1086/461656>
- Fan, X. (2016). Parental involvement and students' academic achievement: A growth modeling analysis. *The Journal of Experimental Education*, 70(1), 27-61. <https://doi.org/10.1080/00220970109599497>
- Fan, W., & Williams, C. (2018). The effects of parental involvement on students' academic self- efficacy, engagement and intrinsic motivation. *Educational Psychology*, 30(1), 53-74. <https://doi.org/10.1080/01443410903353302>
- Gaziel, H. (2016). Images of leadership and their effect upon school principals' performance. *International Review of Education*, 49(5), 475-486. <https://doi.org/10.1023/A:1026353007490>
- Goodall, J., & Montgomery, C. (2018). Parental involvement to parental engagement: A continuum. *Educational Review*, 66(4), 399-410. <https://doi.org/10.1080/00131911.2018.781576>
- Hill, N. E., & Taylor, L. C. (2017). Parental school involvement and children's academic achievement: Pragmatics and issues. *Current Directions in Psychological Science*, 13(4), 161-164. <https://doi.org/10.1111/j.0963-7214.2017.00298.x>
- Ingram, M., Wolfe, R. B., & Lieberman, J. M. (2017). The role of parents in high achieving schools serving low-income, at-risk populations. *Education and Urban Society*, 39(4), 479-497. <https://doi.org/10.1177/0013124507302120>
- Jackman, C. S. (2018). *Middle school teachers' perceptions of parental involvement in title vs. non-title schools*. <https://core.ac.uk/download/pdf/58825283.pdf>
- Jackson, R. L. (2016). *Transformational and transactional leadership in division administration at three institutions of higher education: An application of the Bass and Avolio Multifactor Leadership Questionnaire [Doctoral dissertation, University of Cincinnati]*. Dissertation Abstracts International, 60, 2308.
- Kuhnert, K. W., & Lewis, P. (2015). Transactional and transformational leadership: A constructive developmental analysis. *Academy of Management Review*, 12(4), 648-657. <https://doi.org/10.2307/258070>
- LaMagdeleine, D. R. (2016). *The leadership imagination: An introduction to taxonomic leadership analysis*. Edward Elgar Publishing.
- Leithwood, K., & Sun, J. (2018). The nature and effects of transformational school leadership: A meta-analytic review of unpublished research. *Educational Administration Quarterly*, 48(3), 387-423.
- Lloyd-Smith, L., & Baron, M. (2018). Beyond conferences: Attitudes of high school administrators toward parental involvement in one small Midwestern state. *The School Community Journal*, 20(2), 23-44.
- Lopez, G. R. (2016). The value of hard work: Lessons on parent involvement from (im)migrant household. *Harvard Educational Review*, 71(3), 416-437. <https://doi.org/10.17763/haer.71.3.43x7k542x023767u>
- Merriam, S. B. (2016). Introduction to qualitative research. In S. B. Merriam & Associates (Eds.), *Qualitative research in practice: Examples for discussion and analysis*. Jossey-Bass.
- Mestinek, R. M. (2016). *A comparative study of leadership characteristics of principals in charter schools and traditional schools [Doctoral dissertation, University of San Diego]*. Dissertation Abstracts International, 61, 489.
- Miles, B. M., Huberman, A. M., & Saldana, J. (2018). *Qualitative data analysis: A methods*. Sage.
- NCES. (2017). *Parent and family involvement in education: Results from the national household education surveys program of 2016*. <https://nces.ed.gov/pubs2017/2017102.pdf>
- Nir, A., & Hameiri, L. (2018). School principals' leadership style and school outcomes: The mediating effect of powerbase utilization. *Journal of Education Administration*, 52(2), 2018-2227.
- Ouimette, M. Y., Feldman, J., & Tung, R. (2017). Collaborating for high school student success: A case study of parent engagement at Boston arts academy. *The School Community Journal*, 16(2), 91-114.

- Patton, M. Q. (2016). *Qualitative research and evaluation methods* (3rd ed.). Sage Publishing.
- Patton, M., & Cocharn, M. (2016). *A guide to using qualitative research methodology*. Médecins Sans Frontières, Paris.
- Pellicer, L. O., Anderson, L. W., Keefe, J. W., Kelley, E. A., & McCleary, L. E. (2015). High school leaders and their schools: Profiles of effectiveness. *National Association of Secondary School Principals*.
- Pena, D. (2016). Parent Involvement: Influencing Factors and Implications. *The Journal of Educational Research*, 94(1), 42-54. <https://doi.org/10.1080/00220670009598741>
- Philbin, L. P. III. (2016). Transformational leadership and the secondary school principal [Abstract]. *Dissertation Abstracts International*, 58(09), 3386A.
- Smith, J., Wohlstetter, P., Kuzin, C. A., & De Pedro, K. (2018). Parent involvement in urban charter schools: New strategies for increasing participation. *The School Community Journal*, 21(1), 71-94.
- Thurston, D. (2017). Leveling the home advantage: Assessing the effectiveness of parental involvement. *Sociology of Education*, 78, 233-249. <https://doi.org/10.1177/003804070507800303>
- Tibaldo, L. J. (2015). The relationship of leadership style behaviors of principals to the existence of effective schools [Doctoral dissertation, Western Michigan University]. *Dissertation Abstracts International* 55, 3710.
- Topor, D. R., Keane, S. P., Shelton, T. L., & Calkins, S. D. (2018). Parental involvement and student academic performance: A multiple mediational analysis. *Journal of Prev Interv Community*, 38(3), 183-197. <https://doi.org/10.1080/10852352.2018.486297>
- Whittemore, R., Chase, S. K., & Mandle, C. L. (2016). Validity in qualitative research. *Qualitative Health Research*, 11, 522-537. <https://doi.org/10.1177/104973201829119299>
- Yin, R. K. (2016). *Case study research: Design and methods*.

Academic Resilience in Mathematics Among Senior High School Students in Mindanao State University-Sulu

Allen I. Talikan

Mindanao State University - Sulu, Jolo, Sulu, Philippines

Author email: sscgspub@sulustatecollege.edu.ph

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Abstract. This study investigated the extent of academic resilience in mathematics among senior high school students at Mindanao State University-Sulu (MSU-Sulu). Descriptive-correlational research design was used to gather data from 120 respondents. The findings revealed the student-respondents are mostly females aged between 17-18 years old. There is an equal representation of grade levels, and most students' parents have a monthly income between P20,001.00 and P30,000.00. Additionally, the majority of parents are college graduates; 2) The student-respondents displayed a high positive attitude towards mathematics in most categories. However, they showed some ambiguity in the category of 'Struggle'; 3) The study revealed no significant differences based on gender, age, parents' monthly income, or educational attainment. However, grade level was found to be a notable factor, with grade 11 and grade 12 students exhibiting varying degrees of resilience. This suggests that students' perceptions of academic resilience in mathematics may develop as they progress through senior high school; 4) The findings also revealed that only the correlation between 'Value' and 'Growth' is statistically significant, although it is weak. The correlations between 'Value' and 'Struggle', and 'Struggle' and 'Growth' are not statistically significant. Consequently, the hypothesis stating that there is no significant correlation among the subcategories of academic resilience in mathematics is largely supported, except for the weak but significant correlation between 'Value' and 'Growth'. Based on these findings, the study recommends the following: 1) The University administrator should incorporate goals and strategies related to promoting academic resilience in mathematics into MSU's strategic planning initiatives and policies; 2) Faculty members of MSU-Sulu should adopt flexible instructional approaches that accommodate diverse learning styles and levels of mathematical proficiency among students; 3) They may also consider adopting student-centered pedagogical approaches that prioritize active learning, problem-solving, and collaboration in the classroom; and 4) Furthermore, future researchers in the field of mathematics education are encouraged to conduct similar studies to contribute to ongoing research on improving mathematical skills and academic resilience among the students. This will provide a foundation for continued advancements in the field.

Keywords: Academic resilience; Mathematics education; Mindanao State University-Sulu; Philippines.

1.0 Introduction

Education is essential to the growth of individuals and society as a whole, and mathematics is a cornerstone of the academic domain. One important topic associated to this field of discipline is students' resiliency to mathematics. According to Wilder and Lee (2010), mathematics resilience refers to a student's attitude towards math that allows them to persist in their learning even when faced with setbacks and challenges. Kookan et al. (2015) further explained that researchers are now paying more attention to how students respond to difficult or challenging situations in their math studies.

This phenomenon is the same at Mindanao State University-Sulu where the students view achieving mathematical competency as both an academic challenge and a vital ability that supports cognitive growth and problem-solving

skills. Situated in the culturally diverse region of Mindanao, Mindanao State University-Sulu has unique opportunities and problems when it comes to helping its senior high school students develop mathematical resilience. The requirement to comprehend and improve academic resilience in mathematics becomes critical as educational environments change.

Mathematical resilience refers to the ability of learners to navigate and overcome negative emotions that may arise when they encounter difficulty in learning mathematics. Resilient learners understand that while mastering mathematics can be challenging, they can find the necessary support and experience positive emotions when they succeed. Teaching for mathematical resilience equips learners with the skills to effectively use mathematics and acquire new knowledge, empowering them in their daily lives and careers. It is possible for learners of all ages to develop the resilience needed to approach mathematics with confidence, without developing negative attitudes (Lee & Wilder, 2017). In a similar vein, Hernandez-Martinez and Williams (2013) as cited by Ishak et al. (2020) emphasized that resilience in mathematics involves students' adaptability in making decisions when faced with unfamiliar situations.

This study provided insight into the extent of academic resilience in mathematics among the students in the special environment of Mindanao State University-Sulu. Through an analysis of resilience-promoting variables like growth, struggle, and value, this research offered insights that can guide educational practices and policies. In addition, this research deepened the understanding of academic resilience in mathematics and offer useful recommendations for educators, administrators, and policymakers to foster a resilient and proficient generation of math learners by situating the discussion within the framework of the said high school.

2.0 Methodology

2.1 Research Design

A descriptive-correlational methodology was used in this study, which aimed to investigate the various facets of academic resilience. The research explored three characteristics: growth, struggle, and value. These factors work together to support students' perseverance and success in the difficult field of mathematics. According to McCurney and White (2009), as cited by IvyPanda (2023), descriptive correlational design is used in research studies to determine the relationship between different variables and provide static depictions of settings.

2.2 Research Respondents

A group of 120 students from the Mindanao State University-Sulu Senior High School population of 1,955 participated as respondents in this study. These students were officially enrolled during the academic year 2023-2024. The respondents were selected using non-proportionate stratified random sampling. Stratified random sampling involves selecting a group of items from the population based on classification and random selection. Table 1 displays the breakdown of respondents based on their grade level and section.

Table 1. Distribution of the respondents according to grade and section

Grade and Section	Number of Respondents	Population Size	Percentage
STEM 11	30	500	6.0%
GAS 11	30	577	5.20%
STEM 12	30	356	8.43%
GAS 12	30	522	5.75%
Total	120	1955	6.14%

2.3 Research Instrument

A standardized questionnaire titled "Academic Resilience in Mathematics among Senior High School Students in Mindanao State University-Sulu" was used to gather the desired information from the respondents. This questionnaire was adopted and modified from a study by Kookan et al. (2015) titled "Development and Validation of the Mathematical Resilience Scale." The questionnaire is divided into two parts: Part 1 contains the personal data of the respondents, while Part 2 consists of three subcategories of academic resilience in mathematics: value, growth, and struggle. Respondents answered the questionnaire using a 5-point Likert scale with response options such as Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD). To validate the research instrument, the researcher sent the questionnaire to prospective validators. However, since the

questionnaire was adapted, the researcher did not conduct a separate reliability test. The Cronbach alpha value of .90 confirms the questionnaire's reliability.

2.4 Data Gathering Procedure

The questionnaire was personally administered by the researcher during the first week of February 2024, with retrieval of the questionnaires also taking place during the same week.

2.5 Data Analysis

The responses from the questionnaires were analyzed using descriptive statistics such as frequency, percentage, weighted arithmetic mean, and standard deviation. Inferential statistics such as t-test for independent samples, one-way analysis of variance (ANOVA), and Pearson Product Moment Correlation were also used.

- The demographic profile of the respondents, including gender, age, grade level, parents' monthly income, and parents' educational attainment, was analyzed using frequency and percentage.
- The extent of academic resilience in Mathematics among senior high school students at MSU-Sulu was analyzed using weighted arithmetic mean and standard deviation, focusing on aspects such as value, struggle, and growth.
- To determine if there were significant differences in the extent of academic resilience in Mathematics among senior high school students at MSU-Sulu based on their demographic profile, including gender, age, grade level, parents' monthly income, and parents' educational attainment, t-test for independent samples and one-way analysis of variance were utilized.
- The significant correlation among the subcategories of academic resilience in Mathematics, specifically value, struggle, and growth, was analyzed using Pearson Product Moment Correlation.

3.0 Results and Discussion

3.1 Demographic Profile of the Respondents

Table 1 displays the demographic profile of the student-respondents at Mindanao State University-Sulu Senior High School, specifically in terms of gender. The table shows that out of the 120 student-respondents, 43 (35.8%) are males, while 77 (64.2%) are females. This data indicates that most of the student-respondents, more than half of them, are females. Therefore, it can be concluded that the student-respondents are predominantly female.

Table 1. Student-respondents' demographic profile in terms of gender

Gender	Number of Respondents	Percent
Male	43	35.8%
Female	77	64.2%
Total	120	100%

Table 2 displays the demographic profile of the student-respondents at Mindanao State University-Sulu Senior High School, specifically their age distribution. From the table, it is evident that out of the 120 student-respondents, 29 (24.2%) are aged 16 and below, 58 (48.3%) are aged 17-18, 21 (17.5%) are aged 19-20, and 12 (10.0%) are aged 21 and above. The findings of this study highlight that almost half of the student-respondents fall within the 17-18 age range. Consequently, it can be inferred that most participants in this study belong to the middle age group category.

Table 2. Student-respondents' demographic profile in terms of age

Age	Number of Respondents	Percent
16 years old and below	29	24.2%
17-18 years old	58	48.3%
19-20 years old	21	17.5%
21 years old and above	12	10.0%
Total	120	100%

Table 3 displays the demographic profile of the student-respondents at Mindanao State University-Sulu Senior High School based on their grade level. The table shows that out of the total 120 student-respondents, 60 (50.0%) are in grade 11, while the other 60 (50.0%) are in grade 12. Therefore, this study indicates an equal distribution of student-respondents across both grade levels.

Table 3. Student-respondents' demographic profile in terms of grade level

Grade Level	Number of Respondents	Percent
Grade 11	60	50.0%
Grade 12	60	50.0%
Total	120	100%

Table 4 displays the demographic profile of student-respondents at Mindanao State University-Sulu Senior High School, focusing on their parents' monthly income. The table reveals that out of 120 student-respondents, 12 (10.0%) have parents with a monthly income below 5,000 pesos, 24 (20.0%) have parents with a monthly income between 5,001 and 10,000 pesos, 29 (24.2%) have parents with a monthly income between 10,001 and 20,000 pesos, 44 (36.7%) have parents with a monthly income between 20,001 and 30,000 pesos, and 11 (9.2%) have parents with a monthly income above 30,001 pesos. This data demonstrates that more than one-third of the student-respondents have parents whose average monthly income falls within the 20,001 to 30,000 pesos range. Therefore, the majority of the student-respondents can be classified as belonging to the middle-income bracket, as defined in this study.

Table 4. Student-respondents' demographic profile in terms of parents' monthly income

Section	Number of Respondents	Percent
P5,000.00 and below	12	10.0%
P5,001.00-P10000.00	24	20.0%
P10,001.00-P20,000.00	29	24.2%
P20,001.00-P30,000.00	44	36.7%
P30,001.00 and above	11	9.2%
Total	120	100%

Table 5 displays the demographic profile of student-respondents at Mindanao State University-Sulu Senior High School in terms of their parents' educational attainment. The table indicates that out of the 120 student-respondents, 13 (10.8%) have parents who completed elementary school, 22 (18.3%) have parents who finished secondary school, 68 (56.7%) have parents who are college graduates, and 17 (14.2%) have parents who are post-college graduates. This study reveals that more than half of the student-respondents' parents are college graduates. This suggests that a significant proportion of the parents have achieved a higher level of education, with the majority being college graduates.

Table 5. Student-respondents' demographic profile in terms of parents' educational attainment

Section	Number of Respondents	Percent
Elementary Graduate	13	10.8%
Secondary Graduate	22	18.3%
College Graduate	68	56.7%
Post-College Graduate	17	14.2%
Total	120	100%

3.2 Level of Academic Resilience in Mathematics

Table 6. Extent of academic resilience in Mathematics among the students in terms of value

Statements	Mean	SD	Rating
1. Math is essential for my future.	4.71	.454	Strongly Agree
2. Math will be useful to me in my life's work.	4.69	.464	Strongly Agree
3. Math courses are very helpful no matter what I decide to study.	4.67	.473	Strongly Agree
4. Knowing math contributes greatly to achieving my goals.	4.68	.470	Strongly Agree
5. Having a solid knowledge of math helps me understand more complex topics in my field of study.	4.61	.490	Strongly Agree
6. People who are good at math have more opportunities than those who are not good at math.	4.40	.834	Agree
7. Thinking mathematically can help me with things that matter to me.	4.62	.486	Strongly Agree
8. It would be easy to succeed in life with math.	4.61	.490	Strongly Agree
9. Math develops good thinking skills that are necessary to succeed in any career.	4.69	.464	Strongly Agree
10. Math can become my asset.	4.71	.456	Strongly Agree
Total	4.64	.5081	Strongly Agree

Note: 4.50-5.00 = Strongly Agree (SA), 3.50-4.49 = Agree (A), 2.50-3.49 = Undecided (U), 1.50-2.49 = Disagree (D), 1.00-1.49 = Strongly Disagree (SD)

Table 6 presents the level of academic resilience in Mathematics among senior high school students in MSU-Sulu SHS, as measured by their perceived value. The category obtained a total weighted mean score of 4.64, with a standard deviation of .5081, indicating a "Strongly Agree" rating from the student respondents. These findings

suggest that senior high school students at MSU-Sulu SHS perceive themselves as having a high level of academic resilience in mathematics in terms of value.

Specifically, the student respondents strongly agreed with statements such as "Math is essential for my future", "Math will be useful to me in my life's work", "Knowing math contributes greatly to achieving my goals", "Having a solid knowledge of math helps me understand more complex topics in my field of study", "Math develops good thinking skills that are necessary to succeed in any career", and "Math can become my asset".

These results align with the study conducted by Lim and Lopez (2023), which emphasized that resilient students in the context of Mathematics view mistakes and difficulties as opportunities for growth. These students also demonstrate a strong work ethic, maintain a positive attitude towards the subject, and believe in their ability to succeed. Lim and Lopez (2023) further noted that such a mindset fosters self-efficacy, which is essential for overcoming challenges and persevering in the face of frustration.

Table 7. Extent of academic resilience in Mathematics among the students in terms of struggle

Statements	Mean	SD	Rating
1. Everyone does not struggle with math at some point.	1.83	.857	Disagree
2. Good mathematicians experience difficulties when solving problems.	2.51	1.290	Undecided
3. Successful people who work in math-related fields struggle when working on hard math problems.	3.38	1.310	Undecided
4. Everyone doesn't make mistakes at times when doing math.	2.03	1.177	Disagree
5. Struggle is normal part of working on math.	4.23	.855	Agree
6. People in my peer group don't struggle sometimes with math.	1.78	1.006	Disagree
7. People who are good at math may pass a hard math test.	4.38	.662	Agree
8. Math teachers don't have difficulties when answering a math question.	4.35	.763	Agree
9. Math questions don't confuse me.	1.99	1.017	Disagree
10. I sometimes get encouraged by difficulties in mathematics	4.33	.702	Agree
Total	3.08	.9639	Undecided

Table 7 presents the findings on the level of academic resilience in mathematics among senior high school students at MSU-Sulu, specifically focusing on their perception of struggle. The category of struggle obtained an average weighted mean score of 3.08, with a standard deviation of .9639, which is rated as "Undecided" by the student-respondents. This rating suggests that the students in this study perceive struggle as not significantly influencing their academic resilience in mathematics.

It is worth noting that the student-respondents rated certain items as "Undecided," such as "Good mathematicians experience difficulties when solving problems" and "Successful people who work in math-related fields struggle when working on hard math problems." These findings contradict the conclusions reached by Ashcraft and Moore (2009), who stated that the fear of failure and the perception of mathematics as a challenging and intimidating subject can lead students to avoid it and hesitate to seek assistance. This negative cycle can result in underperformance, further reinforcing their anxieties and undermining their resilience.

Table 8. Extent of academic resilience in Mathematics among the students in terms of growth

Statements	Mean	SD	Rating
1. Everyone can get better at math if they try.	4.67	.473	Strongly Agree
2. Math can be learned by anyone.	4.64	.499	Strongly Agree
3. If someone is not a math person, they will still be able to learn math.	4.65	.479	Strongly Agree
4. If someone is not good at math, there is something that can be done to change that.	4.58	.544	Strongly Agree
5. People are either good at math or they aren't.	4.50	.820	Strongly Agree
6. I believe a person's math ability is determined at birth.	2.18	1.058	Disagree
7. Some people can always learn math.	4.63	.609	Strongly Agree
8. People who are good in math may really grow personally.	4.48	.799	Agree
9. A person can become good in math through constant practice.	4.66	.494	Strongly Agree
10. Someone will develop in math if he or she can be tutored well.	4.63	.623	Strongly Agree
Total	4.36	.6398	Agree

Table 8 displays the level of academic resilience in mathematics among senior high school students at MSU-Sulu in terms of growth. This category has an overall weighted mean score of 4.36, with a standard deviation of 0.6398.

According to the student respondents, this rating falls under the category of "Agree." These findings suggest that most students participating in this study feel confident in their ability to adapt, learn, and enhance their mathematical skills over time.

It is worth noting that the student respondents rated the statement "People who are good in math may really grow personally" as "Agree," among other statements. Additionally, resilient students are more inclined to develop a growth mindset, which entails the belief that intelligence and abilities can be developed through effort and perseverance (Dweck, 2006).

3.3 Difference in the Extent of Academic Resilience

Table 9. Difference in the extent of academic resilience in mathematics the students in terms of gender

Variables	Grouping	Mean	SD	Mean Difference	t	Sig.	Description
Value	Male	.31514	.04806	-.02813	-.499	.619	Not Significant
	Female	.25819	.02942				
Struggle	Male	.36274	.05532	-.23703*	-3.44	.001	Significant
	Female	.36229	.04129				
Growth	Male	.30769	.04692	.07683	1.296	.198	Not Significant
	Female	.31349	.03573				

Note: *Significant at alpha 0.05

Table 9 shows the differences in academic resilience in mathematics among senior high school students at MSU-Sulu, based on gender. The table reveals that the t-values and probability values for the value and growth aspects are not significant at a significance level of .05. This means that there is no difference in the perceptions of male and female senior high school students from MSU-Sulu regarding the subcategories of academic resilience. Therefore, it can be concluded that both male and female students perceive the extent of academic resilience in mathematics similarly, without one gender being better at it than the other. However, there is a significant difference in the extent of struggle aspect, indicating that female students perceive struggle differently compared to male students, as supported by the significant statistical difference.

Hence, it can be concluded that, in general, gender does not significantly influence how senior high school students at MSU-Sulu perceive the extent of academic resilience in mathematics. Therefore, the hypothesis stating, "There is no significant difference in the extent of academic resilience in mathematics among senior high school students at MSU-Sulu when classified by their demographic profile in terms of gender," is accepted.

In a meta-analysis conducted by Watt and Credé (2015) on academic resilience, it was determined that gender does not have a significant overall effect on resilience scores. This finding is consistent with the observation that there is no significant difference between genders in terms of value and growth aspects.

Table 10. Difference in the extent of academic resilience in mathematics the students in terms of age

Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Description
Value	Between Groups	.514	3	.171	2.271	.084
	Within Groups	8.746	116	.075		
	Total	9.259	119			
Struggle	Between Groups	1.039	3	.346	2.508	.062
	Within Groups	16.013	116	.138		
	Total	17.052	119			
Growth	Between Groups	1.655	3	.552	6.428	.000
	Within Groups	9.953	116	.086		
	Total	11.608	119			

Table 10 displays the differences in academic resilience in mathematics among senior high school students at MSU-Sulu, categorized by age. The table reveals that the F-values and probability values for the value and struggle aspects are not significant at alpha .05. This indicates that, despite variations in age, students generally have similar perceptions towards the subcategories of academic resilience in mathematics. Therefore, it can be concluded that students aged 16 and below, 17-18 years old, 19-20 years old, and 21 years and above perceive academic resilience in mathematics to the same extent, with no age group being more perceptive than the others. However, when it

comes to the growth aspect, a significant difference is observed. This suggests that students aged 16 and below perceives growth differently compared to those aged 19-20 and 21 years and below, as supported by the significant statistical difference.

Hence, it can be concluded that, in general, age does not significantly influence how senior high school students at MSU-Sulu perceive the extent of academic resilience in mathematics. Therefore, the hypothesis stating, "There is no significant difference in the extent of academic resilience in mathematics among senior high school students at MSU-Sulu when classified by their demographic profile in terms of age," is accepted. These results support the findings of Lee and Wilder (2017), who concluded that learners of any age can develop the resilience they need to approach mathematics safely. All learners can learn mathematics in ways that do not cause them to develop negative traits.

Table 11. Difference in the extent of academic resilience in mathematics the students in terms of grade level

Variables	Grouping	Mean	SD	Mean Difference	t	Sig.	Description
Value	Grade 11	4.5700	.30214	-.13796*	-2.785	.006	Significant
	Grade 12	4.7080	.23658				
Struggle	Grade 11	3.0067	.40037	-.14667*	-2.154	.033	Significant
	Grade 12	3.1533	.34320				
Growth	Grade 11	4.2483	.33623	-.22333*	-4.179	.000	Significant
	Grade 12	4.4717	.24153				

Table 11 displays the differences in academic resilience in mathematics among senior high school students at MSU-Sulu, categorized by grade level. The table reveals that the t-values and probability values for all aspects are significant at an alpha level of .05. This suggests that there is a difference in the perceptions of grade 11 and grade 12 senior high school students from MSU-Sulu regarding the subcategories of academic resilience. As a result, it can be inferred that grade 11 students perceive academic resilience in mathematics differently compared to grade 12 students, as supported by the significant statistical difference.

Hence, it can be concluded that, grade level significantly influences how senior high school students at MSU-Sulu perceive the extent of academic resilience in mathematics. Therefore, the hypothesis stating, "There is no significant difference in the extent of academic resilience in mathematics among senior high school students at MSU-Sulu when classified by their demographic profile in terms of grade level," is rejected. This finding is based on a study conducted by Xu et al. (2020) that investigated the development of math anxiety in high school students over time. Although the study did not specifically concentrate on resilience, it implies that students' attitudes towards math may shift during high school, potentially affecting their perception of resilience.

Table 12. Difference in the extent of academic resilience in mathematics the students in terms of parents' monthly income

Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Description
Value	Between Groups	.015	.004	.046	.996	Not Significant
	Within Groups	9.244	.080			
	Total	9.259	119			
Struggle	Between Groups	.192	.048	.327	.859	Not Significant
	Within Groups	16.860	.147			
	Total	17.052	119			
Growth	Between Groups	.755	.189	2.000	.099	Not Significant
	Within Groups	10.853	.094			
	Total	11.608	119			

Table 12 presents the differences in the extent of academic resilience in mathematics among senior high school students at MSU-Sulu, classified according to parents' monthly income. As shown in this table, all the F-values and probability values of subcategories subsumed are not significant at alpha .05. This means that though student-respondents vary in their parents' monthly income, generally they do not differ in perception towards the subcategories subsumed under the extent of academic resilience in mathematics. Consequently, this suggests that student-respondents with parents earning 5,000 pesos and below, 5,001-10,000 pesos, 10,001-20,000 pesos, 20,001-30,000 pesos, and 30,001 pesos and above perceive the extent of academic resilience in mathematics similarly, with no parental monthly income group being a 'better perceiver' than another.

Hence, it can be concluded that parents' monthly income does not significantly influence how senior high school students at MSU-Sulu perceive the extent of academic resilience in mathematics. Therefore, the hypothesis stating, "There is no significant difference in the extent of academic resilience in mathematics among senior high school students at MSU-Sulu when classified by their demographic profile in terms of parents' monthly income," is accepted.

This finding contradicts the study conducted by Condliffe and Davies (2007), which concluded that while there may be a link between socioeconomic status and academic achievement, it does not necessarily lead to perceptions of resilience. In fact, students from lower-income families may in fact develop strong resilience through overcoming various challenges.

Table 13. Difference in the extent of academic resilience in mathematics the students in terms of parents' educational attainment

Sources of Variation		Sum of Squares	df	Mean Square	F	Sig.	Description
Value	Between Groups	.090	3	.030			
	Within Groups	9.169	116	.079	.379	.768	Not Significant
	Total	9.259	119				
Struggle	Between Groups	.023	3	.008			
	Within Groups	17.029	116	.147	.053	.984	Not Significant
	Total	17.052	119				
Growth	Between Groups	.597	3	.199			
	Within Groups	11.011	116	.095	2.098	.104	Not Significant
	Total	11.608	119				

Table 13 presents the differences in the extent of academic resilience in mathematics among senior high school students at MSU-Sulu, classified according to parents' educational attainment. As shown in this table, all the F-values and probability values of subcategories subsumed are not significant at alpha .05. This means that though student-respondents vary in their parents' educational attainment, generally they do not differ in perception towards the subcategories subsumed under the extent of academic resilience in mathematics. Consequently, this indicates that student-respondents, regardless of whether their parents are elementary graduates, secondary graduates, college graduates, or post-college graduates, perceive the extent of academic resilience in mathematics in a similar manner, with no parental educational attainment group being a 'better perceiver' than another.

Hence, it can be concluded that parents' educational attainment does not significantly influence how senior high school students at MSU-Sulu perceive the extent of academic resilience in mathematics. Therefore, the hypothesis stating, "There is no significant difference in the extent of academic resilience in mathematics among senior high school students at MSU-Sulu when classified by their demographic profile in terms of parents' educational attainment," is accepted. Parents with higher levels of education often have higher academic expectations for their children. As a result, this can influence the motivation and resilience of the students (Van der Velden & Van de Werfhorst, 2013).

3.4 Correlation among the Subcategories Subsume Under the Academic Resilience in Mathematics

Table 14. Correlation among the subcategories subsume under the academic resilience in mathematics

Variables		Pearson r	Sig.	N	Description
Dependent	Independent				
Value	Struggle	.091	.324	120	Nearly Perfect
	Growth	.206*	.024	120	Low
Struggle	Growth	-.022	.808	120	Low

Note: *Correlation coefficient is significant at alpha .05

Table 14. shows the correlation among the subcategories subsume under the academic resilience in mathematics. As shown in the table, the computed Pearson correlation Coefficients (Pearson r) between these variables, except between value and growth, are not significant at alpha .05. Furthermore, the correlational degree among the categories under the academic resilience in mathematics is as follows:

- Value and Struggle: The Pearson correlation coefficient of .091 indicates a very weak positive relationship between these variables. However, the significance (Sig.) value of .324 is greater than the alpha level of .05,

suggesting that this correlation is not statistically significant. In relation to this finding, Casinillo et al. (2020) found a positive correlation, suggesting that students who are resilient can maintain motivation even when faced with challenges. This emphasizes the significance of building resilience to decrease anxiety and promote perseverance in mathematics.

- b) Value and Growth: The Pearson correlation coefficient of .206 indicates a weak positive relationship, and the Sig. value of .024 is less than the alpha level of .05, indicating that this correlation is statistically significant. The description 'Low' might suggest that the strength of the relationship is considered low despite being significant. Duckworth and Yeager (2015) conducted a study on the concept of a growth mindset, which highlights the belief that abilities can be improved through effort. While they did not provide an exact correlation coefficient, their research suggests a positive connection between valuing learning and maintaining growth-oriented beliefs in relation to academic achievement.
- c) Struggle and Growth: The Pearson correlation coefficient of -.022 indicates a very weak negative relationship between these variables. The Sig. value of .808 is much greater than the alpha level of .05, which means this correlation is not statistically significant. This result supports the research conducted by Dowker and Sarkar (2016) on the relationship between self-efficacy beliefs (confidence in one's abilities) and mathematics achievement. While their main focus was not on "struggle," it indicates that facing challenges in math may not directly impact a student's growth mindset, potentially leading to a lack of significant correlation.

4.0 Conclusion

This study concludes that:

- a. The reliability and validity of the research findings may be impacted by the skewed distributions of the ages, genders, parents' monthly incomes, and parents' educational attainments of the student respondents.
- b. In general, the student respondents demonstrate a positive attitude toward academic resilience in mathematics. This indicates that they have a strong belief in their ability to overcome challenges and persist in their mathematical studies. However, their attitude toward struggle is uncertain, suggesting that there may be areas where students feel less confident or encounter more significant challenges in their mathematical learning.
- c. The genders, ages, parents' monthly incomes, and educational attainments of the student respondents do not have a significant influence on academic resilience. However, grade level plays a crucial role. This implies that students' resilience in mathematics may develop as they progress from grade 11 to grade 12, emphasizing the importance of interventions tailored to specific grade levels.
- d. There is a weak, yet significant, correlation between the subcategories of academic resilience known as 'Value' and 'Growth.' This is in contrast to the non-significant correlations observed elsewhere. This suggests that while students may not strongly perceive the connection between their struggles and growth, or value the struggle itself, they do recognize the importance of growth and its value in their academic journey in mathematics.
- e. This study examined the concept of academic resilience in mathematics among senior high school students at MSU-Sulu. It was observed that students generally possess a positive attitude. Moreover, it is found that resilience tends to develop during high school years, and socioeconomic factors may not play as significant a role as previously believed. Notably, there was a weak connection between valuing mathematics and being willing to embrace challenges, indicating a necessity for interventions that assist students in perceiving difficulties as chances for personal growth.

This study recommends the following:

- a. The University administrator should incorporate objectives and strategies to enhance academic resilience in mathematics into Michigan State University's strategic planning initiatives and policies. This will ensure that efforts to foster resilience are in line with the university's vision and mission and receive institutional support and recognition.
- b. Faculty members at MSU-Sulu should actively promote the adoption of adaptable instructional approaches that cater to the diverse learning styles and levels of mathematical proficiency among students. Offering various learning paths, such as flipped classrooms, active learning strategies, and differentiated instruction, can help students develop resilience by allowing them to engage with course materials in ways that suit their individual needs.

- c. Faculty members of MSU-Sulu should consider implementing student-centered pedagogical approaches that prioritize active learning, problem-solving, and collaboration in the mathematics classroom. They should encourage faculty members to develop courses and assignments that stimulate critical thinking, application of mathematical concepts in real-world scenarios, and perseverance in the face of challenges.
- d. Moreover, it is highly recommended that future researchers in the field of mathematics education undertake studies comparable to this one. This will contribute to the continuous research on enhancing mathematical skills and academic resilience among college students in Sulu, and establish a basis for further progress in the field.

5.0 Contributions of Authors

All contributions to each part of this work were made by the sole author himself. He reviewed and approved the final version of this work.

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7.0 Conflict of Interests

The authors declare no conflicts of interest about the publication of this paper.

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9.0 References

- Ashcraft, M., and Moore, J. (2009). Mathematics anxiety and its cognitive consequences: A review. *Learning and Individual Differences*, 19(4), 355-375.
- Baluyos, G., Cabaluna, P., and Paragat, J. (2023). Students' Preference in Online Learning Environment and Academic Resilience in Relation to Their Academic Performance in Mathematics. *EduLine: Journal of Education and Learning Innovation*, 3(3), 460-470. <https://doi.org/10.35877/454RIeduline2038>
- Boaler, J. (2016). *Mathematical mindsets: Unleashing the power of beliefs, brains, and learning*. John Wiley & Sons.
- Casinillo, J. P. C., and Villena, M. C. R. (2020). Revisiting mathematical resilience and anxiety among senior high students. *International Journal of Indonesian Education and Teaching*, 5(2), 343-352.
- Casinillo, L. F., Casinillo, E. L., Lagumbay, C. T., Abad, H. R. F., and Dagongdong, M. L. (2022). Revisiting mathematical resilience and anxiety among senior high students. *International Journal of Indonesian Education and Teaching*, 6(2), 193-203. <https://doi.org/10.24071/ijiet.v6i2.4661>
- Casinillo, L., Abapo, A. L., Abela, J. J., and Martinez, S. J. (2023). Characterizing the challenges as correlates of senior high students' profile in the new normal setting. *Asian Journal of Assessment in Teaching and Learning*, 13(1), 24-33. <https://doi.org/10.37134/ajatel.vol13.1.3.2023>
- Cherry, K. (2022). What Is Self-Determination Theory? <https://www.verywellmind.com/what-is-self-determination-theory-2795387>
- Condliffe, R., and Davies, J. (2007). Resilience and educational achievement: A review of the literature. *Children and Society*, 21(4), 321-330.
- Dowker, A., and Sarkar, A. (2016). Mathematics anxiety and mathematics achievement: The role of self-efficacy beliefs. *Journal of Educational Psychology*, 108(2), 181-195.
- Duckworth, A. L., and Yeager, D. (2015). Mindsets and student success: Grit, growth mindset, and the three Cs. *Educational Psychologist*, 50(1), 31-48. <https://files.eric.ed.gov/fulltext/EJ1051129.pdf>
- Dweck, C. S. (2006). *Mindset: The new psychology of success*. Random House Publishing Group.
- Frost, J. (n.d.). Stratified Sampling: Definition, Advantages & Examples. statisticsbyjim.com
- Hayes, A. (2023). How Stratified Random Sampling Works, With Examples. Investopedia. https://www.investopedia.com/terms/s/stratified_random_sampling.asp#:~:text=Proportional%20stratified%20random%20sampling%20involves,their%20occurrence%20in%20the%20population
- Ilyasu, R., and Etikan, I. (2021). Comparison of quota sampling and stratified random sampling. *Biom. Biostat. Int. J. Rev.*, 10(1), 24-27. <https://doi.org/10.15406/bbij.2021.10.00326>
- IvyPanda. (n.d.). Descriptive statistics and correlational design. <https://ivypanda.com/essays/data-presentation-descriptive-and-correlational-designs/>
- Johnston-Wilder, S., and Lee, C. (2010). Developing mathematical resilience.
- Kooker, J., Welsh, M. E., McCoach, D. B., Johnston-Wilder, S., and Lee, C. (2016). Development and validation of the mathematical resilience scale. *Measurement and Evaluation in Counseling and Development*, 49(3), 217-242. <https://doi.org/10.1177/0748175615596782>
- Krzenski, A. (2020). Influencing academic resilience and self-regulation in students: An intervention in mathematics.
- Ledesma, J. G., and Linaugo, J. D. (2023). Mathematics anxiety, resiliency, and chemistry performance of grade 9 students. *Technium Soc. Sci. J.*, 42, 49. <https://doi.org/10.47577/tssj.v42i1.8712>

- Lee, C., and Johnston-Wilder, S. (2017). The construct of mathematical resilience. In *Understanding emotions in mathematical thinking and learning* (pp. 269-291). Academic Press. <https://doi.org/10.1016/b978-0-12-802218-4.00010-8>
- Lim, C. C., and Lopez, M. S. C. (2023). Self-efficacy and academic resilience among grade 12 students in a private school: A correlational study. *Philippine Journal of Psychology*, 26(1), 1-12. <https://doi.org/10.5281/zenodo.8185748>
- Mallick, S., and Kaur, N. (2016). Academic resilience among senior secondary school students: Influence of learning environment. *International Journal of Educational Development Using Information and Communication Technology*, 11(2), 181-192. <https://doi.org/10.21659/rupekatha.v8n2.03>
- Neshila, K. F. (2018). Academic resilience in Mathematics amongst at-risk Grade 10 learners in Namibia: A phenomenology study (Doctoral dissertation, University of Namibia)
- Pintrich, P. R. (2000). The role of metacognitive knowledge in learning, teaching, and assessment. *American Psychologist*, 55(9), 1119-1129. https://doi.org/10.1207/s15430421tip4104_3
- Radhamani, K., and Kalaivani, D. (2021). Academic resilience among students: A review of literature. *International Journal of Research and Review*, 8(6), 360-369. <https://doi.org/10.52403/ijrr.20210646>
- Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of clinical psychology*, 58(3), 307-321. <https://doi.org/10.1002/jclp.10020>
- Secadron Jr, A. C., and Tan, D. A. (2023). Enhancing Students' Mathematical Resilience and Critical Thinking Skills Using e-Modules via Process-Oriented-Guided-Inquiry-Learning Approach. *American Journal of Educational Research*, 11(5), 287-296. <https://doi.org/10.12691/education-11-5-6>
- Siegel, D. (2013). *Brainstorm: The power and purpose of the teenage brain*. Penguin Books.
- Van der Velden, W., and Van de Werfhorst, H. (2013). Parental educational expectations and offspring's educational attainment: A review of the evidence. *Educational Research Review*, 8(1-2), 1-23. <https://doi.org/10.1016/j.edurev.2012.12.002>
- Vergara, C. R. (2021). Mathematics resilience and achievement goals: Exploring the role of non-cognitive factors to mathematics performance of university students amidst of Pandemic. *Open Access Library Journal*, 8(12), 1-10. <https://doi.org/10.4236/oalib.1108166>
- Watt, H. M. G., and Credé, M. (2015). Gender differences in academic resilience of secondary school students: A meta-analysis. *Journal of Educational Psychology*, 107(2), 428-441. <https://www.apa.org/workforce/publications/women.pdf>
- Xu, Y., Han, X., and Huang, J. (2020). Development of mathematics anxiety in high school: A latent growth curve analysis. *Journal of Educational Psychology*, 112(7), 1692-1704. <https://doi.org/10.1037/edu0000402>
- Zanthy, L. S., Kusuma, Y. S., and Soemarmo, U. (2019). Mathematical resilience analysis of senior high school students. *Journal of Physics: Conference Series*, 1315, 012015. <https://doi.org/10.1088/1742-6596/1315/1/012074>

Impact of African Swine Fever (ASF) Outbreak on the Socioeconomic Status of Backyard Raisers in Aurora Province

Valin Delfin-Bumatay*, Riosahlie Ylar Madrid
Aurora State College of Technology, Aurora, Philippines

*Corresponding Author email: valindelfin@gmail.com

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Abstract. Swine raising has global potential, contributing to many countries' development and industrial progress. However, the swine industry faces numerous challenges, and one significant issue affecting its progress is the prevalence of African Swine Fever (ASF). This study investigated the impact of African Swine Fever (ASF) on backyard raisers in Aurora Province. Using a descriptive research design, the study assessed ASF's influence on raisers' socio-economic characteristics, losses, and coping strategies. Conducted in Central Aurora, it involved 55 backyard raisers during the 2019 ASF outbreak, ensuring demographic diversity through total enumeration. The research instrument, an interview guide, covers personal profiles, ASF-related losses, coping strategies, and pre/post-ASF swine-raising experiences. Results revealed that the ASF outbreak led to a significant decrease in input expenditures, while labor costs for technician incentives decreased, and spending on cleaning and disinfection declined. Some raisers resorted to loans with minimal interest, settling them after compensation receipt, while others arranged payments upon stock sales. During the ASF outbreak, caretakers, previously employed by some raisers, were no longer sustained, resulting in a drastic decline in sales. Overall, the study contributes essential insights for targeted strategies to enhance the well-being of backyard raisers in Aurora Province, emphasizing the need for sustainable disease management practices. Additionally, investing in research and development for ASF prevention strategies is advised for long-term sustainability without vaccines.

Keywords: African Swine Fever; ASF outbreak; Backyard raisers; Socioeconomic status; Aurora Province.

1.0 Introduction

Swine raising has global potential, contributing to many countries' development and industrial progress. Countries such as China, the United States, Brazil, and Germany have established thriving swine industries that play a vital role in their economies (FAO, 2019). However, the swine industry faces numerous challenges, and one significant issue affecting its progress is the prevalence of African Swine Fever (ASF) (Patrick et al., 2020), a highly contagious viral disease that affects pigs (Beltran et al., 2019).

ASF has become a major threat to the swine industry globally, causing significant economic losses and impacting the socio-economic status of swine farmers (FAO, 2020). In the Philippines, the swine industry is particularly important in regions and provinces such as Aurora, which is known for its significant engagement in swine production, particularly among backyard raisers. Backyard raisers, who make up a significant percentage of the swine industry in the country (PSA, 2023), are particularly vulnerable to the disease due to limited resources and a lack of knowledge about biosecurity measures (Cooper et al., 2022).

In July 2019, the Philippines reported its first cases of African Swine Fever (ASF) in Rizal province (OIE, 2020), triggering its spread to provinces like Bulacan, Pampanga, Nueva Ecija, and Cavite. The ASF outbreak led to the culling of 300,000 pigs, causing a 20.8% decline in pork production in 2021 (PSA, 2022). This, coupled with elevated

pork prices, adversely affected vulnerable consumers (Cooper et al., 2022). The government responded with policies like the National Zoning and Movement Plan. Inspired by the success of the National Foot and Mouth Disease Eradication Program, the 1-7-10 protocol was implemented, involving rapid culling, surveillance, and testing (Office of the Secretary, 2020).

The swine industry in the Philippines, including Aurora, has been severely impacted by ASF outbreaks, resulting in a decline in swine production and significant economic losses for farmers and other stakeholders. The first case of ASF in Aurora was noted in December 2019. The epidemiology of this virus kills 76 percent of the total swine population of 15,873 heads in the province, where backyard raisers are most affected. Thus, the livelihoods of the raisers, meat vendors, and processors, as well as the overall swine industry in the province, are significantly affected (PVO, 2020). The province of Aurora needs to address the impacts of ASF, particularly among backyard raisers, to mitigate the negative influences on their socio-economic status. Understanding the specific impacts of ASF on backyard raisers in Aurora is essential to developing targeted interventions and strategies to address the challenges they face in the context of ASF.

Despite the importance of this issue, there is a gap in the literature regarding the specific influences of ASF on the socio-economic status of backyard raisers in Aurora. Therefore, this study was conducted to investigate the impact of ASF on the socio-economic status of backyard raisers in Aurora, Philippines. The findings of this study can contribute to the existing body of knowledge and provide insights for policymakers, researchers, and stakeholders in developing effective strategies and interventions to address the challenges faced by backyard raisers in the context of ASF.

2.0 Methodology

2.1 Research Design

A descriptive design was employed to collect relevant data to gain a comprehensive understanding of the socio-economic influences of ASF outbreaks on backyard raisers. Semi-structured interviews were conducted using a carefully designed interview guide to gather information on economic losses, coping strategies, and other relevant variables. Open-ended questions encouraged the participants to express their experiences, challenges, and coping strategies in their own words, allowing for a rich and in-depth exploration of the coping mechanisms of backyard raisers during ASF outbreaks.

2.2 Research Participants

This study was conducted in the four municipalities of Central Aurora in the province which include Baler, Maria Aurora, San Luis, and Dipaculao. The respondents of this study were 55 backyard raisers from the specific barangays of the identified municipalities in the province of Aurora (Table 1). The respondents consist of individuals who were actively engaged in swine raising as a source of income and livelihood, raising at most 20 heads. They were the most affected raisers during the first outbreak of ASF in 2019.

Table 1. Distribution of respondents in Central Aurora

MUNICIPALITY	BARANGAY	NUMBER OF AFFECTED FARMERS
Baler	Buhangin	6
	Pingit	9
	Reserva	4
	Sabang	3
	Zabali	8
Dipaculao	Bayabas	4
	Ipil	1
	Mucdol	2
	Salay	3
Maria Aurora	Barangay 1	2
	Florida	1
	Ramada	3
	San Jose	5
San Luis	Barangay 4	3
	Nonong	1
TOTAL		55

Source: Municipal Agriculture Office

To obtain a representative sample from the population, total enumeration was employed. The sample aimed to include a diverse range of backyard raisers in terms of their demographic characteristics, such as sex, educational attainment, household size, occupation, and monthly income level. This ensures that the findings of the study can be generalized to the broader population of backyard raisers in the municipalities and barangays.

2.3 Research Instrument

The research instrument utilized was a self-made interview guide designed to gather data on the influence of ASF on the socio-economic status of backyard raisers in specific municipalities and barangays. The questionnaire consists of multiple-choice and open-ended questions that cover various aspects related to the participants' profiles, losses incurred due to ASF, coping strategies employed, and their experiences in swine raising before and during the ASF infestation. To ensure the accuracy and reliability of the data collected, pre-testing was conducted on ten (10) individuals to maintain consistency in administering the survey instrument.

2.4 Data Gathering Procedure

Initially, a comprehensive list of backyard raisers who were affected by the initial ASF outbreak in 2019 was obtained from the Municipal Agricultural Office (MAO) in Baler, Maria Aurora, San Luis, and Dipaculao. Before the commencement of data collection, formal permissions were diligently sought from the Provincial Veterinary Office (PVO) and subsequently extended to the MAOs of the four aforementioned municipalities. Additionally, a courteous outreach was made to the local barangay officials, where a research permit was presented, and their indispensable assistance was enlisted in identifying and reaching out to the prospective interview participants. During the actual interviews, utmost care was taken to ensure the informed consent of each participant, with a comprehensive consent form provided to clarify the research's objectives and safeguard the rights of those involved. The interview questions were thoughtfully translated into the participants' preferred dialect, Tagalog or Ilocano, to facilitate clear communication and foster a conducive environment for data collection. The interviews were conducted face-to-face.

2.5 Data Analysis Procedure

The data collected from 55 participants were systematically organized, coded, and then entered into statistical software for analysis. This process involved structuring the data into manageable formats and assigning codes to different responses. The use of statistical software facilitated efficient and accurate analysis of data gathered from the participants, enabling the extraction of meaningful insights and conclusions from the study.

2.6 Ethical Considerations

Ethical considerations, such as obtaining informed consent from participants, ensuring confidentiality and anonymity, and adhering to ethical guidelines for research involving human subjects, were followed throughout the study.

3.0 Results and Discussion

3.1 Socioeconomic Characteristics of Backyard Swine Raisers

Table 2 shows the socioeconomic characteristics of the respondents, examining key variables including gender, highest educational attainment, household size, occupation, source of income, monthly income level, the number of heads raised before the outbreak, and the source of capital. These insights provide a subtle understanding of the diverse demographic and economic backgrounds of the backyard raisers central to this research.

Also, swine raisers are nearly evenly split between males and females, with 28 (51%) being male and 27 (49%) being female. It implies that both men and women play crucial roles in swine raising. This finding is supported by the outcomes of a separate study conducted by Bollido, Villaluz, & Orale (2022), where males were identified as the predominant swine raisers.

Additionally, the distribution of educational attainment among the respondents shows that most swine raisers, 15 (27%), have attained a college degree, while 11 (20%) have completed their elementary and secondary education. This finding is supported by the previous study by Perey (2017), which showed that highly educated individuals were more likely to raise swine in their backyards.

Table 2. Socioeconomic characteristics of the respondents

	FREQUENCY	PERCENTAGE
SEX		
Male	28	51
Female	27	49
EDUCATIONAL ATTAINMENT		
elementary undergraduate	3	6
elementary graduate	11	20
secondary undergraduate	8	15
secondary graduate	11	20
college undergraduate	6	11
college graduate	15	27
vocational course diploma	1	2
HOUSEHOLD SIZE		
1 - 3	17	31
4 - 6	33	60
7 - 9	4	7
10 and above	1	2
OCCUPATION		
vending	14	26
farming	16	29
servicing	11	20
government employee	8	15
private sector employee	5	9
none	1	2
SOURCE OF INCOME		
occupation	44	80
farming	22	40
animal raising	4	7
fishing	2	4
overseas Filipino workers	1	2
INCOME LEVEL		
P5000 and below	15	27
P5001 - P10000	21	38
P10001- P15000	7	13
P15001- P20000	7	13
P 20001- P25000	5	9
Above P 25000	15	27
SOURCE OF CAPITAL		
savings	34	62
loan	9	17
lending from relatives and friends	5	9
financial assistance from a government agency	1	2
dispersal from a private organization	3	5
dispersal from a government agency	3	5

Furthermore, the distribution of household sizes reveals that most backyard swine raisers, 60%, fall within the 4-6-member range. The statistical measures further reveal that the mean household size is 4 members, with a standard deviation of 2, indicating that the average household sizes within the study population vary from 4 to 6. This result implies that swine backyard raisers belong to medium-sized families as categorized in the study conducted by Rahman et al. (2014).

Examining the nature of occupations, backyard swine raisers were engaged in a variety of occupations such as farming, 14 (29%), vending, 26 (26%), servicing, 11 (20%), and government employment, 8 (15%). This is contrary to the result of the study by Ritchil et al. (2013) that found the majority were housewives. Occupation is the primary source of income for a substantial majority (44 or 80%). Farming also plays a significant role, with 22 (40%) of the raisers indicating it as a source of income, underscoring the importance of agriculture in the livelihoods of backyard raisers. Animal raising, with four (7%), fishing with two (4%), and one (2%) who relies on income from overseas Filipino work. The results imply that most farmers rely on their work for financial support. The study conducted by Aspile et al. (2016) corroborates this finding.

A significant portion of the backyard swine raisers fall within the P5001-10000 income bracket, representing 21 (38%), while 15 (27%) have monthly incomes both below P5000 and above P25000. Additionally, seven (13%) of

raisers reported incomes in both the P10001-15000 and P15001-20000 categories, showing an even distribution in this middle-income range. Meanwhile, 5 (9%) of the raisers earned between P20001-25000. Generally, the results signify that the swine growers have a marginal gross value not exceeding P180,000 per annum (Aquino, 2020). A significant majority of 34 (62%) rely on personal savings as their primary source of capital. Loans, with 9 (17%), were another notable source of capital; lending from relatives and friends got 5 (9%); private organizations with 3 (5%); and government dispersals with 3 (5%) as well. A smaller percentage of the raisers access financial assistance from government agencies, with 1 (2%). Aspile et al. (2016) cited that the initial capital of the small backyard raisers in their study was drawn from the swine raisers' savings.

3.2 Number of Heads Raised Before the Outbreak

Table 3. Number of heads raised by the respondents

HEADS CATEGORY	FREQUENCY	MEAN	SD
piglets	7	3	2
growers/fatteners	44	15	4
pregnant sow	3	6	5
lactating sow	6	4	3
dry sow	13	2	1

Table 3 displays that growers/fatteners account for the largest proportion raised by 44 farmers, with an average varying from 11 - 19 (mean = 15, sd = 4) heads. Dry sows were raised by 13 farmers, ranging from 1-4 (mean = 2, sd = 1) heads. Piglets were raised by 7 farmers on average, ranging from 1-5 (mean = 3, sd = 2) heads. Lactating sows were raised by 6 farmers, with an average range of 1-7 (mean = 4, sd = 3) heads, and pregnant sows were raised by 3 farmers, with an average range of 1-11 (mean = 6, sd = 5) heads. Out of the 55 respondents, it was observed that the frequency of responses during the interview totaled 73, indicating that some respondents raised multiple stages of swine concurrently. For example, individual farmers mentioned raising piglets, growers/fatteners, pregnant sows, lactating sows, and dry sows, similar to other farmers. However, some respondents exclusively raised either growers or fatteners. Overall, swine raisers maintained an average of 3-9 (mean = 6, sd = 3) heads. Hence, the results denote that growers/fatteners were the most raised hogs in Aurora. This can be accounted for as part and parcel of the total hog produced in Central Luzon, with 42.35 metric tons (PSA, 2023).

3.3 Economic Losses Incurred

This section presents the economic losses incurred by backyard swine raisers who have been significantly affected by the outbreak of ASF.

Amount of Input Incurred

Table 4. Amount of inputs incurred by the respondents

INPUTS		BEFORE ASF OUTBREAK	DURING ASF OUTBREAK
Stocks	mean	11,665	8,930
	standard deviation (SD)	10,581	6,197
	minimum	0	0
	maximum	50,000	35,000
	n	46	22
Feeds	mean	9,080	532
	standard deviation (SD)	6,199	631
	minimum	0	0
	maximum	30,000	3,000
	n	23	46
Medicines	mean	25,618	42
	standard deviation (SD)	23,373	306
	minimum	0	0
	maximum	100,000	2,000
	n	55	13
TOTAL	mean	46,363	9,864
	standard deviation (SD)	40,153	7,134

Table 4 compares the average amounts of inputs incurred by backyard raisers before and during the ASF outbreak. Before the outbreak, the average amount spent on stocks varied from P1,084 to P22,246 (mean = P11,665, SD = P10,581) as disclosed by 46 raisers. However, during the ASF outbreak, this expenditure decreased to an average varying from P2,733 to P15,127 (mean = P8,930, SD = P6,197) coming from the 22 raisers, suggesting that raisers reduced their investments in stocks during the outbreak due to increased uncertainty and risks.

A similar trend is observed for feeds, with an average expenditure ranging from P2,881 to P15,279 (mean = P9,080, SD = P6,199) as mentioned by 23 raisers and a decrease to an average ranging from zero to P1,163 (mean = P532, SD = P631) during the outbreak based from the responses of 46 raisers. This significant drop in feed expenditures reflects the economic influence of ASF on the backyard raisers' ability to maintain their usual level of input. In line with this, Nguyen et al. (2021) found that the feed industry experienced a 30-50% drop in sales following the ASF outbreak.

For medicines, the average expenditure varied from P2,245 to P48,991 (mean = P25,618, SD= P23,373) before the outbreak as declared by 55 respondents and decreased dramatically to an average ranging from P96 to P708 (mean = P402, SD = P306) during the outbreak as disclosed by 13 raisers. This reduction in spending on medicines could be a result of reduced pig populations due to ASF or a shift in focus from prevention to coping with the outbreak.

In total, the data shows a substantial decrease in the total amount spent on inputs during the ASF outbreak, from an average ranging from P6,210 to P86,516 (mean = 46,36, SD = 40,153) before the outbreak to an average varying from P2,730 to P16,998 (mean = 9,864, SD = 7,134) during the outbreak. This sharp decline in input expenditures is indicative of the financial strain and challenges faced by backyard raisers in managing their operations during the ASF-related disruptions (Wedzerai, 2022). The standard deviation on the order of a thousand pesos for expenses indicates a notable level of variability in the data. Some of the respondents declared zero expenses as they received stocks and feeds free from close relatives who happened to be their financiers.

Labor Cost

The labor costs incurred by backyard swine raisers before the outbreak revealed the average technician incentives amounted to P391 with a standard deviation of P261, based on the 26 raisers. However, during the ASF outbreak, these costs decreased to an average of P310 with a lower standard deviation of P143, based on 11 raisers. This reduction in labor costs for technician incentives could be attributed to several factors, including decreased pig populations due to ASF, changes in work required during the outbreak, or a general economic impact on labor wages. This finding is supported by the result of the study of Hsu, Montenegro, & Perez (2023).

Indirect Expenses

Table 5. Amount of indirect expenses incurred by the respondents

INPUTS		BEFORE ASF OUTBREAK	DURING ASF OUTBREAK
Disinfectants	mean	275	83
	standard deviation (SD)	676	50
	minimum	0	0
	maximum	5,000	300
	n	38	14
Cleaning	mean	141	83
	standard deviation (SD)	117	50
	minimum	0	0
	maximum	800	800
	n	16	14
Electricity	mean	101	356
	standard deviation (SD)	68	124
	minimum	0	0
	maximum	300	500
	n	35	6
TOTAL	mean	517	848
	standard deviation (SD)	861	344

Table 5 presents data comparing expenditures in a swine farming context before and during the ASF outbreak, focusing on disinfectants, cleaning, and electricity. Before ASF, the total average varied from P344 to P1,378 (mean

= P517, SD = P861). The ASF outbreak revealed a substantial impact of ASF on input costs. During the outbreak, an overall average range varied from P504 to P1,192 (mean=P848, SD=P344) expenses for the combined categories. This stark increase in expenses was influenced by the electricity bills.

Before the outbreak, the average expenditure on disinfectants, cleaning, and electricity got an average amount that ranged from 401 to P951 (mean = P275, SD =P676), P24 to P258 (mean=P141, SD=P117), P33 to P169 (mean=P101, SD=6P8). However, during the outbreak, the average spending on cleaning and disinfectants dwindled to a range of P33 to P130 (mean=P83, SD=P50) while the electricity bills surged from P232 to P480 (mean=P356, SD=P124). The substantial downturn in expenditures on cleaning and disinfection is represented by a reduced swine population due to heightened mortality rates, thereby rendering the area constrained for such activities. Conversely, the surge in electricity consumption during the ASF outbreak potentially reflects alterations in farming practices. The National Hog Farmers (2023) emphasizes the need for stringent protocols to mitigate the risk of disease spread particularly considering the significant decrease in expenses related to cleaning and disinfection techniques noted during the outbreak.

Outstanding Loan Repayment

Table 6 reveals the average outstanding loan with an average amount that varies from P13,9223 to P54,077 (mean = P34,000, SD = P20,077), indicating a wide range in the loaned amounts among respondents. The average interest rate being charged varies from 0.88% to 3.92% (mean = 2.40%, SD= 1.52%). It is noteworthy that 7 (20%) of raisers reported being able to pay their loans while 4 (6%) were unable to do so. Among the strategy's raisers coped with loan repayment, 5 (9%) paid after receiving compensation, 1 (2%) opted for weekly installments, and another 1 (2%) paid only the interest. Additionally, 1 (2%) saved money from their salaries for loan amortization, 1 (2%) considered reloan options, and 2 (4%) planned to pay once their stocks were sold as their options for non-payment. In alignment with these findings, it is worth noting that the Department of Agriculture (DA) has acted through its Regional Field Offices (RFOs) by committing to fully compensate all farmers whose hogs were culled due to ASF (DA Communications Group, 2021).

Table 6. Outstanding loan repayment of the respondents

PARTICULARS	AVERAGE	STANDARD DEVIATION
Amount loaned (n = 11)	P 34,000	20,077
Interest rate (n = 3)	2.49	1.52
	FREQUENCY	PERCENTAGE
Able to pay the loan		
yes	7	20
no	4	6
Ways of paying loan (n = 7)		
after receiving compensation	5	9
weekly installment	1	2
paid the interest only	1	2
Options for non-payment (n = 4)		
saving from the salary for the amortization	1	2
reloan	1	2
pay once the stocks are sold	2	4

Source of Livelihood

Table 7. Sources of livelihood of the respondents

SOURCES	BEFORE ASF OUTBREAK		DURING ASF OUTBREAK	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
Farming	20	36	18	33
Small business	7	13	13	24
Salary	8	14	8	14
Salary and farming	11	20	11	20
Farming and small business	8	14	2	4
Assistance from relatives	1	2	3	5

Table 7 illustrates the sources of livelihood before and during the ASF outbreak. Before the outbreak, farming was the predominant source of income for 20 (36%) swine raisers, followed by salary and farming livelihood with 11 (14%), salary and farming plus small business with 8 (14%), small business with 7 (13%) and assistance from

relatives with 1 (2%). However, during the ASF outbreak, there was a notable shift in livelihood strategies, with farming remaining as the primary source of income for 18 (33%), followed by small businesses with 13 (24%), salary and farming with 11 (20%), salary with 8 (14%) raisers, assistance from relatives with 3 (5%) raisers, and farming and small business with 2 (4%). These shifts signify a transition towards diversified income sources. The predominant source of livelihood of the raisers before and during the outbreak is supported by the findings from Cooper et al.'s (2022) research.

Employment

The employment reveals that before the ASF outbreak, two backyard swine raisers had engaged up to one worker to assist with their backyard raising activities. However, once the outbreak occurred, these raisers were unable to maintain this employment, either having to release their workers or being unable to continue paying their wages due to the financial challenges and the reduction in the number of hogs raised imposed by ASF. The inability to sustain employment during this crisis is indicative of financial hardships and emphasizes the broader repercussions of ASF on the economic stability of the swine industry. This finding is supported by the narratives outlined in the investigation carried out by Cooper et al. (2022).

Sales

Table 8. Sales of the respondents

STATISTICS	BEFORE ASF OUTBREAK	DURING ASF OUTBREAK
Mean	P 25,891	P 7,940
Standard deviation (SD)	P 28,493	P 15,865
Minimum	0	0
Maximum	P 100,000	P 70,000

Table 8 indicates a notable shift in the sales of products by raisers before and during the outbreak of ASF. Before the outbreak, the average sales ranged from zero to P54,384 (mean = P25,891, SD = P28,493). However, during the ASF outbreak, a substantial downturn in sales occurred, with the average falling within a range of zero to P23,805 (mean = P7,940, SD = P15,865). Several raisers reported zero sales, attributing this to the mortality of hogs before reaching the marketable stage, a consequence of the ASF outbreak. The significant drop in sales vividly illustrates the economic setbacks experienced by backyard raisers. This finding is corroborated by the result of the study of Nguyen et al. (2021).

3.4 Adopted Coping Strategies

This section provides a concise overview of the strategies adopted by these raisers, encompassing areas such as input recovery, loan repayment, access to credit, re-operation practices, technical assistance or animal health services, responses to community threats, access to market and market linkages, and the role of policy and government support. These strategies collectively highlight the multifaceted efforts undertaken by raisers to navigate the economic repercussions of ASF and underscore the need for a comprehensive understanding of their resilience during this crisis.

Input Recovery

Table 9 reveals the varied coping mechanisms implemented by farmers to overcome the difficulties arising from the ASF outbreak. Notably, a substantial proportion of 12 (22%) raisers, redirected their focus towards cultivating diverse crops such as palay, vegetables, coconuts, fish, or mushrooms, indicating a shift towards diversified agriculture. Similarly, an additional 12 (22%) raisers relied on a monthly salary for financial support.

Table 9. Respondents' coping strategies to recover inputs

STRATEGIES	FREQUENCY	PERCENTAGE
Adopted alternative livestock species (goat/ chicken/ cattle)	2	4
Shifted to planting and selling plants	1	2
Focused on farming (palay/ vegetable/ coco farm/ fish/ mushroom)	12	22
Engaged in small businesses (local food/ street food)	11	20
Limit expenses	8	15
Relied on monthly salary	12	22
Engaged in servicing jobs	1	2
Nothing else can be done	8	15

A significant segment of 11 (20%) raisers embraced an entrepreneurial approach to income generation by engaging in small businesses such as selling local food or street foods near their residences. Moreover, an equal number of 8 (15%) raisers opted to limit their expenses as a coping strategy while some expressed a sense of resignation, perceiving no other viable alternatives amidst the challenges posed by the outbreak. Furthermore, 2 (4%) raisers chose to explore alternative livestock species like goats, chickens, or cattle, and one raiser (2%) transitioned to planting and selling plants while another raiser pursued a servicing job. This data reflects the resourcefulness of the backyard swine raisers to sustain their livelihoods and recover from the crisis. This finding is supported by the result of the study conducted by Penrith et al. (2023).

Loan Repayment

Table 10. Respondents' coping strategies for loan repayment

STRATEGIES	FREQUENCY	PERCENTAGE
Continued regular loan payments as originally scheduled	1	2
Deferred loan payments with the lender's approval	1	2
Restructured the loan terms or negotiated with the lender	1	2
Applied for other financial assistance programs	1	2
Took portion from salary	1	2
Saved money from farming	1	2
Paid after receiving the compensatory assistance	1	2

Table 10 presents that among the seven backyard swine raisers, their strategies varied to meet their financial obligations. One (2%) chose to maintain regular loan payments as initially scheduled while another (2%) opted for deferred payments with the lender's approval, indicating a negotiated arrangement. Restructuring loan terms through negotiation with the lender was undertaken by a third-raiser (2%), reflecting a proactive approach to financial management. Additionally, one (2%) raiser explored external financial assistance programs, while another (2%) utilized a portion of their salary for loan repayment. Some (2%) respondents tapped into savings generated from farming activities, while another (2%) chose to settle the loan after receiving compensatory assistance. A contrasting story was shared during the production of the process matrix in the Network Mapping activity conducted by Cooper et al. (2022) that a participant had taken a loan from the bank to start his pig farm with their house serving as collateral and could no longer service the loan.

Access to Credit

Table 11. Respondents' coping strategies to access to credit

STRATEGIES	FREQUENCY	PERCENTAGE
Maintained a good relationship with the "Suking" Agri Supply (input trusted supplier)	7	13
Keep updated with the credit programs of both private and government sectors	4	7
No plan to avail of credit	9	16
Through acquaintances	3	6
No response	32	58

Table 11 reveals that the highest portion of respondents (58%) did not provide a specific response regarding their credit access strategies. Of the 11 raisers who utilized loans, 7 (13%) emphasized the importance of maintaining favorable relationships with trusted input suppliers, known as "Suking" Agri Supply. Additionally, 4 (7%) raisers kept themselves updated with credit programs offered by both private and government sectors to access credit resources. However, a substantial portion of 9 (16%) raisers expressed no intention to avail credit during this period. A smaller subset of 3 (6%) raisers relied on their acquaintances to access credit. This data emphasizes the varied strategies adopted by raisers to secure credit and highlights the significance of strong relationships with input suppliers in facilitating access to crucial financial resources during challenging times caused by ASF. This result is supported by the findings of the study conducted by Bayudan-Dacuyucuy et al. (2020).

Re-operation Practices

Table 12 illustrates that a significant portion constituting 21 (38%) raisers, declared that they were no longer engaged in swine raising. Among those who opted for alternative strategies, 15 (27%) raisers chose to repurchase stock but only after a substantial waiting period of six months or more. Furthermore, 13 (24%) raisers conveyed their intentions to raise swine again in the future. Additionally, some (6 or 11%) raisers reduced the number of purchased stocks. These strategies reflect the diverse responses of raisers to the economic impact of ASF, including

reevaluating their involvement in swine raising or adopting more cautious and staggered approaches to re-entering the industry. The prevalence of backyard swine raisers exiting the industry primarily due to the challenges posed by the ASF outbreak is supported by the conclusions drawn from the study conducted by Sayruamyat (2022).

Table 12. Respondents' coping strategies for their re-operation practices

STRATEGIES	FREQUENCY	PERCENTAGE
Purchase another stock after six (6) months and beyond	15	27
Reduced the number of purchased stock	6	11
No longer engaged in swine-raising	21	38
Plan to raise soon	13	24

Technical Assistance/Animal Health Services

Table 13. Respondents' coping strategies for technical assistance/animal health services

STRATEGIES	FREQUENCY	PERCENTAGE
Maximized the use of social media to ask for assistance through searching	6	11
Seek the help of the patronized Agri supply directly through text messages	11	20
Self-know how medication	16	29
Call the technician from the MAO/private feed companies	22	40

Table 13 delineates the approaches taken by a notable 22 (40%) raisers to seek assistance, predominantly by directly reaching out to technicians from the Municipal Agriculture Office (MAO) or private feed companies. Moreover, 16 (29%) raisers demonstrated self-sufficiency by relying on personal knowledge for medication, indicating a degree of self-sufficiency in addressing the health needs of their livestock. Another 11 (20%) raisers sought assistance by directly texting their patronized agricultural suppliers. Additionally, 6 (11%) raisers embraced the use of social media to seek assistance through online searches. Most responses imply a reliance on professional guidance and expertise. The outcome of Garcia's (n.d.) research on swine production aligns with and reinforces this finding.

Access to Market and Market Linkages

Table 14. Respondents' coping strategies to access to market and market linkages

STRATEGIES	FREQUENCY	PERCENTAGE
Called the backyard slaughterer	13	24
Sold to adjacent barangay	5	9
Through the help of the feed company technicians	8	15
Posted on Facebook	1	2
Sold to patronizing buyers	26	47
No sales yet	2	4

Table 14 illustrates that nearly half, specifically 26 (47%) raisers, successfully sold their products to patronizing buyers. Some raisers explored alternative avenues such as backyard slaughterers, with 13 (24%) opting for this approach while 8 (15%) sought the assistance of feed company technicians to access markets. Additionally, 5 (9%) raisers sold their products to adjacent barangays while 2 (4%) raisers reported no sales yet. Only one (4%) raiser resorted to social media by posting on Facebook for product promotion. The predominant sales strategy underscores the crucial role of established buyer relationships in driving sales, a perspective that is emphasized when comparing these findings with Cooper et al.'s (2022) insights gathered from an interview with a local meat butcher.

Policy/Government Support

Table 15. Respondents' coping strategies to policy/government support

STRATEGIES	FREQUENCY	PERCENTAGE
Full acceptance	42	76
Had to accept because there were policemen and soldiers around	3	6
Just thought of the promised compensation for the damaged	2	4
All the reasons above mentioned	3	6
Stayed calm yet hurting inside	5	9

Table 15 provides insights into the attitudes of raisers towards government policies and support during the ASF outbreak. A significant majority, comprising 42 (76%) raisers, reported full acceptance of government policies and support. Meanwhile, 5 (9%) raisers reported staying calm externally while hurting inside, and 3 (6%) raisers accepted the policies due to the presence of law enforcement. Another subset of 3 (6%) raisers cited multiple reasons for their acceptance, potentially combining trust in the policies with the assurance of compensation. A small group of 2 (4%) raisers mentioned considering the promised compensation for the damages as a factor in their acceptance. This data reflects the complex interplay of acceptance, compliance, and emotional responses among raisers in the context of government interventions during the ASF outbreak. The findings imply a sense of trust and compliance with the implemented measures, as affirmed by the study conducted by Xu, Zhou, Qiu, Li, & Zhang (2021).

4.0 Conclusion

The findings from this study shed light on the intricate challenges encountered by backyard swine raisers in Aurora. Predominantly male, college-educated individuals in medium-sized households, these raisers heavily depend on farming as both their primary occupation and main income source. The ASF outbreak has had profound economic impacts, leading to significant reductions in sales and necessitating practical adjustments in farm operations.

Amidst these challenges, raisers have demonstrated resilience through various adaptive strategies. Many have diversified into alternative farming activities to mitigate losses, while others have implemented diverse loan repayment strategies to manage financial burdens. Interestingly, a notable proportion of raisers have opted to discontinue swine raising altogether, signaling a shift in livelihood strategies in response to the crisis.

Notably, proactive measures such as seeking technical assistance and leveraging loyal buyers for product marketing illustrate efforts to navigate the crisis effectively. Furthermore, the acceptance of government policies, particularly the massive culling initiative for ASF prevention, underscores raisers' cooperation for the collective well-being of the swine industry.

These results underscore the complexity of the challenges faced by backyard swine raisers and highlight the urgent need for targeted interventions to enhance their resilience and sustainability. Moving forward, it is imperative to develop and implement tailored support measures that address the specific needs of these raisers, ensuring their long-term viability in the face of crises like the ASF outbreak.

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This research is solely authored by the researcher.

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The author declares no conflicts of interest about the publication of this paper.

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9.0 References

- Aquino, A. P. (2020, July 16). Republic Act 7607: Empowering Smallholder Farmers in their Economic Endeavors. FFTC Agricultural Policy Platform (FFTC-AP). <https://ap.fttc.org.tw/article/>.
- Aspile, S. C. K. C., Manipol, N. E. P., Despositorio, D. P. T., & Aquino, N. A. (2016). Profitability of swine enterprises by scale of operation and production system in two hog-producing towns in Bulacan, Philippines. *Journal of Economics, Management & Agricultural Development*, 2(2), 79-95.
- Bayudan-Dacuycuy, C., Magno-Ballesteros, M., Baje, L. K. C., & Ancheta, J. A. (2020). Towards a more sustainable financing of small farmers and fisherfolk's agricultural production (No. 2020-38). PIDS Discussion Paper Series.

- Bollido, M. E., Villaluz, R. J. G., & Orale, R. L. (2022). Emerging Supply Chain of Pork and the Opportunities for Small-Scale Raisers in Catbalogan City in the Philippines. *Sarhad Journal of Agriculture*, 38(4), 1370-1380.
- Cooper, T. L., Smith, D., Gonzales, M. J. C., Maghanay, M. T., Sanderson, S., Cornejo, M. R. J. C., ... & Salvacion, O. P. (2022). Beyond numbers: Determining the socioeconomic and livelihood impacts of African swine fever and its control in the Philippines. *Frontiers in veterinary science*, 8, 734236.
- Department of Agriculture (2021). DA set to pay in full all ASF indemnification, totaling P2B. Official Portal of the Department of Agriculture. <https://www.da.gov.ph/da-set-to-pay-in-full-all-asf-indemnification-totaling-p2b/>
- Department of Agriculture (2021, November 21). DA set to pay in full all ASF indemnification, totaling P2B. Official Portal of the Department of Agriculture. <https://www.da.gov.ph/da-set-to-pay-in-full-all-asf-indemnification-totaling-p2b/>.
- FAO (2020). African Swine Fever: Managing the Risk to the Livelihoods of Smallholders. Food and Agriculture Organization of the United Nations. Available at: <http://www.fao.org/3/ca8680>.
- FAO (2019). African swine fever situation in Asia update. Retrieved from http://www.fao.org/ag/againfo/programmes/en/empres/news_260219b.html.
- Hsu, C.-H., Montenegro, M., & Perez, A. (2023). Space-Time Dynamics of African Swine Fever Spread in the Philippines. *Microorganisms*, 11(6), 1492. <https://doi.org/10.3390/microorganisms11061492>.
- National Hog Farmer (2023). Studies: Protect your pigs from ASF. Retrieved from: <https://www.nationalhogfarmer.com/hog-health/studies-show-need-for-vigilant-african-swine-fever-on-farm-prevention>.
- Nguyen-Thi, T., Pham-Thi-Ngoc, L., Nguyen-Ngoc, Q., Dang-Xuan, S., Lee, H. S., Nguyen-Viet, H., ... & Rich, K. M. (2021). An assessment of the economic impacts of the 2019 African swine fever outbreaks in Vietnam. *Frontiers in Veterinary Science*, 8, 686038.
- Office of the Secretary (2020). Guidelines on Swine Depopulation African Swine Fever (ASF) Confirmation.
- OIE (2020). African swine fever: trade impacts and implications for food security. Retrieved from <https://www.oie.int/en/animal-health-in-the-world/african-swine-fever/african-swine-fever-trade-impacts-and-implications-for-food-security/>.
- Penrith, M.-L., van Heerden, J., Pfeiffer, D. U., Oļševskis, E., Depner, K., & Chenais, E. (2023). Innovative Research Offers New Hope for Managing African Swine Fever Better in Resource-Limited Smallholder Farming Settings: A Timely Update. *Pathogens*, 12(2), 355. <https://doi.org/10.3390/pathogens12020355>.
- Perey, E. P. (2017). Determinants of sustainability of backyard pig farming in the Philippines. *International Journal of Advanced Research*, 5(4), 1055-1064.
- PSA (2023). Special Release Livestock and Poultry Production in Aurora: 2021. Philippine Statistics Authority. Retrieved August 22, 2023, from <https://rso03.psa.gov.ph/article/special-release-livestock-and-poultry-production-aurora-2021>.
- PSA (2022). Swine Production Report, January-December 2021. Philippine Statistics Authority.
- PVO (2020). ASF Epidemiology in Aurora Province.
- Rahman, M. S., Khatun, M., Rahman, M. A., Azam, M. G., & Sultana, S. (2014). Assessing the impact of credit on rice production and food security on farm households in Bangladesh. *Int J Innov Res Dev*, 3, 300-308.
- Ritchil, C. H., Faruque, M. O., Tabassum, F., Hossain, M. M., & Bhuiyan, A. K. F. H. (2013). Socio-economic status of pig rearers and management system of native pigs in Bangladesh. *Indian J. Anim. Sci*, 83(11), 1226-1228.
- Sayruamyat, S. (2022, March 30). Thai Swine Industry during African Swine Fever Outbreak in Asia. FFTC Agricultural Policy Platform (FFTC-AP). <https://ap.fttc.org.tw/article/3011>.
- Wedzerai, M. (2022). ASF Philippines: Socio-economic and livelihood impacts. *Pig Progress*. <https://www.pigprogress.net/world-of-pigs/country-focus/asf-philippines-socio-economic-and-livelihood-impacts/>.
- Xu, B., Zhou, L., Qiu, C., Li, Y., & Zhang, W. (2021). What Determines Pig Farmers' Epidemic Coping Behaviors: A Qualitative Analysis of Endemically Infected Areas in Relation to African Swine Fever. *Veterinary Sciences*, 8(11), 266.

Youth and Elections: Exploring Mobilization and Participation Influences

Fay Garneth L. Buscato, Jenilyn O. Entong, Angela Gabrielle B. Bacang*
Foundation University, Dumaguete City, Negros Oriental, Philippines

*Corresponding Author email: angela.bacang@foundationu.com

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Abstract. This study delved into the nuanced factors influencing youth mobilization and participation during elections, particularly focusing on the Filipino context. Despite the recognition of youth involvement as pivotal for nation-building, concerns persist regarding the perceived apathy among Filipino youth towards electoral engagement. Employing a quantitative approach, this research utilized survey questionnaires to gauge the influence shaping the decisions of young voters. Randomly selected respondents from various barangays form the sample pool, providing insights into the factors driving or hindering youth mobilization. Surprisingly, the findings revealed that traditional influential factors fail to significantly impact youth mobilization and participation. Moreover, demographic characteristics such as age, gender, religion, education, and employment status demonstrate limited correlation with electoral engagement levels. These findings prompt a reevaluation of existing assumptions and highlight the need for targeted strategies to enhance youth participation in electoral processes while upholding the fundamental Right of Suffrage.

Keywords: Elections; Youth; Barangays; Youth mobilization; Youth participation; Young voters; Electoral engagement; Right of suffrage.

1.0 Introduction

Recent years have witnessed a close examination of the electoral involvement of young individuals, who are identified as the demographic with the lowest likelihood of participating in voting processes, according to Juelich and Coll (2020). Despite efforts to increase youth involvement, many young people show declining interest in voting, viewing it as a basic form of engagement. Pastarmadzhieva, Pastarmadzhieva, and Sakal (2021) claimed that various surveys and analyses across numerous Western democracies consistently highlight the limited engagement of the younger cohort in electoral activities. The discourse surrounding youth political involvement recurrently addresses the “disengagement” of young individuals with electoral affairs. Moreover, Putnam (2000) argued that traditional viewpoints portray younger demographics as being less connected to the voting process compared to older age groups, while Bergh et al. (2019) perceived them as being relatively less involved in politics, resulting in lower voting frequency. Additionally, studies by Galston (2004) and Frisco, Muller, and Dodson (2004) underscore this trend in countries like Canada, the UK, and the USA.

Jose P. Rizal, regarded as the Philippines’ national hero, emphasized the importance of youth engagement in securing the nation's future, a sentiment echoed by the Philippine government, as enshrined in the 1987 Philippine Constitution, particularly in Article II, Section 13. This section acknowledges the youth's responsibility in maintaining the country's stability, promoting their welfare, fostering patriotism, and encouraging their participation in political affairs. The importance of youth participation, particularly in elections, extends beyond numerical votes, as highlighted by COMELEC Chairman J. Andres Bautista in his 2015 speech at Far Eastern University's “Project resibo ko, boto ko para sa bayan ko.” While youth voting power significantly influences

election turnout, its impact on governance remains limited, often attributed to perceived impatience among youth. Chairman Bautista suggests that channeling this impatience into advocacy for governance reforms could serve as a potent force for change, urging the youth to demand much-needed reforms actively.

Previous scholars have explored Filipino youth's electoral participation. The issue of a large portion of the youth abstaining from electoral participation has garnered attention since the 1990s and has been highlighted by various scholars including Pacheco (2008), Iyengar and Jackman (2003), Kimberlee (2002), Henn, Weinstein, and Wring (2002), White, Bruce, and Ritchie (2000), and Institute for Social and Economic Research (1995). Indeed, while the youth are often perceived as a pivotal force driving reform and change through their active engagement, there remains a portion who abstain from mobilization and fail to exercise their Right of Suffrage. Although significant factors influencing the electoral choices of the Philippine electorate have been identified, it remains unclear whether these factors exert a similar impact on the youth, or if the mobilization and participation of the youth are influenced by distinct factors.

Hence, this study was conducted, seeking to ascertain whether certain determinants affect youth mobilization and participation during elections, and to what extent these factors influence the youth demographic. Moreover, it aims to elucidate the underlying challenges facing the country's youth electorate, notwithstanding its status as one of the most established democracies in Asia.

2.0 Methodology

2.1 Research Design

The study is characterized by its descriptive and correlational methodology. Descriptively, it aims to identify and characterize the perceived mobilization and participation of youth respondents by analyzing their responses. Furthermore, the study adopts a correlational approach by examining the relationships between various variables, such as factors influencing youth mobility, respondents' profiles, and levels of youth mobilization and participation.

2.2 Research Participants

The study was carried out in thirteen (13) randomly selected barangays in one of the first-class municipalities in Central Visayas, Philippines. The study included a sample of three hundred seventy-nine (379) youth from the thirteen barangays. These individuals are aged between 18 and 30, encompassing both registered and non-registered voters. They were chosen using the random sampling technique.

2.3 Research Instrument

The researcher employed a researcher-made questionnaire as well as interview methods to collect pertinent data for the study. The questionnaire consisted of structured questions, offering respondents a range of choices with checkboxes for selection. To ensure content validity, the questionnaire underwent evaluation by two Master of Public Administration (MPA) graduates who hold governmental positions and possess expertise in the subject matter. Subsequent to the input of the experts, the researcher implemented revisions to refine the instruments accordingly.

2.4 Data Gathering Procedure

Prior to distributing the questionnaires to the respondents, a pre-test involving thirty (30) youth, comprising both registered and non-registered voters, was conducted to assess the reliability of the study's questions. Additionally, a formal request letter was sent to the respective Barangay Captains of the thirteen barangays, seeking their authorization before disseminating the questionnaires. Subsequently, the questionnaires were distributed to each barangay in adherence to schedules arranged by the Barangay Captains, and the survey was administered in batches based on respondent availability. However, due to scheduling conflicts, certain questionnaires were distributed by barangay officials themselves, accompanied by a request letter affirming the confidentiality of survey results and all other information gathered.

2.5 Ethical Considerations

The respondents received comprehensive explanations regarding the study's objectives. They were also provided with the autonomy to decide whether they wished to participate. Rigorous protocols were instituted to ensure the

protection of data confidentiality, including the personal details of the respondents. Moreover, the respondents were allowed to exit the study at any time without experiencing negative repercussions. Subsequently, all collected data were securely maintained confidentially and anonymously. The researcher assured the respondents that their involvement in the study would not result in any harm.

3.0 Results and Discussion

3.1 Registration Before the Election

Table 1 shows the status of the respondents in terms of their registration before the election. As indicated above, a huge majority of the respondents (98.15%) are registered voters and only about 2% are not. These findings imply that the majority of the youth have exercised one of their basic political rights under the Right of Suffrage. However, this large number of registered voters does not equate to the overall mobilization and participation rate of the youth during elections as discussed by the late Senator Meriam D. Santiago during her inaugural speech at Ateneo de Manila University in 2014.

Table 1. Respondents' registration prior to the election

Question: Are you a registered voter?	Frequency	Percent
Yes	372	98.15
No	7	1.85
Total	379	100.00

Santiago clearly defined the terms *political participation* and *youth activism*. First, according to her, political involvement generally encompasses the activities undertaken by ordinary citizens to impact or endorse governmental affairs and political processes. She then proceeded to elaborate on the three kinds of youth political participation observed throughout history. One is the so-called Conventional Participation, which adopts or follows the traditional activities of the electoral process such as voting, joining political organizations or meetings, lobbying, and party affiliation among others. However, the second type, Unconventional Participation, has something to do with more aggressive and rebellious approaches such as strikes, boycotts, petitions, personal violence, and the like. This connotes that voting alone is not the only means of political participation and that casting one's vote is not sufficient to be considered a form of mobilization. Moreover, Miller et al. (2021) conjectured that many times, these initiatives driven by the youth stem from communal suffering and a sense of injustice, inheriting the ideals of earlier activists who sought to revolutionize our society. Generation Z, being noted as the most racially heterogeneous cohort, places a strong emphasis on values such as social equity, justice, and the pursuit of societal transformation.

Although the majority of the youth are registered voters, the number does not guarantee that all these registered voters cast their votes during the last three elections. In fact, some of the respondents disclosed during the interview that they did not vote during the elections despite being registered voters. They stated it was due to personal reasons, such as the need to go somewhere else to work, which then resulted in their failure to transfer their registration. Others simply said that they did not find the time to vote. Wattenberg (2020) postulated that the turnout of young voters fell short of the levels required to provide politicians with the necessary support, both in terms of voter participation and the magnitude of support. Looking ahead to 2020, a pivotal election year, questions arise about the potential outcomes. Wattenberg went on to say that even by late 2019, media outlets were highlighting the generation gap as a pivotal division among democratic voters, signaling its significance in shaping electoral dynamics.

However, some of the unregistered voters divulged that although they were unable to vote in the 2016 election, they managed to participate in political events by campaigning for their or their family's favored candidate and by attending campaigns and education drives.

3.2 Extent of Election Mobilization and Participation of the Respondents

Table 2 shows the respondents' extent of election mobilization and participation during the last three elections (2010, 2013, and 2016). The respondents were asked to rate their mobilization and participation during the previous elections. Results then revealed that the youth's election participation and mobilization were moderate. This implies that the respondents moderately participated and were moderately mobilized during these elections.

Table 2. Extent of election mobilization and participation of the respondents (n = 379)

Question: How would you rate your mobilization and participation on the following elections;	w$\bar{x}$	Verbal Equivalent	Extent of Mobilization
2010	3.01	Sometimes	Moderate
2013	3.09	Sometimes	Moderate
2016	3.08	Sometimes	Moderate
Composite	3.06	Sometimes	Moderate

It is important to acknowledge that a portion of the respondents may have recently turned 18, potentially rendering them ineligible to register and vote in previous elections. Additionally, while the Sangguniang Kabataan (SK) elections were not abolished, they were postponed, leading to missed opportunities for youth participation in voting. However, Senator Santiago's perspective underscores that traditional voting methods are not the sole avenues for mobilization and participation. Thus, youth could have engaged in alternative forms of political participation. Overall, the findings suggest that despite some respondents being underage during prior elections, they exhibited moderate levels of mobilization and participation. In essence, the respondents, as a whole, did not engage in the seven identified practices of youth political participation.

According to Erpyleva (2021), age may indeed present a barrier to participation; however, it has to be recognized that electoral engagement is not the sole form of mobilization and participation available to the younger demographic during elections. While historical perspectives in the West often consider children insufficiently developed for political involvement, adolescence represents a transitional phase between childhood and adulthood, blurring conventional boundaries.

Additionally, Erpyleva examined adolescents' recent wave of protest movements in Russia and observed the emergence of grassroots activism such as the 'For Fair Elections' movement spanning 2011 to 2012, along with the subsequent anti-corruption demonstrations from 2017 to 2018. In-depth interviews were conducted with high school-aged protesters from both periods and through these, a shift in adolescents' self-perception as political actors emerged. Whereas participants in the earlier movement viewed themselves as immature, by the latter period, they embraced their roles as active political agents. This evolution reflects the alterations in the political upbringing of teenage demonstrators, suggesting broader implications beyond the Russian context (Erpyleva, 2021).

3.3 Types of Respondents' Election Mobilization and Participation

Table 3 contains results for the respondents' type of election mobilization and participation. It can be gleaned from the table that the respondents have "low" mobilization and participation ratings in all 7 items.

Table 3. Types of respondents' election mobilization and participation (n = 379)

Question: Were your mobilization and participation during elections includes the following:	w$\bar{x}$	Verbal Equivalent	Extent of Mobilization
Campaigning for education drive	2.57	Rarely	Low
Volunteering for elections (watcher during polls)	2.52	Rarely	Low
Joining a political party	2.42	Rarely	Low
Filing for candidacy	2.35	Rarely	Low
Attending voter education drive	2.27	Rarely	Low
Campaigning for a politician	2.22	Rarely	Low
Reporting observed election issues and anomalies	2.20	Rarely	Low
Composite	2.36	Rarely	Low

Kitchen (n.d.-b) highlighted a significant departure from traditional views on election mobilization and participation, noting that shifts in the spatial; distribution of voters, electoral regulations, and the economic activities of oligarchs have created new avenues for engaging voters. Despite this evolution, there remains a discrepancy between the introduction of various forms of political participation and their actual utilization, particularly evident in the tepid engagement of youth in the political process.

In the current study, the reluctance of the youth to embrace these emerging modes of mobilization can be linked to their geographic context, predominantly rural areas with barangays situated far from urban centers. This spatial

distinction may foster distinct perspectives or priorities compared to their urban counterparts, with political engagement potentially ranking lower on their list of concerns.

Furthermore, the absence of comprehensive statistical analysis on youth election mobilization and participation complicates the assessment of these trends. Existing data primarily focus on voter turnout and its decline, failing to capture shifts specific to youth engagement. Aboejo's (2015) work, for instance, primarily explores the prevalence of vote buying in the Philippines, emphasizing its impact on voter behavior but overlooking broader patterns of youth mobilization and participation.

3.4 Factors Affecting the Decision Making of the Respondents in Their Election Registration

Table 4 shows the extent of influence of the factors affecting the respondents' mobilization and participation in terms of registering in the local COMELEC. The results revealed that the factors enumerated in the table rarely influence the respondents' decision to either register or not register in the COMELEC.

Table 4. Factors affecting the decision making of the respondents in their election registration (n = 379)

Question: Are you likely to be influenced by the following on registering at the COMELEC;	w$\bar{x}$	Verbal Equivalent	Extent of Influence
Personality Endorsement	2.60	Rarely	Low
Profit/Incentive (Money, Favors)	2.57	Rarely	Low
Social Affiliation	2.47	Rarely	Low
Political Parties	2.47	Rarely	Low
Mass Media	2.46	Rarely	Low
Church	2.41	Rarely	Low
Family	2.40	Rarely	Low
Charisma	2.32	Rarely	Low
Political Platform	2.26	Rarely	Low
Composite	2.44	Rarely	Low

The observed limited impact challenges the foundational tenets of the Socialization Theory. Pioneered by early theorists such as Hess and Torney (1967), Yates and Youniss (1999), Torrney-Purta (2000), Jennings and Niemi (2015), Greenstein (1970), Connell (1971), and Sapiro (1998), this theory posits that political attitudes and behaviors are ingrained in individuals during childhood and adolescence through influential socialization agents like family, school, and religious institutions. Furthermore, it suggests that civic participation is shaped by functional conduits such as religion, political parties, and social networks, rather than being solely determined by institutional structures, social class, or individual socialization experiences. Additionally, this theory elucidates that individuals' engagement in electoral politics may be influenced by the persuasive efforts of others (Rosenstone & Hansen, 1993). Psychologist Robert Cialdini delves into the concept of "social proof," a theory suggesting that individuals frequently look to the actions and conduct of others to assess what is right or suitable across diverse contexts. In the aspect of electoral politics, the social proof theory proposes that when voters observe respected or influential figures publicly backing a certain candidate, they tend to perceive that candidate more positively and see them as a worthwhile choice. Such endorsements hold a substantial influence that signals to the voters that the endorsed candidate merits their support and has what it takes to lead (Mortensen & Cialdini, 2009).

Given the contrasting implications of the study's findings, it becomes apparent that the Socialization Theory does not neatly align with the outcomes of this particular research endeavor. However, there is a notable reevaluation of the "Personality Endorsement" factor by the researcher. Despite receiving a relatively low rating, it retained a degree of influence, emerging as the foremost factor among the others. This persistence in influence could be attributed to the prevalence of television advertisements and social media endorsements by celebrities ("artistas"), affirming their voter registration status, thereby potentially motivating the youth to follow suit.

3.5 Factors Affecting the Decision-Making of the Respondents Being a Volunteer during Elections

Table 5 presents the findings regarding the degree of influence exerted by various factors on youth mobilization and participation, specifically in terms of volunteering during elections. The data suggest that the factors analyzed have a minimal impact on the youth's decision to volunteer, indicating a low level of influence overall. Put simply, these factors seldom sway the youth's decision-making process.

Senator MDS has highlighted the importance of alternative forms of participation, particularly emphasizing the communitarian approach evident in volunteerism and social engagement during elections. However, despite this acknowledgment, existing studies have largely neglected to delve into the extent of youth involvement in volunteer activities during elections, nor have they explored the consistency of youth participation in volunteering endeavors. Furthermore, there is a notable absence of research examining the factors that potentially influence youth volunteerism during electoral processes.

Table 5. Factors affecting the decision making of the respondents being a volunteer during elections (n = 379)

Question: Are you likely to be influenced by the following on being a volunteer during elections;	w$\bar{x}$	Verbal Equivalent	Extent of Influence
Profit/Incentive	2.61	Sometimes	Moderate
Family	2.60	Rarely	Low
Personality Endorsement	2.59	Rarely	Low
Political Parties	2.58	Rarely	Low
Mass Media	2.56	Rarely	Low
Charisma	2.39	Rarely	Low
Church	2.30	Rarely	Low
Political Platform	2.20	Rarely	Low
Social Affiliation	2.16	Rarely	Low
Composite	2.44	Rarely	Low

The Parish Pastoral Council for Responsible Voting (PPCRV), a prominent election monitoring body affiliated with the Church, has made fervent efforts to promote volunteerism, establishing it as a cornerstone of its mission. According to the organization's historical account on its official website (ppcrv.org), PPCRV was founded out of a commitment to volunteerism, driven by a collective desire to combat the pervasive corruption plaguing society.

What sets PPCRV apart is its ability to forge alliances across religious and cultural divides, particularly with Muslim Filipinos, including the Bangsamoro Civil Society Organizations and the Darul Ifta. Despite differing religious and cultural backgrounds, these parties united as watchdogs of Philippine politics, united in their pursuit of advocating for free, fair, and transparent elections. This collaboration saw Christian and Muslim volunteers working hand in hand, not just as partners, but as a cohesive family unit.

The volunteers of PPCRV are a diverse group, hailing from various walks of life, with many coming from economically disadvantaged backgrounds. Among them are numerous young people, driven by a common aspiration to contribute to the electoral process without prejudice or expectation of personal gain.

Walker (2006) delineated a notable division in young people's engagement, distinguishing between their involvement in civic matters versus political affairs. While they exhibit less interest, responsibility, and identification with the political realm, they actively participate in community activities, offering assistance and volunteering for various organizations. This dichotomy arises from the tangible rewards and immediate satisfaction derived from community engagement, which aligns more closely with their ideals.

Conversely, the uncertainty surrounding the efficacy of political participation dissuades young people from actively engaging in the political process. There's skepticism regarding the potential for meaningful change through political action and doubts about the competence of those involved in governance (Olajide et al., 2022; Gainous & Martens, 2012)

Consequently, there is a pervasive lack of trust in the impact of political involvement, significantly influencing young people's decisions to either participate in or abstain from voting procedures, as claimed by Glasford (2008). Additionally, young individuals often feel downgraded within the political arena, perceiving government institutions as ineffective and tainted by corruption, according to Shea and Green (2007). Their findings also show that youth cohort size exerts a negative effect on young people's electoral participation. Correspondingly, Nkansah and Papp (2022) found that this influence is particularly pronounced among young individuals who primarily rely on their peers for information. Their findings mark a significant advancement in understanding

how the size of a cohort influences its political behavior, a subject that has thus far received little attention in the literature concerning youth political engagement.

Nevertheless, the findings of the present study suggest that the impact of factors influencing youth volunteerism is predominantly "low." However, there exists one notable exception: Profit/Incentive emerged as a factor with a "moderate" level of influence on young people's decision to volunteer during elections. This indicates that monetary rewards, particularly those offered by political parties seeking to secure loyalty, may incentivize young voters, particularly in roles such as poll watchers. This finding resonates with the Rational Choice Theory, which posits that individuals make decisions, including whether to vote or not, through a cost-benefit analysis. In this context, the prospect of financial gain can sway young voters towards volunteering. It is worth noting, however, that while Profit/Incentive demonstrates a notable level of influence, it falls short of being considered high, indicating a moderated impact within the decision-making process.

3.6 Factors Affecting the Decision-Making of the Respondents on Campaigning for a Candidate

Table 6 offers insights into the degree of influence exerted by various factors on the decision-making process of youth regarding campaigning for a candidate. According to the findings, the overall influence of these factors is deemed moderate. Notably, among the nine factors considered, the Church emerges as the most influential. This prominence of the Church factor can be contextualized through the lens of Mobilization Theory, which posits that citizen participation in political processes is shaped by various channels, including religion, political parties, and social networks.

Thus, the coalition formed by the Church could potentially sway individuals to support or aid in the promotion of political candidates endorsed or approved by religious authorities. However, it is essential to clarify that this does not necessarily imply endorsement of block voting practices, as such actions would contradict the principles of a free and fair election. Ultimately, citizens retain the fundamental right to exercise their suffrage freely, allowing them to vote based on their own personal convictions and choices.

Table 6. Factors affecting the decision making of the respondents on campaigning for a candidate (n = 379)

Question: Are you likely to be influenced by the following on campaigning for a candidate during elections:	w$\bar{x}$	Verbal Equivalent	Extent of Influence
Church	2.95	Sometimes	Moderate
Family	2.92	Sometimes	Moderate
Mass Media	2.85	Sometimes	Moderate
Political Platform	2.80	Sometimes	Moderate
Profit/Incentive	2.80	Sometimes	Moderate
Political Parties	2.79	Sometimes	Moderate
Social Affiliation	2.67	Sometimes	Moderate
Charisma	2.59	Rarely	Low
Personality Endorsement	2.29	Rarely	Low
Composite	2.74	Sometimes	Moderate

Additionally, political entities such as advocacy groups, candidates, parties, and campaigns often perceive little incentive to engage with this demographic due to their lower likelihood of voting (DelliCarpini, 2000). Even when civic organizations make efforts to involve young adults, they frequently encounter inefficiencies and minimal returns on their investments (Gainous & Martens, 2012). This issue is also pointed out by Dikshit (2024) in the article "Voices of the Nation: Indonesia Prepares for the 2024 Election." Accordingly, the weakening in civic participation and the low voter turnout are closely linked to the neglect of youth's concerns within the political sphere. Put simply, when the political process disregards young people, they consequently disengage from the political system (Berson, Campos, Egea, Owens, & Bellara, 2013). Nevertheless, the findings of Ginting and Fauzan (2024), in their study conducted in Indonesia, revealed that numerous mass organizations, notably the Karya Youth Association, have actively engaged in the democratic process, particularly during the Karo regional head election, leading to the victories of certain political figures.

On the contrary, CBCP Permanent Committee on Public Affairs member, Fr. Jerome Secillano, emphasized that church leaders and the religious community are citizens entitled to voice their opinions on national matters, even

if their perspectives may diverge from the general public's. This perspective sheds light on why the Church, despite having a moderate influence, ranks highest among the factors influencing youth when it comes to campaigning for a candidate.

Furthermore, data from Table 6 revealed that "Charisma" and "Personality Endorsement" (celebrities) are the least influential factors in respondents' decision-making processes. This suggests a departure from the traditional paradigm where voting decisions were swayed by the popularity of politicians or the endorsements of famous figures. This shift in political behavior was noted by Political Science professor Ador Torneo, who observed a transition from voting for well-known candidates in 1995 to selecting politicians based on their image or character advantage in 2003. However, in the context of this study, endorsements by celebrities were found to have minimal impact on the voting decisions of young people.

3.7 Factors Affecting the Decision Making of the Respondents on Campaigning for Voter Education

Table 7 shows the results regarding the factors that are likely to influence the respondents' decision to campaign for voter education. Here, the respondents disclosed that political parties sometimes influence them in their drive to campaign for voter education.

Table 7. Factors affecting the decision-making of the respondents on campaigning for a voter education (n=379)

Are you likely to be influenced by the following on campaigning for voter education;	w$\bar{x}$	Verbal Equivalent	Extent of Influence
Political Parties	2.82	Sometimes	Moderate
Charisma	2.61	Sometimes	Moderate
Profit/Incentive	2.54	Rarely	Low
Mass Media	2.47	Rarely	Low
Personality Endorsement	2.44	Rarely	Low
Political Platform	2.41	Rarely	Low
Social Affiliation	2.28	Rarely	Low
Church	2.20	Rarely	Low
Family	2.19	Rarely	Low
Composite	2.44	Rarely	Low

In a study conducted in the United States, as highlighted in the article "Most & Least Politically Engaged States" [II-2], it is noted that many states do not prioritize civic education within their school systems. This deficiency is underscored by the fact that a significant portion of the public struggles with basic knowledge tests, such as understanding whether voter identification is required in their state. The lack of emphasis on civic education inevitably leads to adverse consequences for the political engagement of young Americans. Moreover, the passing requirements for social studies courses in high school are often less stringent compared to other subjects. This diminished emphasis on social studies exacerbates the knowledge gap among high school students, particularly regarding fundamental aspects of the political system, such as the role of the Electoral College and distinctions between political parties. Furthermore, there is scant attention given to local or state elections within the curriculum, further contributing to students' limited understanding of the electoral process. These factors collectively contribute to a sense of inadequacy among teenagers regarding their knowledge and readiness to participate in the voting process, resulting in a notably low voter turnout. Consequently, the effectiveness of voter education campaigns is undermined due to the limited exposure of young Americans to these critical matters (Zhu, 2021).

Nevertheless, Political Party Affiliation (Pol Par) and Charisma emerged with a moderate level of influence. Notably, certain political parties eschew the traditional "party coalition" approach, which typically revolves around presenting oppositional and incumbent candidates. Instead, these parties, along with party-list groups such as ANAKBAYAN and ANAKPAWIS, advocate not only for specific politicians but also for broader initiatives such as voter education and the promotion of people's rights. This alignment with Mobilization Theory suggests that political parties, along with religion and social networks, play a pivotal role in shaping individuals' participation in electoral politics.

According to Rosenstone and Hansen (1993), civic engagement can often stem from interpersonal persuasion. However, the current study's findings infer that, overall, these factors have limited influence on the decision-making processes of youth regarding campaigning for voter education initiatives.

3.8 Factors Affecting the Decision Making of the Respondents on Attending for Voter Education Drive

Table 8 presents the extent of influence of the factors that likely affect the youth's decision to attend the voter education drive. The data indicate that Mass Media has a moderate influence on the respondents' decision-making and ranks highest among the rest of the factors in terms of extent of influence. This may be due to the availability of televised announcements, radio broadcasts, and social media.

Table 8. Factors affecting the decision making of the respondents on attending for voter education drive

Question: Are you likely to be influenced by the following on attending voter education drive:	w$\bar{x}$	Verbal Equivalent	Extent of Influence
Mass Media	3.00	Sometimes	Moderate
Political Platform	2.90	Sometimes	Moderate
Church	2.85	Sometimes	Moderate
Social Affiliation	2.78	Sometimes	Moderate
Political Parties	2.75	Sometimes	Moderate
Profit/Incentive	2.75	Sometimes	Moderate
Personality Endorsement	2.75	Sometimes	Moderate
Family	2.72	Sometimes	Moderate
Charisma	2.54	Rarely	Low
Composite	2.78	Sometimes	Moderate

In today's digital age, young individuals seeking to engage in politics often leverage various forms of media, particularly the Internet, including social media platforms, to promote their causes and expand the reach of their organizations. As observed by Ma. Angela Teresa Sebastian in her piece "Are Filipino Youth Apathetic?" published in the Philippine Daily Inquirer on June 8, 2014, the dynamics of civic and political engagement have transformed in tandem with the rise of digital media. While youth utilize online platforms such as social networks to enhance engagement in civic and political affairs, the level of activity exhibited online does not always translate into offline participation. Senator Miriam Santiago echoed similar sentiments in her discussion on activism within social media platforms, emphasizing that despite the attention garnered by online protests, technology itself remains neutral, and the effectiveness of platforms like Twitter and Facebook is limited. Additionally, she highlighted that while "new media activism" may facilitate rapid mobilization, it does not necessarily sustain momentum in the long term, citing the "Million People March" as an example of a movement that failed to enact government reforms. However, according to the perceptions of the respondents, the factors outlined in Table 8 exert only a moderate influence on their decision to attend voter education campaigns. Consequently, this level of influence appears neither particularly strong nor exceptionally impactful.

3.9 Factors Affecting the Decision-Making of the Respondents on Filing for Candidacy during Elections

Table 9 illustrates the degree of influence exerted by various factors on the likelihood of young individuals deciding to run as candidates during elections. Notably, Political Parties emerges as the most influential factor among the nine listed. This finding aligns with the common practice wherein political parties actively recruit or persuade individuals to join their candidate rosters. An illustrative example of this phenomenon is the well-known case of President Rodrigo R. Duterte, who was strongly encouraged by PDP-Laban to run for the presidency. This instance underscores the significant role that political parties play in influencing individuals' decisions to seek candidacy.

Once again, this observation resonates with the principles outlined in the Mobilization Theory, which suggests that individuals' engagement in electoral politics can often be attributed to persuasion from others (Rosenstone & Hansen, 1993). In the Philippines, various elected positions are subject to specific age requirements. On election day, these requirements vary: candidates aspiring for roles such as Governor, Vice-Governor, and members of the Sangguniang Panlalawigan in highly urbanized cities are required to be a minimum of 23 years old. Similarly, individuals vying for analogous positions in component cities and municipalities must be at least 21 years old. For members of the Sangguniang Panglungsod, Sangguniang Bayan, and Sangguniang Barangay, including

Punong Barangay, the minimum age requirement is 18 years old. Additionally, candidates seeking to become Sangguniang Kabataan members should be between 15 and 21 years old. For Party-List Representatives (Sectoral representatives), the minimum age is 25 on election day, except for the youth sectoral representative, who must be between 25 and 30 years old. Additionally, individuals aspiring to become District Representatives in the Philippine Congress must be at least 25 years old on election day.

Table 9. Factors affecting the decision making of the on filing for candidacy during elections (n=379)

Questions: Are you likely to be influenced by the following on filing for candidacy during elections;	w$\bar{x}$	Verbal Equivalent	Extent of Influence
Political Parties	2.75	Sometimes	Moderate
Political Platform	2.56	Rarely	Low
Profit/Incentive	2.56	Rarely	Low
Mass Media	2.51	Rarely	Low
Family	2.47	Rarely	Low
Charisma	2.46	Rarely	Low
Church	2.34	Rarely	Low
Personality Endorsement	2.34	Rarely	Low
Social Affiliation	2.31	Rarely	Low
Composite	2.48	Rarely	Low

These age requirements align with the age brackets used in the current study to define youth as individuals between 18 and 30 years old. Therefore, if young individuals possess the necessary interests and qualifications, they are eligible to file for candidacy for various positions in the government. Nevertheless, in the current study, the overall extent of influence of the factors is still low, which means that these factors rarely affect the youth's decision to run for a political position.

To date, the predominant focus of research has been on explaining the disproportionate representation of older individuals in elected positions, often by examining either the attributes of younger cohorts or the structures of political institutions. Investigations recently carried out in the United States have indicated that the younger demographic tends to display reduced political aspirations. This is often attributed to their perceptions of elected officials as inefficient or crooked, a sense of disconnection from contemporary political processes, and a belief in their ability to effect change more effectively through alternative community-based methods, according to Shames (2017) and Lawless and Fox (2015).

Conversely, comparative analyses across nations have underscored institutional factors as primary contributors to the aging of governmental bodies. These factors include higher minimum age requirements for various elected positions, electoral systems favoring candidates with extensive experience and financial resources, and the absence or ineffectiveness of mechanisms such as youth quotas (McClean & Ono, 2024; Belschner & Garcia de Paredes, 2020). That being considered it could be argued that influencing young voters becomes a challenging task when they are inherently detached due to their distinct perspectives on political engagement.

4.10 Factors Affecting the Decision-Making of the Respondents on Reporting Election-Related Issues

Table 10 contains data that reveal the extent of influence of the factors affecting the youth's decision to report election-related issues to the authorities during campaign periods and Election Day. The highest in rank among the 9 factors that would likely influence the respondents' decision-making is Social Affiliation. This implies that group membership or being part of an organization can influence young people to report electoral anomalies.

For instance, the group or program called "Boto Mo, I-Patrol Mo," which was first popularized as a segment in the news program *TV Patrol* before it extended into a social media movement, created an avenue or outlet where citizens could come forward to "patrol" (meaning "report") their votes and foster clean elections. Being a "Boto Patroller" requires one to register and join the group's nationwide movement, which empowers and encourages the members to report observed anomalies. In other words, with "Boto Mo, I-Patrol Mo," people are urged to take notice of what is happening and then do something about it. It is, in a sense, "people power with new technology," according to Maria A. Ressa, managing director of ABS-CBN News and Public Affairs.

The Mobilization Theory acknowledges social networks as influential channels shaping citizen participation. However, the survey findings indicate that Social Affiliation or group belonging, among other factors, only exhibited a moderate influence, suggesting that its impact may not be sufficiently strong.

Table 10. Factors affecting the decision making of the respondents on reporting election related issues (n=379)

Question:Are you likely to be influenced by the following on reporting election related issues to the authority during campaign periods and election day;	w$\bar{x}$	Verbal Equivalent	Extent of Influence
Social Affiliation	3.02	Sometimes	Moderate
Political Platform	2.96	Sometimes	Moderate
Church	2.91	Sometimes	Moderate
Political Parties	2.88	Sometimes	Moderate
Charisma	2.83	Sometimes	Moderate
Profit/Incentive	2.74	Sometimes	Moderate
Family	2.65	Rarely	Low
Mass Media	2.53	Rarely	Low
Personality Endorsement	2.46	Rarely	Low
Composite	2.78	Sometimes	Moderate

4.11 Factors Affecting the Decision-Making of the Respondents in Joining a Political Party During Elections

As shown in Table 11, the extent of influence of the factors affecting the decision-making of the youth in terms of joining a Political Party is low. Thus, it can be inferred that the respondents' decisions to align with a political party during elections were not significantly influenced by any of the factors listed in the table. This lack of impact could possibly stem from the chaotic perception associated with Philippine political parties, which may have deterred the young electorate from engaging with them.

Table 11. Factors affecting the decision making of the respondents in joining a political party during elections

Are you likely influenced by the following on joining a political party during elections;	w$\bar{x}$	Verbal Equivalent	Extent of Influence
Mass Media	2.26	Rarely	Low
Profit/Incentive	2.24	Rarely	Low
Church	2.21	Rarely	Low
Family	2.17	Rarely	Low
Political Parties	2.15	Rarely	Low
Charisma	2.14	Rarely	Low
Personality Endorsement	2.11	Rarely	Low
Social Affiliation	2.00	Rarely	Low
Political Platform	1.98	Rarely	Low
Composite	2.14	Rarely	Low

As Rocamora (1998) noted, Philippine political parties carried negative associations, particularly during the 1990s. They were viewed as feeble entities utilized by the biased upper classes as tools for advancing their own agendas, rather than serving as advocates for the interests of the impoverished and marginalized. Despite comprising predominantly young individuals from rural areas, most political parties adhered to the ideologies of the elite, leaving the populace yearning for meaningful political change during this period.

4.0 Conclusion

The conclusions drawn from the study emphasize several key findings. First, civic education initiatives demonstrate a positive impact on young voters' registration and intent to participate in elections, indicating the significance of early engagement in fostering informed citizenship. However, challenges such as time constraints, disillusionment with politics, and lack of education about political participation persist among young people. Next, gender and economic status do not significantly influence youth mobilization and participation in elections, and religion also has a limited impact on civic and political engagement, irrespective of individuals' faith or church involvement. Additionally, voter registration does not necessarily correlate with active political engagement, as other forms of participation exist that do not require voter registration. The influence of factors affecting voting

decisions varies among respondents, possibly due to demographic differences, highlighting the need for tailored engagement strategies. Despite advancements in information technology and media outreach, youth motivation for political engagement remains fragile, and politicians often fail to genuinely value youth contributions.

Moving forward, policymakers and organizations should recognize the diverse factors influencing youth engagement and develop tailored strategies to address them. Empowering youth leadership, enhancing education and awareness, and promoting diversity and inclusion are crucial steps in fostering meaningful youth participation in politics. Political leaders and government agencies need to reevaluate their approaches to engaging youth, ensuring that initiatives resonate with young people and effectively capture their interest. Overall, while strides have been made in promoting youth participation in politics, persistent challenges and gaps in engagement strategies remain, emphasizing the need for ongoing innovation and adaptation in youth mobilization efforts.

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All authors declare that they have no conflicts of interest

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9.0 References

- Aboejo, F. T. (2015). The Veracity of vote Buying: Perspectives of the Philippine Electoral system. *International Journal on Graft and Corruption Research*, 2(1), 36–45. <https://doi.org/10.7719/ijgc.v2i1.301>
- Belschner, J., & De Paredes, M. G. (2020). Hierarchies of Representation: the re-distributive effects of gender and youth quotas. *Representation*, 57(1), 1–20. <https://doi.org/10.1080/00344893.2020.1778510>
- Bergh, J., Christensen, D. A., & Matland, R. E. (2019). When is a Reminder Enough? Text Message Voter Mobilization in a European Context. *Political Behavior*. <https://doi.org/10.1007/s1109-019-09578-1>
- Berson, M. J., Rodríguez-Campos, L., Walker-Egea, C., Owens, C., & Bellara, A. P. (2013). Youth Engagement in Electoral Activities: A collaborative evaluation of a civic education project. *Journal of Education and Training Studies*, 2(1). <https://doi.org/10.11114/jets.v2i1.243>
- Connell, R. W. (1971). The child's construction of politics. (No Title).
- Delli Carpini, M. X. (2000). Gen. com: Youth, civic engagement, and the new information environment. *Political communication*, 17(4), 341–349.
- Dikshit, S. (2024). Voices of the Nation: Indonesia Prepares for the 2024 Election. Retrieved from: https://jgu.s3.ap-south-1.amazonaws.com/jsia/Shivangi+Dikshit_Voices+of+the+Nation+Indonesia+Prepares+for+the+2024+Election.pdf
- Erpyleva, S. (2021). Active citizens under Eighteen: minors in political protests. *Journal of Youth Studies*, 24(9), 1215–1233.
- Frisco, M. L., Muller, C., & Dodson, K. (2004). Participation in voluntary Youth-Serving Associations and early adult voting behavior*. *Social Science Quarterly*, 85(3), 660–676. <https://doi.org/10.1111/j.0038-4941.2004.00238.x>
- Gainous, J., & Martens, A. M. (2012). The effectiveness of civic education: Are “good” teachers actually good for “all” students?. *American Politics Research*, 40(2), 232–266.
- Galston, W. A. (2004). Civic education and political participation. *PS: Political Science & Politics*, 37(2), 263–266.
- Ginting, I. R. B., & Fauzan, I. (2024). The Involvement of the Karya Youth Bond in the Election of Candidates in the 2020 Karo Regency Regional Head Election. *Journal Elections and Political Parties*, 1(1), 1–13.)
- Glasford, D. E. (2008). Predicting voting behavior of young adults: the importance of information, motivation, and behavioral skills. *Journal of Applied Social Psychology*, 38(11), 2648–2672. <https://doi.org/10.1111/j.1559-1816.2008.00408.x>
- Greenstein, F. I. (1970). Children and politics. <https://ci.nii.ac.jp/ncid/BA6798875X>
- Henn, M., Weinstein, M., & Wring, D. (2002). A generation apart? Youth and political participation in Britain. *The British Journal of Politics and International Relations*, 4(2), 167–192. <https://doi.org/10.1111/1467-856x.t01-1-00001>
- Hess, R. D., & Torney, J. V. (1967). The development of political. *Political Socialization*, 64.
- Institute for Social and Economic Research. (1995). Freedom’s children: work, relationships and politics for 18–34 year olds in Britain today - Institute for Social and Economic Research (ISER). Institute for Social and Economic Research (ISER). <https://www.iser.essex.ac.uk/research/publications/publication-493580>

- Iyengar, S., and S. Jackman. 2003. Technology and Politics: Incentives for Youth Participation. Paper presented at the International Conference on Civic Education Research, New Orleans, November 16- 18, 2003
- Jennings, M. K., & Niemi, R. G. (2015). Political character of adolescence: the influence of families and schools. In Princeton University Press eBooks. <https://doi.org/10.1515/9781400868797>
- Kelso, T., & Cogan, B. (2009). Mosh the polls: youth voters, popular culture, and democratic engagement. *Choice Reviews Online*, 46(09), 46-5314. <https://doi.org/10.5860/choice.46-5314>
- Kimberlee, R. (2002). 'Why Don't Young People Vote at General Elections?', *Journal of Youth Studies*, Vol. 5 (1): 85-97.
- Kitchen, N. (n.d.-b). Democratisation & new voter mobilisation in Southeast Asia: beyond machine politics?: reformism, populism and Philippine elections - LSE Research Online. <http://eprints.lse.ac.uk/id/eprint/43564>
- Lawless, J. L., & Fox, R. L. (2015). Running from Office: Why Young Americans are Turned Off to Politics. <http://ci.nii.ac.jp/ncid/BB18905072>
- McClean, C. T., & Ono, Y. (2024). Too Young to Run? Voter Evaluations of the Age of Candidates. *Political Behavior*. <https://doi.org/10.1007/s11109-024-09920-2>
- Miller, K., Shramko, M., Brown, C., & Svetaz, M. V. (2021). The election is over, now what? Youth civic engagement as a path to critical consciousness. *Journal of Adolescent Health*, 68(2), 233-235. <https://doi.org/10.1016/j.jadohealth.2020.10.033>
- Mortensen, C. R., & Cialdini, R. B. (2020). Compliance and Social Psychology. In *Oxford Research Encyclopedia of Psychology*.
- Mulgan, G. & Wilkinson, H. (1995) *Freedom's Children: Work, Relationships and Politics for 18-34 Year-olds in Britain Today*.
- Olajide, O. E., Adaja, O. V., & Ojoogun, K. M. (2022). Youth Engagement and Good Governance in Nigeria: The New Normal World. *International Journal of Social Development and Growth*, 3(1), 18-31.
- Pacheco, J. S. (2008). Political socialization in context: The effect of political competition on youth voter turnout. *Political Behavior*, 30, 415-436.
- Park, A. (1998). *Young People's Social Attitudes 1998: Full Report of Research Activities and Results*. ESRC, Keele
- Pastarmadzhieva, D., Pastarmadzhieva, D., & Sakal, H. B. (2021). Participatory attitudes and electoral behavior of young people: The cases of Turkey and Bulgaria. *Acta Politologica*, 13(3), 1-23. https://doi.org/10.14712/1803-8220/2_2021
- Philippine Constitution (1985). Article V (Suffrage).
- Putnam, R. D. (2000). Bowling alone: the collapse and revival of American community. *Choice/Choice Reviews*, 38(04), 38-2454. <https://doi.org/10.5860/choice.38-2454>
- Rocamora, J. (1998). Philippine political parties, electoral system and political reform. *Philippines International Review*, 1(1), 1-10.
- Rosenstone, S. J., & Hansen, J. M. (1993). Mobilization, participation, and democracy in America. <http://ci.nii.ac.jp/ncid/BA24832089>
- Sapiro, V. (1998). Feminist studies and political science and vice versa. In *Oxford University Press eBooks* (pp. 67-90). <https://doi.org/10.1093/oso/9780198782063.003.0004>
- Shames, S. L. (2017). Out Of the Running: Why millennials reject political careers and why it matters. <https://muse.jhu.edu/book/56450>
- Shea, D., & Green, J. (2007). Local Parties and Mobilizing the Vote: The Case of Young Citizens. *The State of the Parties: The Changing Role of Contemporary American Politics*, 217.
- Torney-Purta, J. (2000). Comparative Perspectives on Political Socialization and Civic Education Citizenship Education and the Modern State. *Kerry Kennedy Citizenship and Citizenship Education in a Changing World*. Orit Ichilov *Roots of Civic Identity: International Perspectives on Community Service and Activism in Youth*. Miranda Yates, James Youniss *Morality and Citizenship in Education*. John Beck. *Comparative Education Review*, 44(1), 88-95. <https://doi.org/10.1086/447593>
- Walker, A. (2006). Aging and politics: An international perspective. In *Handbook of aging and the social sciences* (pp. 339-359). Academic Press.
- Wattenberg, M. (2020). Is voting for young people? In *Routledge eBooks*. <https://doi.org/10.4324/9781003030935>
- White, C., Bruce, S., & Ritchie, J. (2000). Young People's Politics: Political interest and engagement amongst 14-24 year olds. <https://ci.nii.ac.jp/ncid/BA61128001>
- Yates, M., & Youniss, J. (Eds.). (1999). *Roots of civic identity: International perspectives on community service and activism in youth*. Cambridge University Press.
- Zhu, Claire. 2021. "A Study for Improving Youth Voter Participation." *APSA Preprints*. doi: 10.33774/apsa-2021-2lpj8. <https://preprints.apsanet.org/engage/apsa/article-details/60ccf435461f565f0f47a4be>

Building a Path to Sobriety: Challenges and Strategies of Rehabilitation Workers in the Aftercare Process of Substance-Abuse Individuals

Edmar Jane P. Cerna*, Nica Ella B. Acebo, Daryll T. Dingal, Jhade R. Villarde, Darwin F. Ignacio
Notre Dame of Dadiangas University, General Santos City, South Cotabato, Philippines

*Corresponding Author email: ejanecerna@gmail.com

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Abstract. Rehabilitation workers contribute to sustaining the sobriety of substance-abuse individuals who have finished their formal treatment by delivering the aftercare process. The study explored the challenges and strategies of rehabilitation workers in the aftercare process of substance-abuse individuals. The researchers utilized the phenomenological research design to describe the challenges faced by the rehabilitation workers in the aftercare process of substance-abuse individuals and the strategies they employ as well. The researchers interviewed nine rehabilitation workers at the JJ Valderrama Behavioral Management Center in Davao City. Utilizing the thematic analysis approach created by Virginia Braun and Victoria Clarke, the results revealed various challenges that rehabilitation workers face: manpower shortage and other implications, clients' commitment to aftercare, handling deception, unforeseen circumstances, maintaining professional roles, and existing workers' limitations. Further, implementing treatment program activities, incorporating various counseling therapies, collaborative approaches, skills, and insight-driven approaches, emanating warmth, personality, and individualized approaches, and exhausting all efforts emerged as the strategies employed. The findings suggested that while rehabilitation workers assist clients, they are also human beings with limitations. Additionally, workers must utilize strategies and adjust when things do not go as planned, as recovery is a complex process. Aftercare is of paramount importance in building the path toward sobriety.

1.0 Introduction.

The path to sobriety, as experienced by substance-abuse individuals, is built upon the assiduous hands of rehabilitation workers. As stated by De Costa (2019), rehabilitation workers assist in improving the effectiveness of drug rehabilitation, decreasing drug-related deaths, reducing drug charges, and maintaining the sobriety of drug-abuse patients. However, according to American Addiction Centers Editorial Staff (2023), a lot of effort and time is required to assist patients in achieving sobriety. It is then crucial that the workers understand their role in treating substance abuse, given that the road to recovery is often complex ("Social Work and Substance Abuse," 2023; Felman, 2018). When challenges arrive in the work lives of rehabilitation workers, the call to employ strategies also arises.

Moreover, aiming for a prolonged recovery is generally complex because drug addiction, for instance, can be persistent and long-lasting, involving repeated relapses and behaviors. Depending on the duration and intensity of the addiction, recovering and abstaining from the substance can take several months or even years (Coast, 2015). Here, the essence of the aftercare process comes to exist. The aftercare process is an outpatient service delivered by rehabilitation workers to those who have finished inpatient treatment. Its primary goals are to help those in recovery to stay abstinent and help facilitate reintegration into their families and communities (Elias, 2017).

Workers in rehabilitation centers help individuals sustain treatment progress by achieving the goals of the aftercare process.

Further, performing the obligations of rehabilitation workers remains arduous. Specifically, rehabilitation workers must also meet the demand for consistent, proper treatment until the aftercare process is delivered. In addition, they also have to meet the need for stable and healthy minds, as the study by Lamb and Cogan (2016) stated that excessive job stress on mental health workers could cause mental illnesses affecting both the individual and the more significant population. According to Bizzarri et al. (2020), most of the employees working in psychiatric centers frequently encounter verbal aggression, physical aggression, and injuries at clients' hands. In implementing the aftercare process, coping with work-related emotional, physical, or mental issues is essential.

In the Philippines, rehabilitation workers face several challenges in the aftercare process of substance-abuse individuals, including a lack of social support and a high risk of relapse. The study of Tuliao and Liwanag (2011) attributed predictors such as high levels of drug cravings and negative emotions toward relapse among male methamphetamine users exclusively. Similarly, Samson (2021) found how internal factors affect the aftercare program of drug dependents by linking persistent feelings of deep sadness and negative thoughts toward the occurrence of relapse. Additionally, the deficiency in the participation of aftercare patients in San Jose Del Monte Bulacan, explored by Villegas (2022), is another challenge rehabilitation workers face in the aftercare process. Accordingly, being on the front line of treatment facilities, rehabilitation practitioners closely encounter challenges in the aftercare process.

Consequently, according to Lamb and Cogan (2016), rehabilitation workers use strategies to address identified challenges in the aftercare process and combat the negative consequences of work risks. In the scope of mental health workers, resilience is one of the essential elements of strategies to address stressors in their chosen field. The development and maintenance of resilience in mental health professionals may also be paid for by training programs that include elements of recent advances like acceptance and responsibility training and mindfulness (Lamb & Cogan, 2016). In terms of training, Antonio et al. (2019) discovered that pretest and posttest scores of nurses, psychologists, and social workers who took an accreditation course covering drug dependence understanding, assessment, drug abuse and dependence management, and drug rehabilitation work differ. Strategies like pursuing knowledge equip them with skills to make their work manageable and help individuals achieve sobriety.

As the study aimed to explore the experiences of rehabilitation workers in JJ Valderrama Behavioral Management Center, an accredited drug-treatment facility in Davao City, it highlighted the locale context of the challenges and strategies employed in building a path toward sobriety for substance abuse individuals. As long as the rehabilitation workers continue to perform their calling profession, any enlightened discoveries by the current study would bring fruitful insights to mental health advocates in establishing a sound community where commitment to help across all ages prevails. Indeed, conducting a study among rehabilitation workers is essential as they have their journeys to explore and stories to tell.

2.0 Methodology

2.1 Research Design

This study used a qualitative research design emphasizing a phenomenological approach to achieve its goals. Ho and Limpaecher (2022) expounded that this research design describes and strives to understand a phenomenon in its universal essence. The research design helped the researchers study the lived experiences of rehabilitation workers. Specifically, through it, the researchers aimed to provide accurate descriptions of rehabilitation workers' challenges in delivering aftercare to substance-abuse individuals. Similarly, the study explores their strategies.

2.2 Research Participants

The researchers utilized homogenous purposive sampling to determine the research participants in this study. In non-probability or judgment sampling, the researchers purposively chose a particular group of participants because they have attributes or characteristics necessary for answering the research questions (Frost, 2022). Due to the narrowly defined subpopulation, the researchers interviewed nine (9) rehabilitation workers during the data gathering. The researchers set specific characteristics for the target participants. The participants of the study

are the selected rehabilitation workers at JJ Valderrama Behavioral Management Center, an accredited drug-treatment facility in Davao City, who are actively involved in the aftercare process of substance-abuse individuals. Their involvement may be direct, such as delivering clinical operations, or indirect, such as facilitating and monitoring individuals' aftercare progress. In addition, they must be 23-60 years old. Furthermore, they must have worked as rehabilitation workers in the center that delivers the aftercare process for at least six (6) months. The researchers did not include any potential participants working in public rehabilitation centers. In addition, the researchers did not include the target participant who has transferred to a department that does not have direct or indirect involvement in the aftercare process.

2.3 Research Instrument

The researchers gathered the necessary data through semi-structured face-to-face interviews. A semi-structured interview is one of the standard data collection methods, which enables the researchers to collect unstructured data, examine participant perceptions of the research topic, and ask open-ended questions (Busetto et al., 2020). This approach often involves a conversation between the researcher and the respondent, aided by a flexible interview process and expanded by follow-up inquiries, questions, and remarks. The researchers utilized an interview guide as the primary investigative tool for the study. The research tool consisted of 10 questions. Five-item questions seek to identify the strategies, and the other five questions focus on the challenges faced by rehabilitation professionals. Moreover, three credible professionals, an experienced rehabilitation worker, a psychologist, and a guidance counselor, validated the research questionnaire. The researchers conducted face-to-face interviews with the participants at the workplace.

2.4 Data Gathering Procedure

Initially, the researchers sent a letter to the chosen rehabilitation center to gather initial information about their possible participants through a pre-survey. Through online communication, the researchers had a preliminary assessment that gathered employed rehabilitation workers' initials, ages, and years of experience. Then, they drafted an interview guide questionnaire that aided the individual interview as they sought to explore the challenges faced by rehabilitation workers and their strategies during the delivery of the aftercare process for substance-abuse individuals. Credible professionals validate the research instrument before they can utilize it in the study. Next, the researchers made a letter of approval to perform the research at the specific rehabilitation center. Moving forward, the participants signed the informed consent form, ensuring their participation was voluntary. The selected participants answered the researchers' questions using the validated instrument. They participated individually in the semi-structured interview, which took place in the rehabilitation center. Lastly, after obtaining the needed data, the researchers analyzed the gathered data through the Thematic Analysis.

2.5 Ethical Considerations

The researchers followed ethical considerations during the study, as Ignacio (2023) suggested. The researchers secured the participants' information, keeping all data collected, including personal profiles and responses, confidential and anonymous. They did not share nor distribute this information unless the respondents agreed. During the interview, the researchers explained the purpose of the study and how the participants could withdraw from the study at any point. The researchers believe informed consent empowered rehabilitation workers to make an informed decision to participate without feeling forced or scared of any negative consequences.

3.0 Results and Discussion

3.1 Challenges in the Aftercare Process of Substance-abuse Individuals

The study investigated the challenges that rehabilitation workers face in delivering the aftercare process. After the analysis of gathered data, six themes appeared to be what rehabilitation workers are challenged with namely, achieving clients' sobriety, manpower shortage and other implications, client's commitment to aftercare, handling deception, dealing with unforeseen circumstances, maintaining professional roles, worker's limitations to meet client's needs.

Theme 1: Achieving Clients' Sobriety

Rehabilitation workers are bound to encounter various challenges during the aftercare process. One of these is achieving a client's sobriety, which may encompass individuals' self-control, cravings, and temptations, lack of support system, and family as triggers, and substance as triggers, all of which pose significant threats to clients'

sobriety. Comparably, a study revealed that following detoxification and inpatient rehabilitation, individuals in recovery reintegrate into their regular lives; still, these facets of daily life can serve as potential triggers for cravings and temptations (Addiction Center, 2023). In a study by Parker et al. (2021), participants often faced significant challenges in their daily lives that tested sobriety. They described how the pull of familiar people and places could trigger past addictive behaviors, making this an ongoing challenge in their quest for long-term sobriety. It necessitated constant dedication, vigilance, and awareness of potential threats to their recovery journey. Spending time with patients who cause unhappiness, including coworkers, friends, family, or others, can significantly raise the risk of relapse, as it can trigger feelings of discontent and vulnerability (Hill, 2023). The ongoing existence of these challenges, including the triggers associated with specific individuals and environments, can create significant hurdles for rehabilitation workers in aiding individuals on their journey to recovery.

Theme 2: Manpower Shortage and other Implications

Aftercare programs must implement essential measures to safeguard the well-being of both clients and staff members throughout the treatment process. The results showed that the lack of case managers, implementing aftercare programs, and legal implications are significant obstacles that rehabilitation workers encounter during the aftercare process for substance abuse individuals. Similarly, Sereta et al. (2016) uncovered a substantial issue within rehabilitation centers; 73.6% of the problems were due to understaffing and an overloaded workforce. In addition to financial constraints, both staff and patients felt the impact of overcrowding, inadequate recreational facilities, and poor infrastructure, ultimately resulting in some patients prematurely discontinuing their prescribed treatments. Closely related to the finding of this study, a standard safety and security concern encountered in related programs is the arrival of clients under the influence of drugs or alcohol, posing a potential risk to the institution (Center for Substance Abuse Treatment, 2006). The combined challenges of manpower shortages straining resources, the complexity of implementing effective aftercare programs, and the added intricacy of legal implications underscore the daunting task rehabilitation center workers face in ensuring their clients' successful recovery.

Theme 3: Clients' Commitment to Aftercare

One of the challenges that rehabilitation workers face is ensuring individuals' commitment to the aftercare process. Sustaining sobriety can be difficult when non-appearance, failure of report, loss of contact, and unfinished treatment exist. In comparison, Daigre et al. (2021) discovered a progressive rate of dropouts until the six-month follow-up in their investigation of treatment adherence and abstinence of outpatients with Substance Use Disorders. Further, it is an unfortunate reality that due to Substance Use Disorder's chronic nature, dropouts are more likely to be encountered than clients finishing treatment (Brorson et al., 2013; Syan et al., 2020). Commitment can make or break it in helping individuals achieve long-term sobriety through the aftercare process.

Theme 4: Handling Deception

An Intensive Outpatient Therapy counselor and a client build the foundation of their therapeutic bond on compassion, trust, and a genuine dedication to the client's journey to recovery. Researchers found that rehabilitation workers encounter difficulties when clients are being defensive, lying, being secretive, and making up excuses to conceal certain aspects of their lives. Addiction and dishonesty are closely linked in some instances, as dependence relies on lying and deception, increasing the risk of relapse and harm to personal relationships. The situation poses a significant threat to a client's recovery, as it reinforces negative habits involving lying, secrecy, and denial to avoid the discomfort associated with honesty in addiction (The Impact of Honesty Recovery, 2021). Similarly, in a comprehensive study of psychotherapy clients, Farber (2019) found that many admitted to being untruthful or holding back information about substance use, confirming earlier reports on the seriousness of this clinical issue. When clients are defensive, lying, or making excuses, it can hinder the development of an open and honest therapeutic relationship, making it more challenging to address the root issues during the aftercare process.

Theme 5: Dealing with unforeseen circumstances

Substance-Abuse individuals return home upon finishing the formal treatment while still fulfilling the plans they have designed with the rehabilitation workers, which is integral to the aftercare process. When they report back, rehabilitation workers are uncertain, particularly the activities outside that are out of their control and may have disturbed the patient's sobriety. In fact, in the year 2015, reported readmissions in government residential facilities

reached a rate of 20%, implying that receiving a formal recovery program for illegal substance abuse does not guarantee sustained sobriety upon going out. Moreover, Lifetime Recovery (2021) affirmed that coming across substance use triggers is inevitable, and rehabilitation workers do not have control over situations, such as their clients giving in to these triggers when they are outside of the rehabilitation center's premises.

Theme 6: Maintaining professional roles

In extending the recovery treatment towards the aftercare process, upholding a professional stand appeared challenging for rehabilitation workers. In one qualitative study by Sang et al. (2022), professionals identified limitations stemming from imposed regulation and stigma as barriers to recovery treatment. Similarly, this study discovered that rehabilitation workers must carefully deal with personal biases, restricted actions, and others. Despite the need to deliver ethical and professional services, it is often difficult to achieve professional boundaries between practitioners and clients (Fronek et al., 2009). As stated by Plaut (2011), the ability to establish and maintain professional boundaries also depends on the rehabilitation workers' degree of awareness of the impact of their behavior, their needs, and how vulnerable they can become. Regardless of the competencies possessed, internal and external factors make it challenging for rehabilitation workers to maintain their professional roles.

Theme 7: Workers' Limitations to meet client's needs

Rehabilitation workers should possess the skills needed to deliver aftercare services for substance-abuse individuals post-treatment. The World Health Organization emphasized how rehabilitation facilities need workers capable of effectively promoting and providing treatment to individuals. Contrastingly, the results showed that existing workers' limitations were a challenge for workers in extending the maximum help individuals or their clients need. Certain conditions often limit rehabilitation workers' abilities to cover client's concerns beyond what they can offer. In comparison to the study by Legha et al. (2014), socioeconomic challenges like unmet basic survival needs hinder the pursuance of treatment. Clients desire to prioritize other needs, such as occupation, yet these are beyond what rehabilitation workers can assist.

3.2 Strategies in the Aftercare Process of Substance-Abuse Individuals

The study also explored the strategies that rehabilitation workers employ in offering aftercare services to substance-abuse individuals. This subsection justifies the following seven themes that emerged after careful analysis.

Theme 1: Implementing treatment program activities

Rehabilitation workers frequently face the challenge of achieving clients' sobriety, which links to a lack of self-control, cravings, temptations, and lack of support, family triggers, and substance triggers. Nevertheless, rehabilitation workers create initiatives and action plans that assist clients in making progress and avoiding relapse, including creating aftercare plans, adjusting treatment plans, setting clear goals, utilizing workbooks, seeking feedback, and keeping in contact. Editorial Staff (2023) of American Addiction Centers states that aftercare is any ongoing care patients receive upon completing treatment. 12-step meetings, counseling, outpatient treatment, and sober living are the most popular formats. Additionally, one example is the aftercare support program of a group from a Florida-based drug and alcohol addiction treatment facility called Palm Partners, where patients learn to recognize their respective and particular relapse signs and symptoms and provide assistance in creating effective treatment plans. The group's aftercare support assists patients in learning how to manage stress and resolve issues in their personal lives (Palm Partners, 2015). Developing an aftercare plan allows workers to anticipate future client sobriety challenges and develop solutions. Rehabilitation workers establish programs and strategies requiring careful planning and adaptability to ensure effective patient-centered care.

Theme 2: Incorporating Various Counseling Therapies

Incorporating various counseling therapies offers a structured and evidence-based approach to help individuals recover from addiction and maintain their sobriety, addressing the challenge of achieving clients' sobriety due to cravings, temptations, lack of self-control, lack of support, and having family and substance triggers. As stated by Yue and Pena (2022), to effectively deliver addiction treatment, incorporating addiction psychotherapy is crucial. There is a wide range of addiction therapy options available and administered in person or online, tailored to the individual's preferences and needs. The group enables clients to identify and overcome potential barriers to developing a recovery lifestyle through follow-ups combining group therapy, coaching, education, peer

interaction, and homework. Also, according to Antonio (2023), workers collaborate with clients to create customized aftercare plans to help patients develop the skills and strategies to maintain sobriety and achieve long-term recovery. This situation has shown the value of applying therapies in improving the lives of countless individuals, making this approach invaluable in providing emotional support, identifying underlying causes, and equipping individuals with the skills needed for lasting sobriety.

Theme 3: Collaborative approaches

Rehabilitation workers collaborate to tackle significant challenges like the lack of case managers, implementing aftercare programs, and navigating legal implications in the aftercare process for individuals with substance abuse issues. Through collaborative efforts and group discussions, these professionals develop strategies that educate, nurture, support, and prioritize the safety of clients and the institution. Comparably, Antonio (2023) emphasizes a team approach, collaborating with clients and their families, fostering a sense of community for shared experiences and recovery support. This collective approach extends to diverse healthcare professionals collaborating to deliver high-quality care and interventions for patients and their families, as Davidson et al. (2022) highlighted. Adopting collaborative care initiatives by large healthcare systems and organizations, as emphasized by Reist et al. (2022), leads to improved treatment outcomes and heightened satisfaction for providers and patients. At the same time, the findings of Marchand et al. (2019) stress the importance of individualized aftercare plans tailored to clients' unique needs and goals. Ultimately, the goal is to reduce substance use and improve the lives of individuals. These strategies, rooted in collective efforts and interprofessional collaboration, not only elevate patient outcomes but also signify a growing trend in healthcare systems, showcasing their effectiveness in addressing the multifaceted needs of individuals with substance abuse disorders.

Theme 4: Skills and insight-driven approaches

The skills and insight-driven approach use reflective sessions, allowing individuals to gain insight into their addiction, triggers, and coping strategies. Rehabilitation workers use reflective listening to facilitate self-exploration, mirroring Roger's belief in self-discovery as a transformative process. Skills and insight-driven approaches also utilize identifying strengths and weaknesses, sharing insights, and giving suggestions, which provides a clear roadmap for individuals in recovery that plays a crucial role in their journey towards sobriety and a healthier life. This situation integrates Roger's (1940) client-centered goal setting, where the clients will focus on their self-concept and self-actualization. Individuals are encouraged to take ownership of their recovery, making it a deeply personal and meaningful process. Implementing a skill and insight-driven approach can enhance clients' commitment to aftercare. By developing practical skills for coping with triggers and stress and gaining insights into their behavior, clients are better equipped to navigate challenges post-treatment. This strategy fosters long-term resilience and empowers clients to actively engage in their aftercare actively, promoting sustained recovery.

Theme 5: Emanating warmth personality

Rehabilitation workers continuously foster a culture that values the client as an individual, genuinely caring for and making clients feel comfortable through approachable behavior. The researcher found that rehabilitation workers express warmth through empathy, unconditional positive regard, establishing rapport, and continuing support. According to Riess (2010, as cited in Moudatsou et al., 2020), research has shown that empathy is a pivotal factor in enhancing mental health outcomes and comprises a fundamental element of the therapeutic relationship between healthcare providers and their patients. Furthermore, better therapeutic outcomes happen due to a health professional's empathy (Hojat et al., 2001, as cited in Moudatsou et al., 2020). The dedication of rehabilitation professionals to treating every client as an individual and establishing a welcoming, compassionate, and encouraging atmosphere highlights the personality's critical role in promoting therapeutic relationships and the more general domains of relationships and health. Emanating a warm personality serves as a strategic approach to managing clients' deception during the aftercare process for individuals recovering from substance abuse. This compassionate stance fosters trust, encouraging clients to truthfully open up about their challenges. Creating a supportive atmosphere enhances the therapeutic relationship and contributes to a more effective aftercare process, ultimately supporting sustained recovery.

Theme 6: Individualized Approaches

Substance abuse is a deeply personal and complex issue, with each patient having a unique set of needs, challenges, and circumstances. As Marchand et al. (2019) agreed, individualized needs assessment and treatment delivery come together, providing comprehensive and flexible care tailored to the client's unique needs and values. This approach also considers the whole person, recognizes the impact of trauma, respects cultural diversity, and ensures that care is relevant and suitable. In comparison, Hilton and Pilkonis (2015) found that measures should have the ability to adjust or extend without imposing a substantial additional burden to effectively cater to the specific needs of patients in recovery and address conditions that may worsen the situation, such as physical health issues or enduring psychiatric conditions. Overall, an individualized approach recognizes the uniqueness of each patient and tailors treatment to their specific needs and circumstances.

Theme 7: Exhausting all Efforts

Rehabilitation workers have acknowledged that, at some points, they struggle to meet the client's demands due to their finite capabilities. Nevertheless, this recognition entails the driving force to make the best of what they have by exhausting all efforts. In a study by Muthelo et al. (2023), the limited resources for the prevention, treatment, and recovery and active efforts of stakeholders combatting substance abuse in rural communities are of utmost importance. Maximizing all possibilities allows rehabilitation workers to remain positive in extending the client's sobriety. Maintaining professional boundaries also relies on the rehabilitation workers' efforts to maintain their commitment (Legha et al., 2014). However, in contrast to the presented studies, Manuel et al. (2017) have highlighted how patients, despite workers exhausting all means, specifically considered access to community resources as one of the facilitators of a successful transition from long-term residential substance abuse treatment.

4.0 Conclusion

The study aimed to highlight the challenges met by rehabilitation workers that are associated with aftercare for substance-abuse patients. During formal treatment, patients benefit from a secure and structured environment supporting their recovery. However, the transition to the real world has numerous temptations and triggers that pose a constant threat to their newfound sobriety. The challenging experiences of rehabilitation workers are achieving clients' sobriety, manpower shortage, other implications, clients' commitment to aftercare, handling deception, dealing with unforeseen circumstances, maintaining professional roles, and workers' limitations to meet client's needs. Following the Goal-Setting theory, rehabilitation professionals are eager to assist people who abuse substances despite the difficulties they face. This increases their perseverance in carrying out tasks and engaging with clients to motivate them to set and achieve goals and become committed to empowering clients in their recovery. Though driven by internal pressure, concepts of Organismic Integration theory support that rehabilitation workers nevertheless perform the value and importance of a particular activity, performing the task willingly even though it may not be intrinsically enjoyable.

Exploring the strategies of rehabilitation workers in providing aftercare services to substance-abuse patients is another objective that the study sought to achieve. They are instrumental in addressing potential challenges that may compromise the overall effectiveness of the rehabilitation center. Rehabilitation workers ensure clients can achieve and sustain their recovery by incorporating various counseling therapies, using individualized approaches, and applying collaborative practices. Moreover, as Person-Centered theory has outlined, rehabilitation professionals, in that instance, demonstrated their empathy, allowed themselves to become role models, and created a secure, nurturing environment where patients could discuss their challenges and emotions without fear of being judged. This study has the potential to inform policies, improve the quality of care, reduce stigma, and contribute to more effective and holistic approaches to addiction treatment on both individual and societal levels. It becomes evident that effective aftercare services are of paramount importance within rehabilitation centers as they not only assist in the practical aspects of behavior change but also serve as the path toward sobriety.

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The authors confirm the equal contribution in each part of this work. All authors reviewed and approved the final version of this work.

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7.0 Conflict of Interests

All authors declare that they have no conflicts of interest

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9.0 References

- American Addiction Centers Editorial Staff. (2023). Drug Abuse Careers.
- Antonio, C. a. T., Guevarra, J. P., Cavinta, L. L., Cabrera, P. J. D. L., Castillo, E. C., Hembra, M. S., Fuderanan, C. H., Reyes-Sare, M. L., & Vista, S. B. D. (2019). The Philippine Experience on the 'Basic Training Course for Rehabilitation Workers on the Assessment and Management of Drug Dependence', 2013–2016. *International Journal of Training Research*, 17(2), 187–198. doi: 10.1080/14480220.2019.1644784
- Antonio, S. D. (2023). Conservative Daily News: Drug addiction aftercare.
- Bizzarri, J. V., Piacentino, D., Kotzalidis, G. D., Moser, S., Cappelletti, S., Weissenberger, G., ... & Conca, A. (2020). Aggression and violence toward healthcare workers in a psychiatric service in Italy: A retrospective questionnaire-based survey. *The Journal of Nervous and Mental Disease*, 208(4), 299–305.
- Brorson, H. H., Arnevik, E. A., Rand, K., & Duckert, F. (2013). Drop-out from Addiction Treatment: A Systematic Review of Risk factors. *Clinical Psychology Review*, 33(8), 1010–1024. doi: 10.1016/j.cpr.2013.07.007
- Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice*, 2(1). doi: 10.1186/s42466-020-00059-z
- Center for Substance Abuse Treatment. (2006). Clinical Issues, Challenges, and Strategies in Intensive Outpatient Treatment. In *Treatment Improvement Protocol*.
- Coast, J. E. (2015). After Addiction Treatment.
- Davidson, A., Kelly, J. T., Ball, L., Morgan, M., & Reidlinger, D. P. (2022). What do patients experience? Interprofessional Collaborative Practice for Chronic Conditions in Primary Care: an Integrative review. *BMC Primary Care*, 23(1). doi: 10.1186/s12875-021-01595-6
- De Costa, A. S. (2019). Drug Rehabilitation: Is it effective in decreasing the drug epidemic on Long Island, New York [Long Island University]. In *Digital Commons @ LIU*.
- Daigre, C., Rodríguez, L. P., Roncero, C., Palma-Álvarez, R. F., Perea-Ortueta, M., Sorribes, M., Martínez-Luna, N., Ros-Cucurull, E., Ramos-Quiroga, J. A., & Grau-López, L. (2021). Treatment retention and abstinence of patients with substance use disorders according to addiction severity and psychiatry comorbidity: a six-month follow-up study in an outpatient unit. *Addictive Behaviors*, 117, 106832. doi: 10.1016/j.addbeh.2021.106832
- Editorial Staff. (2023). Addiction Recovery & Aftercare: Programs, activities & support groups. American Addiction Centers.
- Elias, S. C. (2017). Rehabilitated substance abusers' experience of aftercare following completion of inpatient treatment [Mini-thesis, University of the Western Cape].
- Farber, B. A. (2019). Client deception about substance use: Research findings and a case study. *Journal of Clinical Psychology*, 76(2), 277–285. doi:10.1002/jclp.22894
- Felman, A. (2018). What are the treatments for addiction?
- Fronek, P., Kendall, M., Ungerer, G., Malt, J., Eugarde, E., & Geraghty, T. (2009). Too hot to handle: reflections on professional boundaries in practice. *Reflective Practice*, 10(2), 161–171. doi: 10.1080/14623940902786172
- Frost, J. (2022). Purposive Sampling: Definition & Examples. *Statistics by Jim*.
- Hill, E. (2023). Understanding the impact that bad habits play on relapse | Bicycle Health. Bicycle Health.
- Hilton, T. F., & Pilonis, P. A. (2015). The Key to Individualized Addiction Treatment is Comprehensive Assessment and Monitoring of Symptoms and Behavioral Change. *Behavioral Sciences*, 5(4), 477–495. doi: 10.3390/bs5040477
- Ho, L., & Limpaecher, A. (2022). What is Phenomenological Research Design?.
- Ignacio, D. (2023). Exploring the Psychosocial Experiences and Mental Health Support of First-Generation Working College Students. *World Education Connect Multidisciplinary E-Publication*, 3(12), 30. doi: 10.5281/zenodo.10499798
- Ignacio, D. F. (2023). Virtual Care: Counseling Experiences of Guidance Counselors and Clients in the New Normal. *International Journal of Applied Guidance and Counseling*, 4(1).
- Addiction Center. (2022). Life After Rehab.
- Lamb, D., & Cogan, N. (2016). Coping with work-related stressors and building resilience in mental health workers: A comparative focus group study using interpretative phenomenological analysis. *Journal of Occupational and Organizational Psychology*, 89(3), 474–492.
- Legha, R., Raleigh-Cohn, A., Fickenscher, A., & Novins, D. K. (2014). Challenges to providing quality substance abuse treatment services for American Indian and Alaska native communities: perspectives of staff from 18 treatment centers. *BMC Psychiatry*, 14(1). doi: 10.1186/1471-244x-14-181
- Lifetime Recovery. (2023). Dealing With Addiction Triggers? Try These Coping Skills.
- Main, P. (2022). Carl Rogers' Theory. *Structural Learning*.
- Manuel, J. I., Yuan, Y., Herman, D. B., Svikis, D. S., Nichols, O., Palmer, E., & Deren, S. (2017). Barriers and facilitators to successful transition from long-term residential substance abuse treatment. *Journal of Substance Abuse Treatment*, 74, 16–22. doi: 10.1016/j.jsat.2016.12.001

- Marchand, K., Beaumont, S., Westfall, J., Macdonald, S., Harrison, S., Marsh, D. C., Schechter, M. T., & Oviedo-Joekes, E. (2019). Conceptualizing patient-centered care for substance use disorder treatment: findings from a systematic scoping review. *Substance Abuse Treatment, Prevention, and Policy*, 14(1). doi: 10.1186/s13011-019-0227-0
- Moudatsou, M., Stavropoulou, A., Philalithis, A., & Koukouli, S. (2020). The Role of Empathy in Health and Social Care Professionals. *Healthcare*, 8(1), 26. doi: 10.3390/healthcare8010026
- Muthelo, L., Mbombi, M. O., Mphahlele, P. M., Mabula, L. N., Dhau, I., Tlouyamma, J., Nemuramba, R., Mashaba, R. G., Mothapo, K., Ntimana, C. B., & Maimela, E. (2023). Exploring roles of stakeholders in combating substance abuse in the DIMAMO Surveillance Site, South Africa. *Substance Abuse: Research and Treatment*, 17. doi: 10.1177/11782218221147498
- The impact of honesty recovery. (2021). Northstar Transitions.
- Palm partners offers aftercare programs for recovering addicts and their families: Palm partners, a florida-based drug and alcohol addiction treatment center, provides aftercare programs focused on long-term recovery for drug and alcohol addicts and their families. (2015). PR Newswire.
- Parker, K. A., Roberson, L., Ivanov, B., Carter, R., & Riney, N. (2021). The Road to Recovery from Addiction: A Qualitative Exploration of Motivators and Challenges to Achieving Sobriety in Recovery Housing. *The International Journal of Health, Wellness & Society*, 11(2), 159-172. doi: 10.18848/2156-8960/cgp/v11i02/159-172
- Plaut, S. M. (2011). *Handbook of Clinical Sexuality for Mental Health professionals* (S. B. Levine, C. B. Risen, & S. E. Althof, Eds.). Routledge.
- Reist, C., Petiwala, I., Latimer, J. C., Raffaelli, S. B., Chiang, M., Eisenberg, D., & Campbell, S. (2022). Collaborative mental health care: A narrative review. *Medicine*, 101(52), e32554. doi: 10.1097/md.00000000000032554
- Samson, J., RN. (2021). Factors Affecting the Aftercare Program of Drug Dependents. *International journal of advanced multidisciplinary studies*, 1(3), 58.
- Sang, J., Patton, R., & Park, I. (2022). Comparing Perceptions of Addiction Treatment between Professionals and Individuals in Recovery. *Substance Use & Misuse*, 57(6), 983-994. doi: 10.1080/10826084.2022.2058706
- Sereta, B. N., Amimo, F., Ouma, P., & Ondimu, T. O. (2016). An assessment of effectiveness of drug rehabilitation programs in Kisii County-Kenya. *Journal of Health Education Research & Development*, 04(01). doi:10.4172/2380-5439.1000165
- Social Work and Substance Abuse: How to Treat Addiction. (2023). Florida State University.
- Syan, S. K., Minhas, M., Oshri, A., Costello, J., Sousa, S., Samokhvalov, A. V., Rush, B., & MacKillop, J. (2020). Predictors of premature treatment termination in a large residential addiction medicine program. *Journal of Substance Abuse Treatment*, 117, 108077. doi: 10.1016/j.jsat.2020.108077
- Tuliao, A. P., & Liwanag, M. E. C. D. (2011). Predictors of Relapse in Filipino Male Methamphetamine Users: A Mixed Methods Approach. *Journal of Ethnicity in Substance Abuse*, 10(2), 162-179. doi:10.1080/15332640.2011.573319
- Villegas, P. S. (2022). The Relapse Prevention Plan for Aftercare Patients of City of San Jose Del Monte Anti-Drug Abuse Council. *International Journal of Innovative Science and Research Technology*, 7(5), 441.
- World Health Organization: WHO. (2023). Rehabilitation.
- Yue, H., & Pena, E. (2022, November 11). Addiction psychotherapeutic care. StatPearls - NCBI Bookshelf.

Indigenous People Mathematics Teachers' Beliefs and Teaching Practices: An Explanatory Sequential Analysis

Alexis O. Tancontian¹, Ivy Lyt S. Abina², Orville J. Evardo Jr.^{3*}

¹Senior High School Department, Mariano Peralta National High School, Malita, Davao Occidental, Philippines

²College of Education, University of Southeastern Philippines, Davao City, Philippines

³Teacher Education Department, Davao de Oro State College, Compostela, Davao de Oro, Philippines

*Corresponding author email: orvilleevardo@gmail.com

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Abstract. Indigenous communities have a rich cultural heritage encompassing diverse ways of knowing, learning, and understanding the world around them. This mixed methods study utilized the explanatory sequential design to determine the level and relationship of the IP mathematics teachers' beliefs and teaching practices and gain a deeper insight into these beliefs and attitudes. There are 115 respondents for the quantitative phase, while 10 participants in the qualitative phase. Data were collected through survey and key informant interviews and were analyzed through mean, standard deviation, Pearson product moment correlation, and thematic analysis. Results showed that the IP mathematics teachers possess high levels for both beliefs and teaching practices, and a significant moderate positive relationship exists between the two variables. Qualitative data analysis revealed that teachers' beliefs include the ideal qualities of an effective mathematics teacher, respect for students' culture and background, and a constructivist approach to teaching. Teaching practices include discussing student performance and intervention during meetings, implementing culturally relevant approaches, technology, varied activities, and peer mentoring and coaching. Further, it is concluded that teachers' belief, which influences teaching practices, is shaped by different environmental factors. It is recommended that IP mathematics teachers continue to participate in personal and professional development activities and strengthen collaboration and reflection.

Keywords: Beliefs; Culturally responsive teaching; Indigenous People; Mathematics education; Teaching practices.

1.0 Introduction

Indigenous communities have a rich cultural heritage encompassing diverse ways of knowing, learning, and understanding the world around them. In recent years, there has been growing interest in exploring the relevant ideas involving Indigenous people in various educational contexts, including the field of mathematics education (Edilo et al., 2022; Nur et al., 2021; Acharya et al., 2021; Rigney et al., 2020). Within the realm of education, the inclusion and recognition of Indigenous knowledge systems and practices are crucial for promoting culturally responsive pedagogy and fostering educational equity.

Realizing the importance of the inclusion of Indigenous education, countries worldwide have established measures to meet this demand. Programs in Indigenous education have been put in place in many developed countries, such as the First Nations, Inuit, and Métis education programs in Canada (Greenwood et al., 2020), Kaupapa Māori in New Zealand (Pihamā, 2019), Aboriginal and Torres Strait Islander Education in Australia (Price & Rogers, 2019), Indian Education Act and the Johnson-O'Malley Act in the United States of America (Marcus & Zens, 2023), and Sámi Education in Norway (Keskitalo, 2019). In Asia, Indigenous education programs

include Tribal Education in India (Velusamy, 2021), Orang Asli Education Programme in Malaysia (Rosnon, 2016), the Education Act for Indigenous Peoples in Taiwan (Ministry of Education, 2020), and others. By including Indigenous education, societies can move toward a more inclusive, diverse, and fair educational system that respects and recognizes Indigenous peoples' contributions, perspectives, and rights.

In the Philippines, programs were implemented to enhance the educational quality received by the Indigenous communities. According to DepEd (2021), in the first ten years of the Indigenous Peoples Education (IPEd) Program, the Philippine Department of Education (DepEd) served 2.529 million IP students in 42,176 public schools across the nation. The policy takes a rights-based stance and specifies how to create a curriculum that is based on the social and cultural milieu of IP learners. However, even with the implementation of such programs, Fiagoy (2000) determined the causes of the failure in educating indigenous people, which include lack of contextualization of the lessons, lack of integration of indigenous cultural values in the classroom, lack of understanding of the way indigenous people learn, and lack of understanding of indigenous people's needs, lack of vision for their empowerment, among others. This assumes, in large part, that teachers' belief affects their teaching practices, which in turn affect IP students' learning and performance.

Similarly, Parajes (1992) emphasized the relevance of the individual theories that teachers develop on the nature of mathematics and the teaching and learning of mathematics in their decision-making and choice of teaching strategies, reflecting the teachers' beliefs. Likewise, Kupari (2003) stated that teachers' beliefs are critical in the implementation of their teaching and learning process in the classroom. The teachers' abilities to create meaningful classroom activities (Beswick, 2011) can be traced back to the three dimensions of mathematics beliefs: beliefs in the nature of mathematics, beliefs in teaching mathematics, and beliefs in learning mathematics (Zakaria & Musiran, 2010).

The Paaralang Mangyan na Angkop sa Kulturang Aalagaan (Pamana Ka), an indigenous school built in 1999 by and for the Mangyan community in San Jose, Occidental Mindoro Philippines, claimed their education is done right. At Pamana Ka, Math comes to life in the Mangyan traditions. For instance, a lesson on fractions begins with a discussion on the honey-harvesting practices in each student's community and concludes by reflecting on the values of sharing and fairness. Pamana Ka teachers find ways to teach mathematics concepts that start with things familiar to the Mangyan student (Llaneta, 2021). Indeed, this demonstrates that establishing good mathematical beliefs would lead teachers to positive and effective teaching practices (Zakaria & Maat, 2012).

Meanwhile, Davao Occidental is one of the few provinces in the Philippines where four or more distinct ethnic tribes built their own cultural communities in specific areas of the province. The Tagacaolo tribe accounts for the more significant percentage of the indigenous population, the Balkans, the Manobo, and the Muslim communities. This setting comprises different teachers and learners with culturally different beliefs and practices. This scenario calls for teachers' preparations to meet the needs of diverse learners. The implication of teachers' beliefs on their teaching practices can be classified according to what they do in class. The teaching practices should reflect the kind of mathematics beliefs the teachers hold (Zakaria & Maat, 2012).

With the present move towards culturally responsive pedagogy, there exists a great need to examine the teachers' beliefs and teaching, especially in the locality of Davao Occidental. However, no study has yet investigated and probed the level of beliefs and teaching practices and their relationship among the IP mathematics teachers within Davao Occidental. Considering these, this study sought to investigate the IP mathematics teachers' level of beliefs and teaching practices and their relationship.

2.0 Methodology

2.1 Research Design

This mixed methods study utilized the explanatory sequential design. According to Creswell and Creswell (2018), explanatory sequential design is a two-phased design wherein data collection and analysis starts with the quantitative phase and is followed by the collection and analysis of qualitative data. In this design, qualitative data is used to explain the quantitative data. Figure 1 shows the flow chart using the explanatory sequential design.

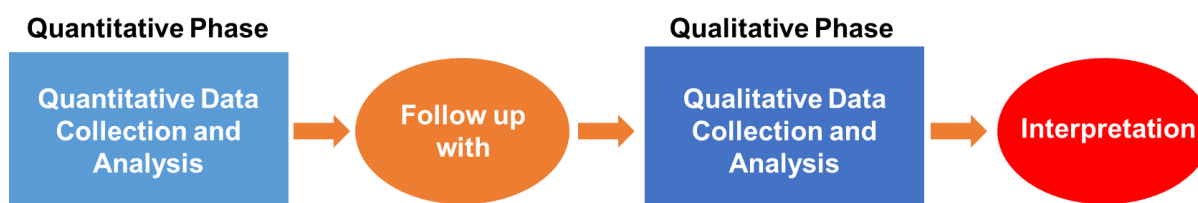


Figure 1. explanatory sequential design flowchart

The explanatory sequential design is appropriate in this study since the study aimed to gain a deeper understanding of the IP mathematics teachers' beliefs and practices in teaching and the relation between the two constructs. Further, the study is interested in explaining the items in the quantitative phase which got the highest and lowest scores and the observed relationship between beliefs and teaching practices. This allowed the researcher to see the deeper meaning, insights, and explanation for the underlying structures behind the participants' responses. Moreover, the design enhances the study's validity by combining the strengths and minimizing the weaknesses of the quantitative and qualitative methods. A robust statistical analysis is provided in the quantitative phase, ensuring the reliability of the results, while the qualitative phase enables a more profound knowledge of the lived experiences and views of IP mathematics teachers.

2.2 Research Locale and Participants

The study respondents were selected using a clustered sampling for the quantitative phase while purposive sampling is used in the qualitative phase. Cluster sampling is a common probability sampling technique used for studying large and geographically dispersed population (Thomas, 2023). This sampling technique is appropriate for the study given that the population of the IP teachers is greatly distributed among the rural areas of Davao Occidental. In the context of the study, the clusters were the IP mathematics teachers per school and the schools were selected randomly. For the qualitative phase, purposive sampling is a non-probability sampling in which the researcher selects the study respondents rich in experience and knowledge of the phenomenon under study. This sampling technique is also called judgmental sampling, as the researcher relies on his/her judgment in selecting the study participants to attain the study's objectives (Nikolopoulou, 2023). The participants of this study were the IP mathematic teachers from randomly selected elementary and secondary public schools within the Municipality of Malita, Davao Occidental. There are 115 respondents for the quantitative phase of the study and 10 participants for the qualitative phase.

2.3 Research Instrument

The study utilized the explanatory sequential mixed methods design comprising quantitative and qualitative phases. Therefore, the study used two sets of instruments. The researcher adopted the OECD (2018) TALIS Teacher Questionnaire on Teaching Beliefs and Practices for the quantitative phase. The survey questionnaire was adapted to measure the level of IP mathematics teachers' teaching beliefs and practices. The survey questionnaire was divided into two sections – one for each scale (beliefs and practices). The survey questionnaire for teaching beliefs is composed of 12 questions, and the survey questionnaire to assess the teaching practices scale is also composed of 12 questions. To establish the validity of the questionnaire, the instrument was subjected to an expert validation for content validity. Further, to assess the instrument's reliability, the questionnaire was pilot tested on 45 IP mathematics teachers. The reliability test result conducted on 45 IP mathematics teachers was tabulated in Table 1.

Table 1. Reliability test result

Scale	Cronbach's Alpha	Number of Items	Interpretation
Beliefs	0.771	12	Acceptable
Teaching Practices	0.885	12	Good
Overall	0.886	24	Good

Table 1 shows that the questionnaire's internal consistency on beliefs scale is $\alpha = .771$ which was interpreted as "acceptable." In addition, the questionnaire's internal consistency on teaching practices scale is $\alpha = .885$ which was interpreted as "good." Overall, the internal consistency of the OECD (2018) TALIS Teacher Questionnaire on

Teaching Beliefs and Practices is $\alpha = .886$, which has a descriptive interpretation as "good." This implies that the questionnaire is good to use in assessing the level of IP mathematics teachers' beliefs and practices in teaching.

2.4 Data Gathering Procedure

The researchers strictly implemented the following procedures throughout the study: First, letters were written addressed to the Dean of the Advanced Studies of the College of Education. Likewise, a letter of endorsement was sought for the Schools Division Superintendent of the DepEd, Davao Occidental Division, the research locale, to conduct the study. The researchers asked the school principal to conduct pilot testing as a preliminary procedure before conducting the research. As mentioned earlier, the test questionnaires, both the researcher-made and the adopted questionnaires, were used to conduct pilot testing. The researcher administered the pilot test at a public school in another municipality in Davao Occidental. Then, the result of the pilot test underwent a reliability test administered by a data analyst. After this, the researcher sent another permission letter to the school principal for the study's conduct. Once approval has been secured, the research instrument was uploaded to Google Forms to quickly gather the data and respondents' preferences. Letter invitations were written and addressed to the in-service teachers. Since they are already of age, their consent is required for their participation in the study. Once they signed the informed consent form, the researcher forwarded the Google form link or hard copy for the accomplishment of the tool. It will take the in-service teachers 10-15 minutes to accomplish the survey tool. Once the data were complete, answered questionnaires were then gathered, responses were encoded, and subjected to the appropriate statistical computations.

2.5 Ethical Considerations

Ethical considerations are paramount in research to ensure the well-being and rights of participants while maintaining integrity throughout the study. This includes aspects such as voluntary participation, where participants were required to sign consent forms, and were informed of their right to withdraw at any time. Privacy and confidentiality were rigorously upheld, with the researcher guaranteeing anonymity and employing stringent measures, such as data encryption and restricted access, to safeguard sensitive information. Transparency was also prioritized, with participants fully briefed on the study's objectives, risks, and procedures to mitigate any potential misrepresentation or misunderstanding. These ethical principles collectively guided the research process, ensuring ethical conduct and protection of participants' rights.

3.0 Results and Discussion

3.1 Level of Indigenous People (IP) Mathematics Teachers' Beliefs

Beliefs in teaching refer to the personal convictions, values, and assumptions held by educators about the nature of teaching, learning, and the role of education in society. These beliefs shape teachers' instructional decisions, interactions with students, and overall approach to teaching. They influence the selection of teaching strategies, classroom management practices, assessment methods, and the creation of learning environments (Pajares, 1992). Table 2 presents the Indigenous people (IP) Mathematics teachers' level of teaching beliefs.

It can be noted in Table 2 that item 1, *"I believe that, in teaching mathematics, effective or good teachers demonstrate the correct way to solve a problem,"* received the highest mean ($M=4.71$, $SD=.509$) and with a description equivalent of *"very high."* This was followed by item 7, *"I believe that, in teaching mathematics, instruction should be built around problems with clear, correct answers, and around ideas that most students can grasp quickly,"* which also has a description equivalent of *"very high"* and obtained the second highest mean ($M=4.59$, $SD=.591$). The result signifies that IP mathematics teachers believe that effective teachers lead their students to the proper problem-solving method by demonstrating it. This notion is supported by Bandura's theory of vicarious learning which emphasize that learning can occur through observing the behavior of others (Mayes, 2015), in this case, a more knowledgeable adult.

Additionally, IP mathematics teachers believe that mathematical concepts should be presented in a way familiar to IP learners. The result implies that IP mathematics teachers believe that for the students to make sense of the topics, it must be presented to them in a way that is responsive to their culture as it is more familiar and meaningful to IP learners. This result agrees with Edilo et al. (2022) that contextualization and localization are ways teachers can adopt to make their classrooms culturally responsive.

Table 2. Level of Indigenous People (IP) mathematics teachers' beliefs

Item No.	Indicator	Mean	SD	Description
	<i>I believe that, in teaching mathematics...</i>			
1.	an effective or good teachers demonstrate the correct way to solve a problem.	4.71	0.509	Very High
7.	instruction should be built around problems with clear, correct answers, and around ideas that most students can grasp quickly.	4.59	0.591	Very High
9.	students should be allowed to think of solution to practical problems themselves before the teacher shows them how they are solved.	4.43	0.727	Very High
4.	my role as a teacher is to facilitate students' own inquiry.	4.39	0.71	Very High
8.	how much students learn depends on how much background knowledge they have, that is why teaching facts is so necessary.	4.31	0.667	Very High
6.	students learn best by finding solutions to problems on their own.	4.29	0.77	Very High
12.	thinking and reasoning processes are more important than specific curriculum content.	4.23	0.689	Very High
10.	when referring to a "good performance", a performance that lies above the previous achievement level of the student.	4.19	0.771	High
3.	it is better when the teacher and not the student-decides what activities are to be done.	4.15	0.704	High
2.	when referring to a "poor performance", a performance that lies below the previous achievement level of the student.	3.93	0.71	High
11.	a quiet classroom is generally needed for effective learning.	3.86	0.782	High
5.	teachers know a lot more than students; they shouldn't let students develop answers that may be incorrect when they can just explain the answers directly.	3.77	1.001	High
Overall		4.24	0.774	Very High
1.00–1.80 = Very Low 3.41–4.20 = High				
1.81–2.60 = Low 4.21–5.00 = Very High				
2.61–3.40 = Moderate				

On the other hand, table 2 shows that item 5, “*I believe that, in teaching mathematics, teachers know a lot more than students; they shouldn't let students develop answers that may be incorrect when they can just explain the answers directly*”, and item 11, “*I believe that, in teaching mathematics, a quiet classroom is generally needed for effective learning*” received the lowest means among the items in the scale, with $M=3.77$ ($SD=1.001$) and $M=3.86$ ($SD=0.782$) respectively. Although both items have a descriptive equivalent of “*high*,” it is still notable since more respondents have rated these items low. The result suggests that IP mathematics teachers favor the constructivist approach to teaching and learning in which students play a more active role in learning. The teacher's role is to facilitate learning rather than the traditional approach in which teachers are seen as the fountain of knowledge. The result of this study follows Callaman and Itaas (2020) that teachers can use various instructional techniques to help students get interested in mathematics and build positive learning attitudes. Moreover, according to Tokac et al. (2019), using learner-centered activities, such as game-based mathematics activities, contributed to higher learning gains than traditional instructional methods.

Furthermore, IP mathematics teachers somehow believe that a quiet classroom equates to effective learning. By introducing varied techniques, the teacher designs and employs engaging activities that require the learners' active participation and, in turn, create academic noise. This result suggests that IP teachers value active learning more than passive learning. The result of this study is in harmony with Theobald et al. (2020), which found that active learning reduced achievement gaps in exam scores and passing rates, thus benefiting students.

Table 2 shows that the Indigenous people (IP) mathematics teachers have a very high level of teaching beliefs with an overall mean of 4.24 ($SD=.774$). This suggests that Indigenous people (IP) mathematics teachers have a firm footing in their beliefs about the nature of mathematics and beliefs about mathematics teaching and learning. According to Charalambous (2015), teachers' decisions and actions in the classroom are influenced by their knowledge and beliefs. The high level of belief is a good indicator of a good learning environment provided to the IP learners since the IP mathematics teachers are more likely to respond constructively to the varying needs of each IP student. The finding of this study is parallel to that of Yang et al. (2020), which reported that mathematics teachers have a strong propensity to hold a constructivist belief rather than a traditional view. Moreover, the high beliefs about mathematics teaching and learning display a certain degree of psychological strength among IP mathematics teachers.

3.2 Level of Indigenous People (IP) Mathematics Teachers' Teaching Practices

Teaching practices refer to educators' specific actions, strategies, and methods to facilitate learning, engage students, and achieve instructional goals. These practices include lesson planning, instructional delivery, classroom management, assessment, and feedback. Table 3 presents the IP teachers' level of teaching practices.

Table 3. Level of Indigenous People (IP) mathematics teachers' teaching practices

Item No.	Indicator	Mean	SD	Description
1.	I attend staff meetings to discuss the vision and mission of the school.	4.49	0.612	Very High
6.	I ensure common standards in evaluation for assessing students' progress in Mathematics.	4.36	0.638	Very High
7.	I engage in discussions about the learning development of specific students in mathematics	4.36	0.716	Very High
12.	I discuss and coordinate homework practice across subjects.	4.32	0.732	Very High
2.	I am part in the development of our school curriculum specifically in Mathematics.	4.17	0.752	High
4.	I exchange Mathematics teaching materials with colleagues.	4.17	0.741	High
11.	I engage in joint activities across different classes and age groups (e.g., projects).	4.15	0.808	High
5.	I attend team conferences for the age group I teach in Mathematics.	4.06	0.764	High
3.	I discuss and decide on the selection of Mathematics instructional media (e.g., textbooks, exercise books) with my colleagues.	4.01	0.778	High
8.	I teach jointly as a team in the same class.	4.01	0.767	High
9.	I take part in mathematics professional learning activities (e.g., team supervision).	4.01	0.863	High
10.	I observe other mathematics teachers' classes and provide technical assistance.	3.74	1.018	High
	Overall	4.15	0.794	High

It can be seen from Table 3 that item 1, "*I attend staff meetings to discuss the vision and mission of the school*," garnered the highest mean ($M=4.49$, $SD=.612$) with a description equivalent of "*very high*." This implies that IP mathematics teachers actively participate in school planning to achieve the institution's vision and mission. Through attending meetings, IP mathematics teachers can have a shared understanding and alignment of the institution's vision and mission, foster communication and engagement, and establish decision-making and accountability. This study result supports Hargreaves and Fullan (2012), emphasizing the importance of collaboration and collective decision-making in achieving school improvement. Furthermore, they discuss the role of meetings in fostering a shared understanding of the vision and mission, promoting professional learning communities, and mobilizing collective action towards common goals.

Additionally, table 3 depicts that item 6, "*I ensure common standards in evaluation for assessing students' progress in Mathematics*," and item 7, "*I engage in discussions about the learning development of specific students in mathematics*," received the second highest mean of 4.36 ($SD=.638$ and $.716$ respectively). This suggests that IP mathematics teachers maintain a standard reference for assessing students' learning outcomes. In addition, discussions about students' learning development, such as consultations and one-to-one conferences, were observed by the IP mathematics teachers. This is supported by Winstone and Carless (2019), who explored the role of feedback in promoting student engagement, motivation, and self-regulated learning. Moreover, Hattie and Timperley (2007) highlight the importance of timely, specific, and actionable feedback and its role in enhancing student achievement.

In contrast, item 10, "*I observe other mathematics teachers' classes and provide technical assistance*," received the lowest mean of 3.74 ($SD=1.018$). Although this item still has a descriptive equivalent of "*high*," it is understandable that it got the lowest mean since only the Master Teachers are required to conduct regular classroom observation. Even though teachers are encouraged to observe the best teaching practices of their colleagues, teachers still don't have the tendency to observe the classes of others if not required. Stronge (2018) explores various qualities and practices of effective teachers, including the significance of classroom observations for professional growth and development. Further, he emphasizes the role of observations in self-reflection, feedback, and continuous improvement.

Also shown in Table 3 that item 3, "*I discuss and decide on the selection of Mathematics instructional media (e.g., textbooks, exercise books) with my colleagues*," item 8, "*I teach jointly as a team in the same class*," and item 9, "*I take part in mathematics professional learning activities (e.g., team supervision)*," obtained the second lowest mean of 4.01 with standard deviation 0.778, 0.767, and 0.863 respectively. Even though these items received a relatively low score compared to other items, their descriptive equivalent is still high, which indicates that IP mathematics teachers still observe these items.

In general, table 3 depicts the IP mathematics teachers' level of teaching practices as high, with a mean of 4.15 and a standard deviation of .794. Generally, this finding suggests that IP mathematics teachers actively participate in activities that promote the achievement of the school's vision and mission, partake in professional development activities to improve teaching and learning, especially in mathematics, and be involved in peer mentoring opportunities to share and exchange best teaching practices. This finding is consistent with that of Evardo and Abina (2023), that attending professional development events fosters a more robust teaching-learning environment, keeps participants current on instructional techniques, and motivates them to progress as teachers in the twenty-first century.

3.3 Relationship between the Indigenous People (IP) Mathematics Teachers' Beliefs and Their Teaching Practices

Understanding the dynamics of mathematics education within Indigenous communities requires a thorough understanding of the interplay between the beliefs and teaching practices of Indigenous People (IP) math teachers. Indigenous people (IP) teachers bring their unique cultural perspectives, experiences, and beliefs into the classroom, which can significantly influence their teaching practices. The correlation between Indigenous people (IP) mathematics teachers' beliefs and their teaching practices is presented in Table 4.

Table 4. Correlation between Indigenous People (IP) mathematics teachers' beliefs and their teaching practices

Variable	M	SD	r	p	Remark
Beliefs	4.24	0.774	.481	<.001	Significant
Teaching Practices	4.15	0.794			

The correlation result between beliefs and teaching practices among Indigenous People (IP) Mathematics teachers, as illustrated in Table 4, indicates a significant moderate positive relationship between the two variables, $r(113) = .481$, $p < .001$. This finding suggests that there is a meaningful association between the beliefs held by IP Mathematics teachers and the teaching practices they employ in their classrooms. This further implies that as the strength or alignment of teachers' beliefs with certain principles, approaches, or cultural perspectives increases, their teaching practices tend to align more closely with those beliefs. This finding highlights the interconnectedness between teachers' underlying beliefs and their instructional strategies. Furthermore, the positive correlation suggests that teachers who clearly understand the connections between their beliefs and teaching practices are more likely to enact those beliefs in the classroom. This alignment can lead to more effective and culturally responsive mathematics instruction for Indigenous students, promoting their engagement, motivation, and academic success. However, it is essential to note that this correlation does not imply causation. While the findings indicate a relationship between beliefs and teaching practices, other factors, such as professional development, institutional support, and contextual influences, may also shape teaching practices among IP Mathematics teachers.

The study's findings add to those of Aljaberi and Gheith (2018), who found a statistically significant association between teachers' beliefs and their instructional strategies. Similarly, the study of Çam (2015) highlights how teachers' teaching practices can be influenced by their epistemological beliefs. Šapkova (2014) and Memnun & Hart (2012) also highlight the positive association between teachers' beliefs and their teaching practices. On the contrary, the study of Shi et al. (2014) supports the belief that teachers' instructional practices may not reflect teacher beliefs and found that there were no regular patterns of the relationship between teachers' beliefs and their instructional practices because teachers' actions were neither consistent nor in line with their beliefs about education. The findings of this study highlight the complexity and multifaceted nature of the relationship between teachers' beliefs and their teaching practices. Further, this complexity and multifaceted relationship emphasizes Bronfenbrenner's (1979) Ecological Systems Theory which explains that a range of environmental factors, such as personal, cultural, and contextual factors, can influence teacher beliefs. The interplay of these factors differs from teacher to teacher, which explains the varying levels of teachers' beliefs in teaching. These varying beliefs, in turn, create a diverse teaching practice.

3.4 Indigenous People (IP) Mathematics Teachers' Beliefs and Practices in Teaching Mathematics

The beliefs and practices of Indigenous People (IP) Mathematics teachers in teaching mathematics play a significant role in shaping the educational experiences of Indigenous students. Understanding these beliefs and

practices is crucial for developing culturally responsive and effective mathematics instruction. Table 5 shows the emerging themes of beliefs and practices with their corresponding core ideas.

Table 5. Themes on Indigenous People (IP) Mathematics teachers' beliefs in teaching mathematics

	Themes	Core Ideas
On Beliefs	Qualities of an effective mathematics teacher	Content knowledge expert Setting of clear objectives and rules Openness to feedback
	Respect to students' culture and background	Culturally responsive teaching Ensures applicability and reliability of concepts
	Constructivist approach to teaching	Fun and engaging learning environment Maintaining good relation and safe environment
On Teaching Practices	Discussion of student performance and intervention during meetings	Collaborative planning for possible solutions and interventions
	Teaching practices of IP mathematics teachers	Implementing culturally relevant approach Utilization of technology and varied activities
	Benefits of peer mentoring and coaching	Provide assistance Identifying strengths and areas for improvement

Theme 1: Qualities of an Effective Mathematics Teacher

The beliefs of IP Mathematics teachers regarding the traits of an effective mathematics teacher are highlighted in this theme. IP mathematics teachers acknowledge how crucial it is to have a solid grasp of the subject's content. They believe a teacher should thoroughly understand mathematical theories, concepts, and problem-solving strategies. This belief is encapsulated in the responses of the participants.

"... the teacher is knowledgeable enough and supportive. The teacher should be able to explain the concepts well in his/her class." – IDI003

"... possesses deep content knowledge" – IDI004

"... a teacher organize mathematical knowledge around its core concepts." – IDI002

According to another participant, expertise in content knowledge is not enough. An effective teacher must possess empathy, communication skills, and flexibility. This is captured in the statement:

"... string pedagogical skills, patience and empathy, good communication skills and flexibility and adaptability" – IDI004

Stronge (2108) asserts that teachers have a significant, long-lasting impact on their students because they directly impact what students learn, how much they learn, how students acquire it, and how they interact with their environment. Producing globally competitive students thus requires highly competitive teachers who are effective in knowledge, instructional delivery, assessment, learning environment, and professionalism. Moreover, the participants' beliefs of an effective teacher are consistent with Huang and Napier's (2015) results that effective teachers affect students' learning processes and paths to professionalism through their personalities and content knowledge is the subject.

Additionally, participants also believe that an effective teacher is prepared and, thus, is able to set clear objectives and rules. This concept is seen in the participants' responses.

"Before I enter the room, I always prepare the activities" – IDI001

"([It is important] that the teacher must clearly establish the class objectives. In this day, in this specific session, these are the target that we need to achieve." – IDI003

“clear and understandable rules that are consistent with instructional goals” – IDI004

Before entering the classroom, teacher preparation is of the highest importance since it is essential to ensure that educators are prepared to meet the differing needs of students and deliver effective instruction. Furthermore, teacher preparation ensures content knowledge and expertise, planned and seamless classroom activities, and good classroom management. An unprepared teacher may find himself/herself with no idea what to do inside the classroom and, in turn, find it challenging to manage the classroom since there is no prepared, structured activity. Starkey (2019) posed a challenge to teachers, noting that as schools and teaching change due to the incorporation of technologies, so too will teacher preparation. Teachers may allot more time to try and test new relevant technologies in their teaching. In addition, Brudvig et al. (2022) noted that goal setting increases student motivation and yields positive outcomes in terms of academic achievement.

Participants also noted that being open to feedback and constructive criticism is one of the qualities of an effective teacher. A participant noted that:

“... be open to feedbacks both from students and co teachers” – IDI004

“... I always welcome input from my students and coworkers in order to enhance my teaching approaches” – IDI004

Feedback and constructive criticism are essential to IP Mathematics teachers since they provide development opportunities. They think that by being receptive to criticism from administrators, students, and colleagues, they may improve their instructional strategies and become more effective teachers. In their study, Fong et al. (2018) highlighted that when someone is criticized, they frequently see it as a sign of failure, but this may be avoided with good communication. They also emphasized that criticism needed to be perceived as coming from a trustworthy source and that the feedback message required the qualities of being well-intended, focused, and offering suggestions for improving the work. Additionally, according to Faisal et al. (2019), a lack of effective two-way communication between faculty and administration contributes to teacher workplace stress. They stated that teachers feel abandoned and ignored due to the lack of supportive feedback and constructive criticism.

Theme 2: Respect for Students' Culture and Background

This theme's emphasis is on the beliefs of IP Mathematics teachers regarding the significance of respecting and acknowledging students' cultural identities and backgrounds. Based on the participants' responses, they believe that teaching in an Indigenous community should be delivered in a culturally responsive approach. This can be observed in the narratives of the participants.

“... classroom setting is inclusive and culturally responsive, acknowledging and valuing the diverse background and experiences of all students.” – IDI004

According to Edilo et al. (2022), a way of making the classroom culturally responsive is by contextualizing the examples and using the students' local language so that the concept being presented makes more sense to the students' daily lives. Narratives among the participants shared the same belief as attested in their responses.

“(Your style should be contextualized, localized, and indigenized so that they will understand the concept.” – IDI003

“You should make them understand and you should also know their language” – IDI003

Cruz et al. (2019) state that culturally responsive teaching can positively affect student outcomes. If the students can connect the concepts being taught and their real-world, concepts are concretized, and learning is permanent. With that, IP mathematics teachers believe that mathematical principles should be used in real-world contexts, especially those pertinent to Indigenous populations. They support emphasizing the usefulness of mathematics and its importance to Indigenous students' daily lives. This notion is captured by the participants sharing.

“The students should be able to apply the concepts learns at school to their own lives.” – IDI003

“... in a way that students will practice [the concepts] in real life” – IDI005

In the study of Reyes et al. (2019), they underlined that if mathematics lessons were designed based on students' context, it makes the lessons more meaningful and relevant to the students. Additionally, doing so makes the class

lively and engaging, where students construct meaning. They also reported that participants believe that the meaning of contextualization is about the student's culture and background and using local materials or information.

Participants also believe that by applying culturally responsive pedagogy and ensuring the concepts' applicability and relatability, they will be able to produce quality students, which makes their learning into innovative and productive ideas. A participant has shared that:

"... you can produce quality students which have learned something from your class, and they can apply it in their homes and lives." – IDI003

Being able to apply the concepts in real life is already a milestone, but teachers should also consider the development of other equally essential life skills. Baird and Parayitam (2019) pointed out that the top six skills employers seek are interpersonal, problem-solving, listening, communication, professionalism, and motivation.

Theme 3: A Constructivist Approach to Teaching

This theme reflects the beliefs of IP Mathematics teachers about adopting a constructivist approach to teaching and learning. The core ideas include (1) a fun and engaging learning environment and (2) maintaining good relations and a safe environment. IP mathematics teachers believe fostering a fun and engaging learning environment is essential. They understand the importance of actively combining interactive techniques, group projects, and hands-on activities to engage students in the learning process. This notion is observed in the participants' responses.

"... always be a pupil-centered or a student-centered educator" – IDI002

"in class, it should not be the teacher who is always giving inputs. We should also include our dear students to ensure conducive learning environment" – IDI003

Participants shared that a constructivist classroom provides an engaging environment and fun and varied activities. The participants said that:

"... you see the students engage in the activities, and responds to the teacher's questions" – IDI001

"... shows positive and engaging environment for his/her students" – IDI003

"group discussions where they can provide a space for learners to share their ideas and perspectives with each other to learn from their classmates insights" – IDI004

"... I use various teaching strategies because students have multiple intelligences" – IDI003

Many studies worldwide have underscored the positive effect of applying a constructivist approach to teaching and learning compared to the traditional approach. Gunga and Zakariya (2020); Voskoglou (2019); and Ibañez and Pentang (2021) have reported increased mathematics performance, improved student attitudes, promoted social behavior, and increased student participation. Moreover, the findings of this study are similar to that of Kusaeri and Aditomo (2019), which found that most pre-service teachers preferred the constructivist approach over the traditional one. However, according to Shah (2019), the constructivist approach in education has frequently been misapplied, leading to instructional strategies that neither challenge students nor meet their demands. This highlights that teachers must be updated on the recent developments in constructivist teaching and learning to avoid the misuse of the approach and ensure authentic student learning and achievement.

Aside from the IP teacher's belief in the advantages of applying the constructivist approach, they stressed the importance of providing the students with a safe, nurturing, and nonjudging environment while learning. This is seen from the participant's accounts as follows:

"Consider that the learning environment is positive and inclusive." – IDI003

"The classroom should be safe and welcoming. The students should feel they welcome inside the classroom" – IDI003

"Use specific positive action words" – IDI004

"Establish working relationship with students" – IDI004

The IP teachers' belief in providing students with a positive learning environment supports the study of Sithole (2017), which asserted that Students achieve the desired results when there is a caring environment in the educational setting. The schools can either assist students in getting excellent results, or they could result in the students failing. Positive learning environments that also equate with strong teacher/student connections improve student performance. Moreover, O'Malley et al. (2015) exclaimed that students who self-reported stronger academic performance also self-reported perceptions of a more positive school climate, regardless of family structure. Furthermore, the moderating impact of positive school climate perceptions on self-reported academic performance was largest for homeless adolescents and youth from one-parent families, indicating that school climate has a protective impact on students from these family types. The result emphasizes the importance of teachers serving as second parents in the classroom. The goal of the classroom environment should be to make students feel comfortable.

Table 5 also presents the themes of Indigenous People (IP) mathematics teachers' Practices in teaching mathematics. These themes and core ideas highlight the pedagogical strategies used by IP Mathematics teachers. It is crucial to understand these practices in order to create math lessons for Indigenous students that are culturally appropriate. By adhering to these teaching practices, teachers can encourage meaningful learning, encourage student involvement, and support Indigenous students' academic achievement.

Theme 4: Discussion of Student Performance and Intervention During Meetings

The theme highlights the practices of IP Mathematics teachers in examining student performance and intervention strategies during meetings. Due to the varying needs of each IP student, the teachers have developed a culture of discussing students' performance and needs and sharing and proposing best practices to help the IP students. Moreover, the participants also shared that these discussions happen not only during formal meetings but also during casual conversations. These practices were captured in the participant's responses as follows:

"In our meetings, we point out those students who need assistance ... then we give solution." – IDI007

"All of the teachers discussed the possible ways to improve the students' low performance in mathematics" – IDI008

"Informally, during our lunch time, we talk about the challenges and problems of our students" – IDI008

These conversations on student performance and finding a viable solution to student problems are consistent with the IP mathematics teachers' belief in providing the learners with a safe and welcoming environment. This highlights the teachers' compassion toward their students which is one of the attributes of an effective teacher. Jazaieri (2018) argued that while parents and family systems serve as excellent models of compassion for young children, compassion may also be demonstrated to students in a classroom setting. This finding demonstrates that teachers have the chance to foster the development of compassion in each student at various points throughout the educational spectrum.

Theme 5: Teaching Practices of IP Mathematics Teachers

Based on the interviews, culturally responsive teaching strategies are given priority by IP Math teachers. They incorporate Indigenous culture, customs, and examples into their instruction to make the subject matter more relevant to their student's lives and experiences. The participants' narratives reveal this idea.

"... we contextualize the teaching of mathematics, so that they can picture out their understanding of the topics because they have experienced it already. We use the things available in the surroundings so that they will learn." – IDI006

"The teachers should translate his/her instruction into the students' local language so that they will understand it. The teacher should learn to speak and understand the local language." – IDI008

"It should be fit to the lesson. For an instance, instead of using weighing scale 'gantang' or 'gantangan' should be used for it to be localized." – IDI010

This teaching practice is consistent with the IP mathematics teachers' belief in providing students with culturally responsive teaching and learning experience. This teaching practice is consistent with Cruz et al. (2019), who see positive learning outcomes among the students who are taught using a culturally responsive approach. Moreover, the practices of the IP mathematics teachers are parallel to the report of Edilo et al. (2022), which found that teachers who implement culturally responsive pedagogy use the local language of the students for better understanding; and use local and readily available resources in teaching so that students can easily understand the concepts being presented.

Moreover, besides implementing culturally responsive teaching, IP mathematics teachers try to introduce technology and manipulatives to their students. Recognizing the importance of technology in 21st-century teaching and learning, IP mathematics teachers see to it that their students are exposed to technologies to be at par with those students who live in urban areas. This is captured in the answers of the participants as follows:

"... I integrate ICT during my mathematics class because it captivates the attention of the students" – IDI008

"I also use technological advancements like smart tv. I download educational videos and play it during class. The videos easily catches the attention of the students" – IDI006

A meta-analysis conducted by Higgins et al. (2017) indicates a significant overall impact of technology on student achievement, motivation, and attitudes in mathematics. Furthermore, Ran et al. (2021) found a statistically significant effect between technology use and math achievement. They also discovered that technology was employed to enhance mathematical communication, problem-solving, conceptual growth, and practices for adaptive mathematics. However, Young et al. (2018) contended that when integrating technology in the classroom, teachers must consider grade level, time, and the instructional function of technology.

Moreover, since the IP mathematics teachers believe that their approach to teaching is constructivist, it shows in their practices by employing varied activities and teaching strategies. Further, the IP mathematics teachers provide varied activities to cater to the students' multiple intelligences. The participants said that:

"[use] varied teaching strategies and activities; if you used board work today, tomorrow use another approach." – IDI008

"I conduct interventions like drills, home visitation, tutorials, and focus group discussions." – IDI006

"We use manipulatives and often times media." – IDI009

"You need to relate the concept to real-life to cater the students' multiple intelligence. My strategy is applying differentiated instruction." – IDI008

Prast et al. (2018) stated that implementing differentiated instruction can potentially promote student achievement. Awofala and Lawani (2020) reported a significantly improved performance for those students exposed to differentiated instruction than for those who were not. Additionally, they observed that differentiated instruction encouraged student participation and made lessons more exciting and stress-free. Also, Lai et al. (2020) found that varied teaching and learning activities significantly increased students' mathematics self-efficacy, learning motives, and problem-solving skills.

Theme 6: Benefits of Peer Mentoring and Coaching

Peer mentoring and coaching support and guide IP Mathematics teachers in their professional growth. They offer a platform for sharing experiences, resources, and strategies to enhance teaching effectiveness. The participants said that:

"...to give assistance on our weaknesses, to be improved, and to able to give quality education to our students." – IDI006

"... my chance to gain technical assistance on how to improve my teaching strategies." – IDI009

"My colleague ask for an idea about his/her topic and I was able to impart idea." – IDI007

Aside from providing assistance, teachers also appreciate classroom observations since peer mentoring and coaching enable IP Mathematics teachers to recognize their strengths and areas for development through constructive criticism and self-reflection. This idea is seen in the responses of the participants.

"There is no best teaching strategy but if you are willing to be observed and open for comments, you can improve your teaching strategy since we can always learn from others." – IDI008

"... it is an opportunity to be observed by a school head or a teacher because I do believe that through their observation, they can give technical assistance on my strengths." – IDI006

"Through their inputs, comments, and support, I will know where the areas are that needs revision in my teaching strategy." – IDI008

Studies have shown that peer coaching and mentoring positively affect teachers' and their students' performance. Hsieh et al. (2019) reported that students in peer-coached teachers' classes had more favorable views of their teachers' instructional strategies and performed better regarding their scientific competency. Additionally, teachers felt peer coaching sessions inspired them to adopt science literacy-based lessons and advance their assessment skills. Bell et al. (2019) discussed the advantages of peer mentorship, including using research-based teaching techniques, encouraging collegial conversations, and reflection in the teaching workplace context.

More importantly, peer mentoring and coaching create opportunities for IP mathematics teachers to learn from the expertise and experiences of their colleagues. With that, it boosts their confidence and confidence. This is captured from the sharing of the participants.

"I believe that even if how long you are in the field there are things that you need to learn." – IDI006

"... [by observing] them, there are things that you can learn like the way they handle their class in mathematics." – IDI008

"... when you feel the support and assistance of your colleagues on your plans, it encourages you to do better ... it can boost your morale." – IDI008

The findings of this study matched that of Carlson et al. (2020), that through peer coaching, teachers can be aware of unrecognized habits, provided personalized tips to improve teaching quality based on individual style, and exposure to new teaching techniques. Overall, the IP mathematics teachers clearly understand the need for classroom observations and peer mentoring sessions. They engage in such professional development activities with the primary goal of helping the students in need and further enhancing the teaching and learning experience of the IP students, especially in Mathematics.

3.5 Data Integration of Salient Quantitative and Qualitative Results

Table 6 shows how the qualitative data explains the quantitative data gathered on the beliefs and teaching practices of the IP mathematics teachers. It can be seen in Table 6 that the most salient quantitative and qualitative findings are parallel and support each other. However, one quantitative result, specifically on teaching practices, seems to have conflicting results with its corresponding qualitative finding.

Based on the findings, the IP mathematics teachers believe that an effective teacher demonstrates the correct way to solve a problem (M=4.71). This result coincides with the theme, *"Qualities of an effective mathematics teacher."* According to the responses of the participants, they believe that an effective mathematics teacher knows how to demonstrate the correct way to solve a problem since that teacher is a content knowledge expert, knows how to

set clear objectives and rules, and is open to constructive feedback. Moreover, the study respondents believe instruction should be built around problems with clear, correct answers and ideas that most students can grasp quickly ($M=4.59$) parallel to the theme, "*Respect for students' culture and background.*" The participants believed that an effective teacher employs culturally responsive pedagogy and ensures the applicability and relatability of the concepts being presented. Through culturally responsive teaching, students are familiar with the concepts, thus making learning more relatable and permanent.

Table 6. Joint display of salient quantitative and qualitative data

	Quantitative Data Findings	Qualitative Data Findings	Data Integration Nature
On Beliefs	Table 2 reported the highest means on the following:	Table 5, On beliefs theme: Qualities of an effective mathematics teacher	Supporting
	Item 1: I believe that, in teaching mathematics, an effective or good teachers demonstrate the correct way to solve a problem. ($M=4.71$)	Respect to students' culture and background	Supporting
	Item 7: I believe that, in teaching mathematics, instruction should be built around problems with clear, correct answers, and around ideas that most students can grasp quickly. ($M=4.59$)		
	Table 2 reported the lowest means on the following:	Constructivist approach to teaching	Supporting
	Item 5 : I believe that, in teaching mathematics, teachers know a lot more than students; they shouldn't let students develop answers that may be incorrect when they can just explain the answers directly. ($M=3.77$)		
On Teaching Practices	Item 11: I believe that, in teaching mathematics, a quiet classroom is generally needed for effective learning. ($M=3.86$)		
	Table 3 reported the highest means on the following:	Table 5, On teaching practices theme:	
	Item 1: I attend staff meetings to discuss the vision and mission of the school. ($M=4.49$)	Discussion of student performance and intervention during meetings	Supporting
	Item 7: I engage in discussions about the learning development of specific students in mathematics. ($M=4.36$)	Benefits of peer mentoring and coaching	
	Table 3 reported the lowest means on the following:		Contrasting
	Item 10: I observe other mathematics teachers' classes and provide technical assistance. ($M=3.74$)		

In contrast, the participants have less agreement, or they do not believe that teachers know a lot more than students; they should not let students develop answers that may be incorrect when they can just explain the answers directly ($M=3.77$). Additionally, they do not generally believe that a quiet classroom is generally needed for effective learning ($M=3.86$). This is supported by the theme, "*Constructivist approach to teaching.*" The theme suggests that teachers believe applying a constructivist approach to teaching and learning is the way forward. In this approach, the teacher is not the fountain of knowledge. Instead, the teacher facilitates while the students are actively learning. With this type of learning, students actively participate in activities; thus, they believe that a quiet classroom does not necessarily equate to learning. Moreover, the IP mathematics teachers believe that the students must be placed in a safe and welcoming environment conducive to learning.

On teaching practices, the IP mathematics teachers attend staff meetings to discuss the vision and mission of the school ($M=4.49$) and engage in discussions about the learning development of specific students in mathematics ($M=4.36$). The theme can explain the high ratings on these items, "*Discussion of student performance and intervention during meetings.*" Participants revealed that collaborative planning for possible solutions and interventions is a must in every educational institution. Every teacher should take part in realizing the mission and vision of every school, and that is to produce globally competitive individuals who will positively impact society.

Lastly, participants rated the item "*I observe other mathematics teachers' classes and provide technical assistance*" as the lowest, with a mean of 3.74. This result seems to conflict with the qualitative finding on "*Benefits of peer mentoring and coaching.*" Based on the interviews with the participants, they highly value cooperation and collaboration, hence seeing the need, importance, and benefits of peer mentoring and coaching. This conflict might be attributed to teachers, especially from government schools, being observed only by the master teachers, head teachers, and principals. Although teachers of the same level do not observe each other, they devised a mechanism to still learn from each other, and that is by sharing their best practices.

Overall, a meaningful relationship exists between the study variables, as evidenced by the positive association between the IP mathematics teachers' beliefs and teaching methods. The qualitative findings supporting this association show how IP mathematics instructors' beliefs were put into practice. This connection serves as further evidence of the importance of comprehending and supporting the views of IP Mathematics teachers in order to promote effective and culturally responsive mathematics instruction for Indigenous students. By recognizing and leveraging the interconnectedness between teachers' beliefs and their instructional practices, educators and policymakers can promote sustainable and empowering learning experiences for Indigenous students.

4.0 Conclusion

This study reveals a cyclical relationship between teachers' beliefs and their practices within the classroom. Environmental factors significantly shape how strongly teachers hold specific beliefs about teaching and learning. These beliefs then serve as a roadmap for the instructional practices they implement. The study found a tendency for teachers with stronger constructivist beliefs to utilize culturally responsive pedagogy, focusing on contextualization and leveraging students' native languages. These highlight the importance of fostering constructivist beliefs in teachers. Furthermore, the research emphasizes the value of professional development activities like peer mentoring and coaching. These programs provide opportunities for IP teachers to stay up-to-date on best practices, share successful strategies with colleagues, and boost their overall morale and confidence. More importantly, this research underscores the interconnectedness between teachers' beliefs, practices, and professional development. By acknowledging this cyclical relationship, school leaders and educators can work together to create ongoing support systems that empower IP teachers to refine their pedagogical approaches, strengthen their constructivist beliefs, and ultimately create culturally relevant and engaging learning environments for all students..

Moving forward, targeted professional development programs can be instrumental in solidifying constructivist teaching beliefs among teachers. Workshops, seminars, or online courses specifically designed to explore constructivist principles and their practical application in the IP classroom can provide valuable support. Also, training in culturally responsive pedagogy can equip IP teachers with the necessary tools and strategies. This training can empower them to integrate students' cultural backgrounds and native languages into the curriculum, fostering a more inclusive learning environment for all students. Furthermore, the study highlights the value of expanding peer coaching and mentoring programs within schools. These programs provide a platform for IP teachers for constructive feedback in a supportive environment. Finally, supportive school leadership that prioritizes ongoing professional development and teacher collaboration is crucial. By creating a culture that values continuous learning and shared responsibility for student success, school leaders can empower teachers and cultivate a strong foundation for ongoing improvement.

5.0 Contributions of Authors

The authors declare equal contribution in the conceptualization, data gathering, and writing of the manuscript.

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7.0 Conflict of Interests

The author declare no conflicts of interest.

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9.0 References

- Acharya, B. R., Kshetree, M. P., Khanal, B. P., Panthi, R. R., & Belbase, S. (2021). Mathematics Educators' Perspectives on Cultural Relevance of Basic Level Mathematics in Nepal. *Journal on Mathematics Education*, 12(1), 17–48. <https://doi.org/10.22342/jme.12.1.12955.17-48>
- Aljaberi, N. M., & Gheith, E. (2018). In-Service Mathematics Teachers' Beliefs About Teaching, Learning and Nature of Mathematics and Their Mathematics Teaching Practices. *Journal of Education and Learning*, 7(5), 156. <https://doi.org/10.5539/jel.v7n5p156>
- Awofala, A. O. A., & Lawani, A. O. (2020). Increasing Mathematics Achievement of Senior Secondary School Students through Differentiated Instruction. *Journal of Educational Sciences*, 4(1), 1. <https://doi.org/10.31258/jes.4.1.p.1-19>
- Baird, A. M., & Parayitam, S. (2019). Employers' ratings of importance of skills and competencies college graduates need to get hired. *Education + Training*, 61(5), 622–634. <https://doi.org/10.1108/et-12-2018-0250>
- Bell, A. E., Meyer, H. S., & Maggio, L. A. (2019). Getting Better Together: A Website Review of Peer Coaching Initiatives for Medical Educators. *Teaching and Learning in Medicine*, 32(1), 53–60. <https://doi.org/10.1080/10401334.2019.1614448>
- Beswick, K. (2011). Teachers' beliefs about school mathematics and mathematicians' mathematics and their relationship to practice. *Educational Studies in Mathematics*, 79(1), 127–147. <https://doi.org/10.1007/s10649-011-9333-2>
- Bronfenbrenner, U. (1979). The ecology of human development : experiments by nature and design. In Harvard University Press eBooks. <http://ci.nii.ac.jp/ncid/BA0129742X>
- Brudvig, A., Anderson, T., & Moore, J. (2022). Goal Setting in Kindergarten: Motivating Young Learners to Be Successful in Learning Sight Words. *Journal of Inquiry and Action in Education*, 11(1). <https://eric.ed.gov/?id=EJ1355750>
- Callaman, R. A., & Itaas, E. C. (2020). Students' mathematics achievement in Mindanao context: A meta-analysis. *Journal of Research and Advances in Mathematics Education*, 5(2), 148–159. <https://doi.org/10.23917/jramathedu.v5i2.10282>
- Çam, A. (2015). Primary Pre-Service Teachers' Epistemological Beliefs and their Teaching and Learning Experiences. *Eurasia Journal of Mathematics, Science and Technology Education*, 11(2). <https://doi.org/10.12973/eurasia.2015.1351a>
- Carlson, K. J., Ashford, A., Hegagi, M., & Vokoun, C. (2020). Peer Coaching as a Faculty Development Tool: A Mixed Methods Evaluation. *Journal of Graduate Medical Education*, 12(2), 168–175. <https://doi.org/10.4300/jgme-d-19-00250.1>
- Charalambous, C. D. (2015). Working at the intersection of teacher knowledge, teacher beliefs, and teaching practice: a multiple-case study. *Journal of Mathematics Teacher Education*, 18(5), 427–445. <https://doi.org/10.1007/s10857-015-9318-7>
- Creswell, J.W., & Creswell, J.D. (2018). Mixed methods procedures. In, *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed., pp. 213–246). Los Angeles, CA: SAGE Publications, Inc.
- Cruz, R. A., Manchanda, S., Firestone, A. R., & Rodl, J. E. (2019). An Examination of Teachers' Culturally Responsive Teaching Self-Efficacy. *Teacher Education and Special Education*, 43(3), 197–214. <https://doi.org/10.1177/0888406419875194>
- DepEd. (2021, October 8). DepEd marks 1st decade of Indigenous Peoples Education Program (IPEd) with 2.5M learners served | Department of Education. <https://www.deped.gov.ph/2021/10/08/deped-marks-1st-decade-of-indigenous-peoples-education-program-iped-with-2-5m-learners-served/>
- Edilo, J., Evardo, O. J., & Callaman, R. (2022b). Culturally responsive self-efficacy of mathematics teachers: Input for self-efficacy building enhancement. *International Journal of Innovative Research in Education*, 9(1), 105–113. <https://doi.org/10.18844/ijire.v9i1.8975>
- Evardo, O. J., Jr, & Abina, I. L. S. (2023). Research Competence of Out-of-Field Teachers in Teaching Practical Research: Input to Capability Building Series. *International Journal for Multidisciplinary Research*, 5(2). <https://doi.org/10.36948/ijfmr.2023.v05i02.1808>
- Faisal, F., Noor, N., & Khair, A. (2019). Causes and Consequences of Workplace Stress among Pakistan University Teachers. *Bulletin of Education and Research*, 41(3), 45–60. <http://files.eric.ed.gov/fulltext/EJ1244645.pdf>
- Fiagoy, G. L. (2000). Adult Education and Indigenous Peoples in the Philippines. *International Survey on Adult Education for Indigenous Peoples. Country Study: The Philippines*. UNESCO. <https://files.eric.ed.gov/fulltext/ED458368.pdf>
- Fong, C. J., Schallert, D. L., Williams, K., Williamson, Z. H., Warner, J. R., Lin, S., & Kim, Y. (2018). When feedback signals failure but offers hope for improvement: A process model of constructive criticism. *Thinking Skills and Creativity*, 30, 42–53. <https://doi.org/10.1016/j.tsc.2018.02.014>
- Ginga, U. A., & Zakariya, Y. F. (2020). Impact of a Social Constructivist Instructional Strategy on Performance in Algebra with a Focus on Secondary School Students. *Education Research International*, 2020, 1–8. <https://doi.org/10.1155/2020/3606490>
- Greenwood, M., Larstone, R., Lindsay, N., Halseth, R., & Foster, P. (2020). Exploring the Data Landscapes of First Nations, Inuit, and Métis Children's Early Learning and Child Care (ELCC). National Collaborating Centre for Aboriginal Health.
- Hargreaves, A., & Fullan, M. (2012). Professional Capital: Transforming Teaching in Every School. <http://ci.nii.ac.jp/ncid/BB18399261>
- Hattie, J., & Timperley, H. (2007). The Power of Feedback. *Review of Educational Research*, 77(1), 81–112. <https://doi.org/10.3102/003465430298487>
- Higgins, K. N., Huscroft-D'Angelo, J., & Crawford, L. (2017). Effects of Technology in Mathematics on Achievement, Motivation, and Attitude: A Meta-Analysis. *Journal of Educational Computing Research*, 57(2), 283–319. <https://doi.org/10.1177/0735633117748416>

- Hsieh, F., Lin, H., Liu, S., & Tsai, C. (2019). Effect of Peer Coaching on Teachers' Practice and Their Students' Scientific Competencies. *Research in Science Education*, 51(6), 1569–1592. <https://doi.org/10.1007/s11165-019-9839-7>
- Huang, Z., & Napier, J. (2015). Perceptions of Teachers and Students on the Qualities of an Effective Translation Teacher. *The Journal of Language Learning and Teaching*, 5(1), 1–23. <https://dergipark.org.tr/en/pub/jltd/issue/22502/240579>
- Ibañez, E. D., & Pentang, J. T. (2021). Socio-Constructivist Learning and Teacher Education Students' Conceptual Understanding and Attitude toward Fractions. *Indonesian Research Journal in Education*, 5(1), 23–44. <https://doi.org/10.22437/irje.v5i1.12187>
- Jazaieri, H. (2018). Compassionate education from preschool to graduate school. *Journal of Research in Innovative Teaching & Learning*, 11(1), 22–66. <https://doi.org/10.1108/jrit-08-2017-0017>
- Keskitalo, P. (2019). Place and space in Sámi education. *Policy Futures in Education*, 17(4), 560–574. <https://doi.org/10.1177/1478210319848530>
- Kupari, P. (2003). Instructional practices and teachers' beliefs in Finnish mathematics education. *Studies in Educational Evaluation*, 29(3), 243–257. [https://doi.org/10.1016/s0191-491x\(03\)90012-5](https://doi.org/10.1016/s0191-491x(03)90012-5)
- Kusaeri, K., & Aditomo, A. (2019). Pedagogical Beliefs about Critical Thinking among Indonesian Mathematics Pre-service Teachers. *International Journal of Instruction*, 12(1), 573–590. <https://doi.org/10.29333/iji.2019.12137a>
- Lai, C., Zhang, W., & Chang, Y. (2020). Differentiated instruction enhances sixth-grade students' mathematics self-efficacy, learning motives, and problem-solving skills. *Social Behavior and Personality*, 48(6), 1–13. <https://doi.org/10.2224/sbp.9094>
- Llaneta, C. A. (2021, November 15). Math + culture for indigenous peoples. University of the Philippines. <https://up.edu.ph/math-culture-for-indigenous-people/>
- Marcus, U., & Zens, R. L. (2023). Indigenous Education in South Dakota. On Indian Ground: Northern Plains, 73.
- Mayes, J. T. (2015). Still to learn from vicarious learning. *E-learning and Digital Media*, 12(3–4), 361–371. <https://doi.org/10.1177/2042753015571839>
- Memnun, D. S., & Hart, L. C. (2012). Elementary School Mathematics Teacher Trainees Metacognitive Awareness Levels: Turkey Case. *Journal of International Education Research*, 8(2), 173–182. <https://doi.org/10.19030/jier.v8i2.6837>
- Ministry of Education. (2020). Program on Developing Indigenous Education (2021–2025). <https://english.moe.gov.tw/cp-48-25355-211df-1.html#:~:text=The%20Program%20on%20Developing%20Indigenous,Act%20for%20Indigenous%20Peoples%2C%20and>
- Nikolopoulou, K. (2023). What Is Purposive Sampling? | Definition & Examples. Scribbr. <https://www.scribbr.com/methodology/purposive-sampling/>
- Nur, A. C., Waluya, S. B., Kartono, K., & Rochmad, R. (2021). Ethnomathematics Perspective and Challenge as a Tool of Mathematical Contextual Learning for Indigenous People. *International Journal on Emerging Mathematics Education*, 5(1), 1. <https://doi.org/10.12928/ijeme.v5i1.17072>
- O'Malley, M. D., Voight, A., Renshaw, T. L., & Eklund, K. (2015). School climate, family structure, and academic achievement: A study of moderation effects. *School Psychology Quarterly*, 30(1), 142–157. <https://doi.org/10.1037/spq0000076>
- OECD. (2018). Teacher Questionnaire. Teaching and Learning International Survey (TALIS). <https://www.oecd.org/education/school/47788250.pdf>
- Pajares, M. F. (1992). Teachers' Beliefs and Educational Research: Cleaning Up a Messy Construct. *Review of Educational Research*, 62(3), 307–332. <https://doi.org/10.3102/00346543062003307>
- Pihama, L. (2019). Colonisation, Neoliberalism and Māori Education: Herbison Invited Lecture, NZARE Annual Conference 2017. *New Zealand Journal of Educational Studies*, 54(1), 5–19. <https://doi.org/10.1007/s40841-019-00130-7>
- Prast, E., Van De Weijer-Bergsma, E., Kroesbergen, E. H., & Van Luit, J. E. H. (2018). Differentiated instruction in primary mathematics: Effects of teacher professional development on student achievement. *Learning and Instruction*, 54, 22–34. <https://doi.org/10.1016/j.learninstruc.2018.01.009>
- Price, K., & Rogers, J. (2019). *Aboriginal and Torres Strait Islander Education*. Cambridge University Press.
- Ran, H., Kim, N., & Secada, W. G. (2021). A meta-analysis on the effects of technology's functions and roles on students' mathematics achievement in K-12 classrooms. *Journal of Computer Assisted Learning*, 38(1), 258–284. <https://doi.org/10.1111/jcal.12611>
- Reyes, J. a. L., Insorio, A. O., Ingreso, M. L. V., Hilario, F. F., & Gutierrez, C. R. (2019). Conception and Application of Contextualization in Mathematics Education. *International Journal of Educational Studies in Mathematics*, 6(1), 1–18. <https://dergipark.org.tr/en/download/article-file/664590>
- Rigney, L., Garrett, R., Curry, M. S., & MacGill, B. (2020). Culturally Responsive Pedagogy and Mathematics Through Creative and Body-Based Learning: Urban Aboriginal Schooling. *Education and Urban Society*, 52(8), 1159–1180. <https://doi.org/10.1177/0013124519896861>
- Rosnon, M. R. (2016). Indigenous education policy in Malaysia: a discussion of normalization in schooling. *Journal of Education and Social Sciences*, 4. <http://psasir.upm.edu.my/id/eprint/63986/>
- Šapkova, A. (2014). The Relationships Between the Traditional Beliefs and Practice of Mathematics Teachers and Their Students' Achievements in Doing Mathematics Tasks. *Problems of Education in the 21st Century*, 58(1), 127–143. <https://doi.org/10.33225/pec/14.58.127>
- Shah, R. K. (2019). Effective Constructivist Teaching Learning in the Classroom. *Shanlax International Journal of Education*, 7(4), 1–13. <https://doi.org/10.34293/education.v7i4.600>
- Shi, Q., Zhang, S., & Lin, E. (2014). Relationships of New Teachers' Beliefs and Instructional Practices: Comparisons Across Four Countries. *Action in Teacher Education*, 36(4), 322–341. <https://doi.org/10.1080/01626620.2014.948228>
- Sithole, N. (2017). Promoting a positive learning environment: School setting investigation. Master of Education with specialization in Curriculum and Instructional Studies. University of South Africa. <https://core.ac.uk/download/pdf/158577278.pdf>
- Starkey, L. (2019). A review of research exploring teacher preparation for the digital age. *Cambridge Journal of Education*, 50(1), 37–56. <https://doi.org/10.1080/0305764x.2019.1625867>
- Stronge, J. H. (2018). Qualities of Effective Teachers. http://www.hunter.cuny.edu/shp/centers/nycnect/greenteam/docs/qualities_of_effective_teachers.pdf
- Theobald, E. J., Hill, M. L., Tran, E., Agrawal, S., Arroyo, E. N., Behling, S., Chambwe, N., Cintrón, D. L., Cooper, J. D., Dunster, G. P., Grummer, J. A., Hennessey, K. M., Hsiao, J. L., Iranon, N. N., Jones, L. L., Jordt, H., Keller, M., Lacey, M. E., Littlefield, C. E., . . . Freeman, S. (2020). Active learning narrows achievement gaps for underrepresented students in undergraduate science,

- technology, engineering, and math. *Proceedings of the National Academy of Sciences*, 117(12), 6476–6483. <https://doi.org/10.1073/pnas.1916903117>
- Thomas, L. (2023, June 22). Cluster Sampling | A Simple Step-by-Step Guide with Examples. Scribbr. <https://www.scribbr.com/methodology/cluster-sampling/#:~:text=What%20is%20cluster%20sampling%3F,the%20population%20as%20a%20whole>.
- Tokac, U., Novak, E., & Thompson, C. C. (2019). Effects of game-based learning on students' mathematics achievement: A meta-analysis. *Journal of Computer Assisted Learning*, 35(3), 407–420. <https://doi.org/10.1111/jcal.12347>
- Velusamy, V. R. (2021). A Contemporary Overview about Status and Challenging Issues of Tribal Education in India. *International Journal of Asian Education*. <https://doi.org/10.46966/ijae.v2i2.96>
- Voskoglou, M. G. (2019). Comparing Teaching Methods of Mathematics at University Level. *Education Sciences*, 9(3), 204. <https://doi.org/10.3390/educsci9030204>
- Winstone, N., & Carless, D. (2019). Designing Effective Feedback Processes in Higher Education: A Learning-Focused Approach. <https://dialnet.unirioja.es/servlet/articulo?codigo=7562072>
- Yang, X., Kaiser, G., König, J., & Blömeke, S. (2020). Relationship between pre-service mathematics teachers' knowledge, beliefs and instructional practices in China. *Zdm - Mathematics Education*, 52(2), 281–294. <https://doi.org/10.1007/s11858-020-01145-x>
- Zakaria, E., & Maat, S. M. (2012). Mathematics Teachers' beliefs and teaching practices. *Journal of Mathematics and Statistics*, 8(2), 191–194. <https://doi.org/10.3844/jmssp.2012.191.194>
- Zakaria, E., & Musiran, N. (2010). Beliefs about the Nature of Mathematics, Mathematics Teaching and Learning Among Trainee Teachers. *The Social Sciences*, 5(4), 346–351. <https://doi.org/10.3923/sscience.2010.346.351>

A Mother's Woes: Implications of Gender-based Oppression on Single Motherhood

Cassandra S. Munsayac*, Allysa Joyce A. Zulueta, Ida Yeska I. Garcia,
Jdam Ross D.R. Bardelosa, John Ruselle D. Mateo, Joseph A. Villarama
Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines

*Corresponding Author Email: cassandra.munsayac@ushs.ph.education

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Abstract. The gender-based oppression single mothers face, affecting their psychosocial well-being, is often overlooked, especially in the Philippines. This study investigates gender-based oppression, such as misogyny and sexism in workplaces and the personal lives of single mothers, and how these correlate and affect their motherhood. Three single mothers, selected through purposive sampling, were interviewed using semi-structured and open-ended questions. This study applied the feminist theory of Mary Wollstonecraft to understand the struggles of women based on gender extensively. The interviews were transcribed, and the data were coded and analyzed thematically, generating four recurring themes. Results revealed that misogyny and sexism are both rooted in patriarchy, exposing single mothers to the internalization of gender-based oppression, affecting how they view themselves. Prevailing stereotypes and gender roles ingrained into the sociocultural framework of the Philippines increased society's expectations toward single mothers because of gender. Results showed that despite challenges, the rise of feminist and women's rights groups and movements increased recognition of women in the workforce, as single mothers expressed the lack of discrimination in their workplaces. The difficulties single mothers experienced only emboldened them and promoted women's empowerment among themselves and others. Overall, the study found that single mothers are still struggling due to gender-based oppression, highlighting the need for greater support for single mothers. Misogyny and sexism exist due to patriarchy, establishing harmful roles for women. Thus, this study significantly contributes to discussions of gender discrimination and how to foster safe places for all genders, specifically single mothers in the Philippines.

Keywords: Single motherhood; Gender-based oppression; Sexism; Misogyny; Feminist theory.

1.0 Introduction

Being a single mother stems from various circumstances: choice, separation, and the absence of paternal figures within parenthood (Golombok et al., 2020; Ali & Soomar, 2019). It is rarely by choice that women choose to be single mothers as the intersectional challenges of single motherhood, from socio-economic to political and from one's workplace to personal life, are prominent and prevailing (Kim & Kim, 2020). Women's maternal roles are deeply influenced by gender-based oppression as they experience misogyny and sexism (Lindsey, 2020). Further, even when men's roles are entirely excluded, the atrocities of patriarchy and hegemonic masculinity impacted how single mothers are perceived and treated today.

Parenting positions do not evolve outside of culture and ideology. Through complex power dynamics, the role of mothers is socially formed in the context of male dominance, as combated by the feminist view (Grosz, 2020), which has led women to become 'mothers' defined as favorable to men. Conservatism dominates the Philippines as Filipinos are generally governed by views like how sexism and misogyny are rooted in most religious traditions

and other cultural aspects (Bain, 2020; Pantaleon & Arguelles, 2020). Filipino people's religious convictions and philosophies largely reinforce their cultural ways (Macaranas, 2021). Filipinos, up to this day, still view a woman's job as restricted to domestic labor and that it all depends on the man to have financial gain, according to the 2021 International Social Survey Program (Buchhave & Belgith, 2022; Verniers & Vala, 2018). Any religious tradition that considers childbearing and homemaking to be women's responsibilities opposes societal efforts to secure female participation in all areas of society (Nason-Clark, 2020).

Misogynistic inclinations are not strange to civilization; instead, they saturate all levels of our lives. They are verbally heard and visually present in our nation's political, economic, social, cultural, and religious spheres (Nzeyo, 2019; Savigny, 2020). Society uses morality or principles of right vs. wrong in determining the suitability of single women as mothers (Scerri, 2020). However, given that they often raise most of the children, why are men as fathers not subject to the same scrutiny? This is due to the continuing exploitation by the patriarchy of the apparent "natural" bias of "women as carers" (Scerri, 2020). Sexism stems deep in our society; it is seen at all levels of our lives. They are seen in books read by children that include traditional gender stereotypes (ex., Boys are strong while girls are weak) (Leaper & Brown, 2018); when young girls who have yet to reach adolescence get sexualized and objectified (Muir, 2021); when women who enroll in male-dominated fields face gender-based discrimination (Blondé et al., 2022); as well as when women who enter male-dominated fields face sexual harassment (Rubin et al., 2019).

Single parents, particularly mothers, have more household responsibilities following a separation as they receive the custody of the child most of the time, they earn less money, which makes them more susceptible to falling victim to poverty (Harkness et al., 2020; Leopold, 2018; Munoz Boudet et al., 2018). The approach to lessen the financial burden, expanding work hours, can make it harder for single mothers to retain the kind of role they desire to provide (Thielemans & Mortelmans, 2019).

To better understand how gender-based oppression impacts single mothers psychosocially throughout their parenthood, the Feminist theory of Mary Wollstonecraft was used as a theoretical underpinning of this comprehensive study. The fundamental objective of feminist theory is to examine the societal framework in a manner that brings to light the factors that foster discrimination, marginalization, and unfairness. By doing so, it advocates for the pursuit of fairness and impartiality. (Crossman, 2021). This theoretical framework focuses on understanding how gender-based oppression and inequality impact women's lives and experiences, examining the social, cultural, and economic factors contributing to their marginalization and disadvantage. Through feminist theory, researchers identified specific ways in which single mothers are affected by gender-based oppression, such as discrimination in the workplace and limited access to resources and support systems. Furthermore, feminist theory suggests solutions to these issues, such as advocating for policy changes that address gender-based inequality and supporting community-based organizations that offer resources and services to single mothers.

Given this, the study aims to illuminate how gender-based oppression against single mothers occurs in the workplace and one's personal life. This psychosocial study focuses on fleshing out the experience of single mothers with gender-based oppression, especially elucidating the characterization of sexism and misogyny as pervasive to the role of being a mother. Moreover, this study is a significant contribution to the field of gender studies as it gives an in-depth analysis of how gender correlates to the challenges and societal issues a person faces throughout their parenthood. In doing so, this research helps pave the way for more policies and interventions regarding the security of the social welfare of single mothers worldwide, particularly in the Philippines, where there is an increasing need to address the contentious issues involving gender oppression.

1.1 The Current State of Filipino Single Mother

Motherhood is incredibly difficult, especially for single mothers as they have conflicts and societal pressure to endure (Kohl, 2021). Premarital sex, separation or annulment, widowhood, and women choosing to raise their child alone increase the population percentile of Filipino single moms. Single-parent households are now more common than conjugal families consisting of two parents and children (APA, 2019). The demographic of a single woman raising a child is not limited to middle-aged women since college students also become victims of

unplanned pregnancies (Sicam et al., 2021). Likewise, young girls aged 15 to 17 are targets of early parenthood, particularly in low-income countries.

Single moms experience gender-based oppression due to the socially constructed, established gender roles deeply entrenched in the Philippine sociocultural framework (Bain, 2020). Single women are expected to handle everything alone, such as financial management, jobs, and child care (Suminar et al., 2018). Filipino women, compared to men, are often disadvantaged because the gender-based oppression they face makes necessities like social protection and a formal high-paying job inaccessible. Since single mothers are more committed to parenthood, their careers are unaffected by allocation cuts and unemployment (Pedrosa, 2020). As such, single-parent households, especially those of single mothers' average income is only half a two-parent household, which leads to an increased poverty rate and work hours spent earning money (Bahk, 2019). Moreover, nationwide prejudice in the Philippines makes a single mother's child more susceptible to scrutiny and stigma politically, sociologically, and psychologically (Ramos & Tus, 2020).

1.2 Implications of Gender-based Oppression in the Workplace

Benevolent sexism devalues a woman's worth by comparing her to a man (Cassidy & Krendl, 2019), legitimizing inequalities and hostile sexism that halt gender equality. It also stifles women's career advancement by veiled bigotry, prioritizing male benefactors, limiting women's employment opportunities, and gender injustice (Glick & Raberg, 2018). Hostile sexism and misogyny involve aggressive attitudes toward women (Hammond et al., 2018), such as unwanted verbal conduct, unwanted physical conduct, unwanted attention, unwanted advances, and other issues that range from sexist microaggressions to full-on sexual assault in the workforce (Cox & Jewitt, 2022).

Gender-based oppression in the workforce involves sexism in interactions and institutional sexism (when policies, attitudes, procedures, and laws enforce sexism). A woman's identity negatively affects them within workplaces since institutional sexism remains pervasive in institutions (Dutta, 2019). Women encounter institutionalized bigotry as they face harassment, underpayment, harsh judgments, and lack of promotions because of their gender (Barnes & Adams, 2022; Blau & Kahn, 2020; Lu et al., 2020). Gender privilege disparities often lead to lower self-esteem in women. Another study indicates that this injustice is normalized because women are programmed to obey rules and believe that the standard they are put through is ideal (EIGE, 2020). In addition, sexists and misogynists overuse the presumption that a woman's career threatens the traditional structure of a typical family to justify their intolerance against employed women. This normalizes and legitimizes sexist ideals to be displayed in the workplace (Verniers & Vala, 2018).

1.3 Implications of Gender-based Oppression in Motherhood

Women, especially single mothers, need significant adjustments in their daily lives as they approach motherhood (Forbes et al., 2020). Childbirth drives women into an unfamiliar life that requires them to restructure their roles, tasks, daily activities, and familial dynamics (Siegel & Calogero, 2019). Further, the intensive mothering demands impose unreasonable parenting standards and hindrances to women's growth and mental health (Prikhidko & Swank, 2018). It is overwhelming that parenting standards have grown drastically while support services have evaporated leading to mothers blaming themselves for the fault of a flawed system and reality distortions (Siegel & Calogero, 2019) since sexism remains prevailing in today's society and affects the ways of parenting and socialization despite many efforts to abolish the sexist system (Barni et al., 2022). People may unknowingly be benevolent sexist because the term is so nuanced, and it favors feminine tropes, which is why it is advocated by all (Mastari et al., 2019). Mothers' benevolent sexism manifests as projecting conservatism or self-protective values, such as avoiding conflict and preserving tradition as an act of security. Consequently, mothers' benevolent sexist views are often rooted in their conservatism and the yearning to protect women by reinforcing outdated gender roles (Barni et al., 2022).

Mothers' gatekeeping views and behaviors positively link with hostile sexist attitudes (Schoppe-Sullivan et al., 2019). Hostile sexism distorts the perception of mothers toward parenting because they perceive fathers as incapable of nurturing and raising a child and other domestic responsibilities. Further, a hierarchical power structure is illuminated by negative perceptions of gender that imply relationships between genders as a fight for dominance (Gaunt et al., 2018). A patriarchal parenting style that encourages protective attitudes from men

toward women can expose children to benevolent sexism (Rached et al., 2021). Mothers with benevolent sexism value their responsibilities within parenthood and are reluctant to share them. It has also been shown that maternal gatekeeping is linked to increased maternal involvement in childcare and decreased paternal involvement (Gaunt et al., 2018). Furthermore, sexism is proven to have increased a mother's anxiety levels, which she unknowingly applies to her parenthood (Feigt, 2018).

2.0 Methodology

2.1 Research Design

This psychosocial research ought to deeply analyze single mothers' personal experiences with gender-based oppression. Given such, Interpretative Phenomenological Analysis is the most suitable research design for this study. This research design is grounded in multiple ideologies, such as phenomenology, hermeneutics, and idiographics. The fundamental principles of this design are analyzing people's subjective lived experiences and how they interpret and project these experiences into their personal and social lives (Love, 2020; Smith & Nizza, 2022). This study thoroughly uses IPA in analyzing how single mothers view gender-based oppression as an obstacle to their motherhood and overall personal lives.

2.2 Research Locale

The study was carried out in San Jose City, Province of Nueva Ecija, Central Luzon, Philippines. This study's research area included the participants' residences and public areas such as barangay halls. It is located north of Cabanatuan City and located northeast of the Science City of Muñoz. The city occupies 185.99 square kilometers (71.81 square miles), or 3.23 percent of Nueva Ecija.

2.3 Research Participants

This study has a target subject, so the sampling technique of amassing interviewees is purposive. Three single mothers are compelled through the approval of pivotal informants within urban and semi-urban areas within the province of Nueva Ecija. Selection criteria are as follows: (1) unmarried women above the age of 18, (2) having at least one child, (3) having some experience with being a single mom. Table 1 shows the profile of all research subjects.

Table 1. Profile of participants

Participant	Age	No. of Children	Occupation
P1	42	2	Barangay Counselor
P2	48	4	Business Woman
P3	24	2	House Keeper

2.4 Research Instrument

The interview questions were formulated by the researchers and then approved for implementation. It contained 10 questions aimed to delve into the personal experiences of single mothers regarding gender-based oppression, such as Misogyny and Sexism in their workplace and personal lives. Moreover, the research questions covered the challenges single mothers face throughout their motherhood. The participation was completely voluntary, and all the participants were given time to read through the interview questions and their rights to refuse.

2.5 Data Gathering Procedure

In-person interviews took place at the respondents' respective residences. Participants were prepared by scanning an informational missive containing the objectives and methods of the analysis to be conducted. Participants have ample time to review their study-related privileges during the interview. All interviewees have the right to uphold their privacy and confidentiality, refuse and stop participating at any time, inquire about the methods and purposes of audio recording and transcription, and know whom to contact with any questions or concerns. Each interview ranged from 1 to 2 hours (Matsuzaka et al., 2019). The researchers ensure the accuracy, reliability, and credibility of information and findings through the implementation of data cross-checking and triangulation.

2.6 Ethical Considerations

This study is approved by the Central Luzon State University's Ethics Review Committee with the review code 2023-156 indicating that all the risks and concerns regarding this research have been considered, minimized, and eliminated. As part of the ethical considerations of this study, the following are observed:

Informed Consent and Data Privacy Clause and Consent

The modified consent form provides participants with all the information they need to make an informed decision about whether or not to take part in the study. Both the Data Privacy Clause and the Consent are presented at the outset of the survey.

Voluntary Participation

In accordance with what is stated on the consent form, participants have the freedom to join or withdraw from the study at any time without any penalty. Participation in this survey is voluntary for those who are asked.

Confidentiality and Data Privacy Clause and Consent

Since the participants remain anonymous, the researchers cannot identify them. The researchers privately asked individuals for their participation in the study. Experts don't give out any of their findings to the public. To prevent individuals from being identified inside the data scientists collect, they mask their identities. Both the Data Privacy Clause and the Consent are presented at the outset of the survey.

Results Communication

Both plagiarism and research misconduct are not present in the study. The study adheres to all ethical standards and guidelines. The results shall be represented truthfully by the researchers.

3.0 Results and Discussion

Four recurring themes were derived.

3.1 Theme 1: Gender-based Oppression Grounded on Patriarchy

Subjects expressed the gender-based oppression they received from their surroundings. Patriarchy is a prevailing system surrounding contemporary issues, such as gender-based oppression. One of the subjects mentioned that their husband's restrictive behavior caused their split, and separating from the husband brought them liberation.

"...yes, it was easy, I suppose, yeah, it was easy. Hehe, it is because uhm– I am happier as a single mother since I previously had multiple limitations; I was not allowed to go outside our home, but now I can do everything I want to do..."

Divorce had positive consequences. Women felt calmer after conflicts in their households ended- they felt a sense of liberation and freedom (González Granados et al., 2022). The subject's response implied that male presence restricts women because of machismo, an aggressive masculine ego. Patriarchy builds on structural violence against women in the form of gender-based oppression that often limits and excludes women (Onwutuebe, 2019; Grosz, 2020; Khan et al., 2022).

"...yes, everything I did was restricted back then. When we were together, everything was restricted. Yes, it was strict; I needed to–I could not even go outside back then. If I do go out, I had to head back within 2 hours... it had to–even the–even the time when I had to cook–the schedule of my household chores, all of that was controlled by him..."

Moreover, subjects exhibited internalized misogyny due to constant exposure to a patriarchal environment (Cherry & Wilcox, 2020). This exposure has made subjects think that having a male presence is more effective in raising respectable children. Their responses implied that people, children in particular, are more likely to follow male domination as opposed to women, which is a form of discrimination.

"... it is because of the thing we call disciplinary action. When it comes to the father, disciplinary action is there so that children will become obedient; because you are a father, you need to commit to your words since you are the father in your family..."

In patriarchal societies, males are seen as superior, and the gender expectations from the gender roles significantly impact individuals. Both the direct and indirect enforcement of these roles put men and women in a predicament, leaving them to struggle with how they could not conform to these expectations (Rudden, 2022; Guy-Evans, 2023).

Results implied that the internal and external misogyny received during their marriage had impacted the single mothers mentally and in their interpersonal relationships with others.

3.2 Theme 2: Social Justice - Modernization Leads to Progressiveness

Society changes as time progresses, and while some things remain constant, some things progress, such as workplace equality. Subjects expressed the lack of workplace oppression throughout their employment, and some even found it empowering. A single mother stated:

"...actually, in our local government unit, I am the only counselor who is a woman. So, for me, I am flattered..."

Subjects' responses implied how most workplaces in the Philippines had dismantled misogynist and sexist views regarding employment. All subjects interviewed have stated fairness and equality in their workplaces. Moreover, the World Economic Forum's Global Gender Report proved that the Philippines is one of the top nations in effectively handling gender inequality (Gita-Carlos, 2022).

Additionally, subjects had a favorable view of working women, especially mothers. Results showed that society has progressed to a point where there is only minimal workplace oppression. This is due to all the rising feminist groups and women's rights movements that pioneered equality regardless of gender (d'Eaubonne, 2022; ACLU, 2022; Barker & Jurasz, 2019).

3.3 Theme 3: Double Burden - Increased Societal Pressure on Women

Subjects expressed their difficulties in managing their household alone. Single parenting has pushed them to bear the burden and responsibilities of both a father and mother regarding financial support, raising children, and governing the whole house (Collins, 2019). The interview shed light on the harrowing experiences of single mothers in terms of loneliness and pressure.

A single mother mentioned:

"...for us women, the pressure is that we are already single, we need to provide, and we need to act as both a mother and father for our children. Besides that, we are the ones responsible for raising and enhancing our children—so that they can grow up as proper members of society; aside from that, we are the ones responsible for funding their education..."

The increased societal pressure on women is grounded in the ingrained gender-based oppression, particularly in Filipino families. Filipino culture has been deeply influenced by traditionalist perspectives, which require single mothers to take all the burden of childcare (Bain, 2020; Suminar et al., 2018). Filipino families are influenced by a paternalistic culture promoting sexist stereotypes that view women as housekeepers and men as providers. A 2022 OXFAM survey confirmed that women are still pressured to do domestic labor, while men are expected to carry financial responsibilities.

Results implied that subjects' main challenge lies with being alone to carry all responsibilities. Moreover, gender-based oppression has only increased pressure and expectations on women, which led to a rise in problems in single motherhood (Harkness et al., 2020; Leopold, 2018; Munoz Boudet et al., 2018). The increased pressure also affects single mothers psychologically, leading to problems such as anxiety and depression (Liang et al., 2019; Meeussen & Van Laar, 2018). Subjects implied that the thought of managing everything alone was overwhelming and led them to have self-deprecating thoughts.

"...when I was in my room, I saw the four corners of my room. It was at that moment that I realized that I was alone, I was by myself, there was no one beside me in my bed... it cannot be avoided... sometimes we tend to pity ourselves, no?"

The study of Garcia et al. (2021) showed similar findings, indicating that their partners' absence rendered single mothers emotionally turbulent. Results confirmed the psychosocial struggles single mothers face with increased societal pressure.

3.4 Theme 4: Women Empowerment - Feminism Among Mothers

Women's empowerment is a critical aspect of gender equality and involves empowering women to take control of their lives, make their own decisions, and have access to resources and opportunities. Single mothers who independently raise their children are women who have faced particular challenges and benefit significantly from women's empowerment and feminism.

Initially, the idea of raising children alone was daunting. However, one of the subjects conveyed that single parenting has allowed them to have a stronger resolve, leading to personal growth.

"...when I became single, I became braver. My strength became stronger. I was all the more strengthened because of the obstacles that I faced in my life...I need to raise the women's flags-our flags."

As a single mother, a woman may face unique obstacles and responsibilities that can impact her personal growth and development (Richard et al., 2019; Kim & Kim, 2020;). Despite these challenges, many single mothers can experience significant personal growth and development as they navigate the ups and downs of parenting alone. Ultimately, personal growth in single mothers is a complex and dynamic process that can vary greatly depending on the individual's experiences and circumstances (Stainton et al., 2018).

Further, another single mother expressed that being single did not negatively affect them. They have instead experienced the advantages that come with the role. Furthermore, being single has given them more flexibility as they can make their own choices without considering anyone else's opinions and compromise with a partner.

"... there is none- there is no disadvantage if anything, it is more of an advantage..."

Being a single mother can free up additional options for parenting approaches. Single women can decide how to raise their kids without having to make concessions to a spouse. Additionally, they can create a unique parenting approach that fits the requirements and ideals of their own family (Callaghan et al., 2021).

Results implied that while being a single parent may come with its challenges, it also has advantages. These include a strong bond with one's child, a sense of independence and self-sufficiency, more flexibility in parenting style and personal choices, and opportunities for personal growth and development (Bowie, 2019). With the right mindset and support, single mothers can thrive and provide their children with a loving and nurturing home.

4.0 Conclusion

Gender-based oppression still happens and is still affecting women, particularly single mothers. Based on the study's findings, it is concluded that most single mothers face problems due to societal expectations and gender roles, which are rooted in gender-based oppression. Moreover, the illuminated experiences showed that single mothers find the thought of being alone as discriminatory because of internalized misogyny that pushes them to think they need a male presence to raise their children more effectively.

Additionally, results implied that Misogyny and Sexism correlate in a way that they are both due to the ingrained ideals of patriarchy in society. These ideals are why single mothers have struggled with stigma and problems up until now. Gender-based oppression has affected how single mothers perceive themselves and their capabilities to raise their children. Despite that, these struggles became an opportunity for single mothers to promote women's empowerment and show that women are as capable as men. It is concluded that subjects took their motherhood as a means of personal growth and development.

Gender-based oppression is a multifaceted concept that can be experienced differently by varying people. This study's results and related literature illuminated the harrowing yet empowering experiences of single mothers concerning gender-based oppression. In light of this study, the researchers recommend going more in-depth,

focusing on one main topic, choosing the data analysis method carefully, and employing measures to ensure data validity and reliability.

The study only covered the surface of what gender-based oppression is by illuminating the lived experiences of single mothers. Thus, it is recommended that future researchers expand on the issues covered by gender-based oppression of all women rather than only single mothers. Similarly, the study focused on two main ideas: single motherhood and gender-based oppression, which needed clarification in distinguishing the main topic of the study. Hence, future researchers should focus on one main topic to expand on profoundly and avoid difficulties in consistency. Moreover, the data analysis used was thematic analysis, which created mild inconsistencies in generating themes. Future researchers are recommended to carefully choose their data analysis method to avoid similar problems from arising. Lastly, the study only interviewed three participants, which can lead to issues with data credibility, but measures were taken to ensure validity, such as data cross-checking and triangulation. Therefore, future researchers are recommended to employ rigorous data validation.

5.0 Contributions of Authors

Conceptualization of the Study – JAVillarama, CSMunsayac, AJAZulueta, IYIGarcia, JRDRBardelosa, JRDMateo

Literature Review – JAVillarama, CSMunsayac, AJAZulueta, IYIGarcia

Research Design – JAVillarama, CSMunsayac

Development of Guide Questions – JAVillarama, CSMunsayac, JRDMateo, JRDRBardelosa

Gathering of Data – JAVillarama, CSMunsayac, AJAZulueta, IYIGarcia, JRDRBardelosa, JRDMateo

Data Interpretation – JAVillarama, CSMunsayac, AJAZulueta, IYIGarcia,

Writing and Editing – JAVillarama, CSMunsayac, AJAZulueta, IYIGarcia, JRDRBardelosa

Formatting – JAVillarama, CSMunsayac, AJAZulueta, IYIGarcia

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The authors affirm that there is no conflict of interest.

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9.0 References

- Ali, S. K., & Soomar, S. M. (2019). Single parenting: Understanding reasons and consequences. *JOJ Nursing and Health care*, 10(2), 001-003. <http://dx.doi.org/10.19080/JOJNHC.2019.10.555781>
- American Psychological Association. (2019). Single parenting and today's family. <https://www.apa.org/topics/parenting/single-parent>
- Bahk, E. (2019, July 23). Single-parent families suffer financial difficulties. *Koreatimes; The Korea Times*. https://www.koreatimes.co.kr/www/nation/2023/02/113_272753.html
- Bain, M. C. (2020). Exploring the challenges of single mothers in the Philippines: Empowerment as a diaconal task of the Evangelical church in the Philippines. *Unit.no*. <https://doi.org/https://hdl.handle.net/11250/2825396>
- Barker, K., & Jurasz, O. (2019). Online misogyny. *Journal of International Affairs*, 72(2), 95-114. <https://www.jstor.org/stable/26760834>
- Barnes, S., & Adams, M. L. (2022). A large and troubling iceberg: sexism and misogyny in women's work as sport coaches. *Sports Coaching Review*, 11(2), 127-146. <https://doi.org/10.1080/21640629.2021.1975940>
- Barni, D., Fiorilli, C., Romano, L., Zagrean, I., Alfieri, S., & Russo, C. (2022). Gender Prejudice Within the Family: The Relation Between Parents' Sexism and Their Socialization Values. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.846016>
- Blau, F. D., & Kahn, L. M. (2020). The gender pay gap: Have women gone as far as they can?. In *Inequality in the United States: A Reader* (pp. 345-362). Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003071709-31/gender-pay-gap-women-gone-far-francine-blau-lawrence-kahn>
- Blondé, J., Gianettoni, L., Gross, D. et al. (2022) Hegemonic masculinity, sexism, homophobia, and perceived discrimination in traditionally male-dominated fields of study: A study in Swiss vocational upper-secondary schools. *Int J Educ Vocat Guidance*. <https://doi.org/10.1007/s10775-022-09559-7>

- Bowie, L. (2019). Single mothers' narratives of strength, with a focus on resiliency and resourcefulness (Doctoral dissertation, City University of Seattle). <http://hdl.handle.net/20.500.11803/793>
- Buchhave, H., & Belgith, N. B. H. (2022). Overcoming barriers to women's work in the Philippines. World Bank Blogs. <https://blogs.worldbank.org/eastasiapacific/overcoming-barriers-womens-work-philippines>
- Callaghan, M. A., Watchiba, D., Purkey, E., Davison, C. M., Aldersey, H. M., & Bartels, S. A. (2021). "I Don't Know Where I Have to Knock for Support": A Mixed-Methods Study on Perceptions and Experiences of Single Mothers Raising Children in the Democratic Republic of Congo. *International Journal of Environmental Research and Public Health*, 18(19), 10399.
- Cassidy, B. S., & Krendl, A. C. (2019). A crisis of competence: Benevolent sexism affects evaluations of women's competence. *Sex Roles*, 81(7-8), 505-520. <https://doi.org/10.1007/s11199-019-1011-3>
- Cherry, M. A., & Wilcox, M. M. (2021). Sexist microaggressions: Traumatic stressors mediated by self-compassion. *The Counseling Psychologist*, 49(1), 106-137. <https://journals.sagepub.com/doi/pdf/10.1177/0011000020954534>
- Collins, C. (2019). Making motherhood work. In *Making Motherhood Work*. Princeton University Press. <https://doi.org/10.1515/9780691185156>
- Cox, R., & Jewitt, C. (2022). Surviving in scrubs: sexism, sexual harassment, and assault in the primary care workforce. *British Journal of General Practice*, 72(723), 466-467. <https://doi.org/10.3399/bjgp22X720749>
- Crossman, Ashley. (2021). Feminist Theory in Sociology. Retrieved from <https://www.thoughtco.com/feminist-theory-3026624>
- Diaz-Serrano, L., & Flamand, S. (2020). Schools' Attitudes Towards Single Parents: Experimental Evidence. <https://dx.doi.org/10.2139/ssrn.3695400>
- Dutta, S. (2019). The Challenges Faced By Women In The Workplace. Nurture an Engaged and Satisfied Workforce | Vantage Circle HR Blog; Nurture an Engaged and Satisfied Workforce | Vantage Circle HR Blog. <https://blog.vantagecircle.com/women-in-the-workplace/>
- Feigt, N. (2018). The Relationship of Gender-Based Microaggressions and The Relationship of Gender-Based Microaggressions and Internalized Sexism on Mental Health Outcomes: A Mother-Daughter Study. <https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=8419&context=etd>
- Forbes, L. K. (2020). Differences in Intensive Parenting Attitudes and Gender Norms Among U.S. Mothers - Lisa K. Forbes, Courtney Donovan, Margaret R. Lamar, 2020. *The Family Journal*. <https://journals.sagepub.com/doi/full/10.1177/1066480719893964>
- Garcia, S. R., Daez Lim, W. C., Pascua, P. K., & Santiago, M. P. (2021). Inang Tatay: The Journey of Single Moms Amidst COVID 19 Pandemic. ResearchGate; unknown. https://www.researchgate.net/publication/349089036_Inang_Tatay_The_Journey_of_Single_Moms_Amidst_COVID_19_Pandemic
- Gaunt, R., & Pinho, M. (2018). Do sexist mothers change more diapers? Ambivalent sexism, maternal gatekeeping, and the division of childcare. *Sex Roles*, 79(3-4), 176-189. <https://doi.org/10.1007/s11199-017-0864-6>
- Gita-Carlos, R. A. (2022). Inequality, stigma push Filipinas to keep soaring. Pnagovph; Philippine News Agency. <https://www.pna.gov.ph/articles/1169528>
- Glick, P., & Raberg, L. (2018). Benevolent sexism and the status of women. In C. B. Travis, J. W. White, A. Rutherford, W. S. Williams, S. L. Cook, & K. F. Wyche (Eds.), *APA handbook of the psychology of women: History, theory, and battlegrounds* (pp. 363-380). American Psychological Association. <https://doi.org/10.1037/0000059-018>
- Golombok, S., Zadeh, S., Freeman, T., Lysons, J., & Foley, S. (2020). Single mothers by choice: Parenting and child adjustment in middle childhood. *Journal of Family Psychology*, 35(2). <https://doi.org/10.1037/fam0000797>
- González Granados, P., Valero Errazu, D., & Sierra Berdejo, M. J. (2022). 'For me, it was a liberation, like being free again.' A qualitative approach to the care trajectories of divorced mothers in Spain. *Families, Relationships and Societies*, 1-16. <https://doi.org/10.1332/204674321X16648932926816>
- Grosz, E. (2020). *Sexual subversions*. Routledge.
- Guy-Evans, O. (2023). Patriarchal Society According to Feminism. Simply Sociology. <https://simplysociology.com/patriarchal-society-feminism-definition.html>
- Hammond, M. D., Milojev, P., Huang, Y., & Sibley, C. G. (2018). Benevolent sexism and hostile sexism across the ages. *Social Psychological and Personality Science*, 9(7), 863-874. <https://doi.org/10.1177/1948550617727588>
- Harkness, S., Gregg, P., & Fernández-Salgado, M. (2020). The Rise in Single-Mother Families and Children's Cognitive Development: Evidence From Three British Birth Cohorts. *Child Development*, 91(5), 1762-1785. <https://doi.org/10.1111/cdev.13342>
- Hyland, M., Djankov, S., & Goldberg, P. K. (2020). Gendered laws and women in the workforce. *American Economic Review: Insights*, 2(4), 475-490.
- Khan, M. M., Jakaria, M. S. M., Jhuma, C. F., & Miah, Md. S. (2022). Challenges of Single Motherhood in Socio-Cultural Context: A Qualitative Study in Rural areas of Bangladesh. *Space and Culture, India*, 10(2), 52-65. <https://doi.org/10.20896/saci.v10i2.1282>
- Kim, G. E., & Kim, E. J. (2020). Factors affecting the quality of life of single mothers compared to married mothers. *BMC Psychiatry*, 20, 1-10. <https://doi.org/10.1186/s12888-020-02586-0>
- Kohl, H. (2021, September 17). Struggles of Single Motherhood - Acenda. Acenda. <https://acendahealth.org/blog/struggles-of-single-motherhood/>
- Leaper, C., & Brown, C. S. (2018). Sexism in childhood and adolescence: Recent trends and advances in research. *Child development perspectives*, 12(1), 10-15. <https://doi.org/10.1111/cdep.12247>
- Leopold, T. (2018). Gender Differences in the Consequences of Divorce: A Study of Multiple Outcomes. *Demography*, 55(3), 769-797. <https://doi.org/10.1007/s13524-018-0667-6>
- Liang, L. A., Berger, U., & Brand, C. (2019). Psychosocial factors associated with symptoms of depression, anxiety and stress among single mothers with young children: A population-based study. *Journal of affective disorders*, 242, 255-264. <https://psycnet.apa.org/doi/10.1016/j.jad.2018.08.013>
- Lindsey, L. L. (2020). *Gender: Sociological Perspectives*. Routledge. <https://doi.org/10.4324/9781315102023>

- Lopez, G. P. R., & San Juan, E. G. (2020). Socio-economic status and livelihood prospects of solo parents in Catanduanes, Philippines. <https://www.semanticscholar.org/paper/Socio-economic-status-and-livelihood-prospects-of-Lopez/2b73ace61f7e6432ffd2c613c09a10424b957719>
- Lu, Y. C., Walker, R., Richard, P., & Younis, M. (2020). Inequalities in poverty and income between single mothers and fathers. *International journal of environmental research and public health*, 17(1), 135. <https://www.mdpi.com/1660-4601/17/1/135>
- Mastari, L., Spruyt, B., & Siongers, J. (2019). Benevolent and Hostile Sexism in Social Spheres: The Impact of Parents, School and Romance on Belgian Adolescents' Sexist Attitudes. *Frontiers in Sociology*, 4. <https://doi.org/10.3389/fsoc.2019.00047>
- Meeussen, L., & Van Laar, C. (2018). Feeling Pressure to Be a Perfect Mother Relates to Parental Burnout and Career Ambitions. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.02113>
- Muir, C. (2021). STOP: The Sexualization of Women & Girls. <http://hdl.handle.net/20.500.12648/7070>
- Munoz Boudet, A. M., Buitrago, P., De La Briere, B. L., Newhouse, D., Rubiano Matulevich, E., Scott, K., & Suarez-Becerra, P. (2018). Gender Differences in Poverty and Household Composition through the Life-cycle: A Global Perspective. World Bank, Washington, DC. <https://doi.org/10.1596/1813-9450-8360>
- Nason-Clark, N. (2020). When Terror Strikes at Home: The Interface Between Religion and Domestic Violence. *Family Rights and Religion*, 245–252. <https://doi.org/10.43>
- Nzeyo, G. E. (2019). Christianity, misogyny, and women. *Lwati: A Journal of Contemporary Research*, 16(3), 164–181. <https://www.ajol.info/index.php/lwati/article/view/189910>
- OXFAM. (2022). Survey: Filipinos still believe gender stereotypes on breadwinning, unpaid care work but positive changes seen | Oxfam Philippines. <https://philippines.oxfam.org/latest/press-release/survey-filipinos-still-believe-gender-stereotypes-breadwinning-unpaid-care-work>
- Pantaleon, C., & Arguelles, C. V. (2020). Unholy alliance? Ordinary religious Christian women's responses to Rodrigo Duterte's gendered populism. *Review of Women's Studies*. https://www.academia.edu/43856891/Unholy_alliance_Ordinary_religious_Christian_womens_responses_to_Rodrigo_Dutertes_gendered_populism
- Pedrosa, C. N. (2020, August 22). The impact of covid on women and the poor especially in the Philippines. <https://www.philstar.com/opinion/2020/08/23/2037198/impact-covid-women-and-poor-especially-philippines>
- Prikhidko, A., & Swank, J. (2018). Motherhood Experiences and Expectations: A Qualitative Exploration of Mothers of Toddlers. *The Family Journal*. <https://journals.sagepub.com/doi/abs/10.1177/1066480718795116>
- Rached, M. A., Hankir, A., & Zaman, R. (2021). Patriarchal Upbringing in the 21st Century: The Impact Emotional Abuse Related to Parental Styles Has on the Genesis of Gender Inequality and the Development of Unresolved Trauma in Children. *Psychiatria Danubina*, 33(Suppl 11). <https://pubmed.ncbi.nlm.nih.gov/34862904/>
- Ramos, E. S., & Tus, J. (2020). Beating the Odds: An Exploratory Study on Single Mothers' Lived Experiences in Child-Rearing Practices. *Asian Journal of Current Research*, 5(1), 58–70.
- Rubin, M., Paolini, S., Subašić, E., & Giacomini, A. (2019). A confirmatory study of the relations between workplace sexism, sense of belonging, mental health, and job satisfaction among women in male-dominated industries. *Journal of Applied Social Psychology*, 49(5), 267–282. <https://doi.org/10.1111/jasp.12577>
- Rudden, M. G. (2022). Misogyny and Gender Role Straight-Jackets: A Psychoanalytic Perspective. *Psychoanalytic Inquiry*, 42(7), 557–566. <https://doi.org/10.1080/07351690.2022.2121146>
- Savigny, H. (2020). Sexism and misogyny. *The International Encyclopedia of Gender, Media, and Communication*, 1–7. <https://onlinelibrary.wiley.com/doi/10.1002/9781119429128.iegmc092>
- Scerri, J. (2020). The power and the passion: Representations of single motherhood in contemporary Australian literature. *Global Media Journal: Australian Edition*, 14(1). https://www.hca.westernsydney.edu.au/gmjau/wp-content/uploads/2020/10/GMJAU-The-power-and-the-passion_Representations-of-single-motherhood-in-contemporary-Australian-literature.pdf
- Schoppe-Sullivan, S. J., & Altenburger, L. E. (2019). Parental Gatekeeping. *Handbook of Parenting*, 167–198. <https://doi.org/10.4324/9780429433214-5>
- Sexism at work. (2020, November 10). European Institute for Gender Equality; EIGE. <https://eige.europa.eu/publications/sexism-at-work-handbook/part-1-understand/sexism-work-24/9781003075127-15>
- Sicam, E. B., Umawid, M. D., Colot, J. D., Dagdag, J. D., & Handrianto, C. (2021). Phenomenology of Parenting while Schooling among Filipino College Student Mothers in the Province. *KOLOKIUJ Jurnal Pendidikan Luar Sekolah*, 9(2), 83–97. <https://doi.org/10.24036/kolokium-pls.v9i2.483>
- Siegel, J. A., & Calogero, R. M. (2019). Conformity to feminine norms and self-objectification in self-identified feminist and non-feminist women. *Body Image*, 28, 115–118. <https://doi.org/10.1016/j.bodyim.2019.01.005>
- Smith, J. A., & Nizza, I. E. (2023). IAPA PsycNet. <https://psycnet.apa.org/record/2021-53744-000>
- Stainton, A., Chisholm, K., Kaiser, N., Rosen, M., Upthegrove, R., Ruhrmann, S., & Wood, S. J. (2018). Resilience as a multimodal dynamic process. *Early Intervention in Psychiatry*, 13(4), 725–732. <https://doi.org/10.1111/eip.12726>
- Suminar, J. R., Indrayanti, Siswadi, A. G. P., & Setianti, Y. (2018). Single Mother Role in the Success of their Children (Phenomenological Study of Single Women in Makassar City) | Emerald Insight. <https://doi.org/10.1108/S2516-2853201801>
- Thielemans, G. & Mortelmans, D. (2019). Female Labour Force Participation After Divorce: How Employment Histories Matter. *Journal of Family and Economic Issues*, 40, 180–193. <https://link.springer.com/article/10.1007/s10834-018-9600-9>
- Verniers, C., & Vala, J. (2018). Justifying gender discrimination in the workplace: The mediating role of motherhood myths. *PloS one*, 13(1), e0190657. <https://doi.org/10.1371/journal.pone.0190657>
- Whytock, E. (2021). Dissertation Proposal. Ellie's Blog; Ellie's Blog. <https://elliwhytock.wordpress.com/>

21st Century Leadership Skills, Technological Competence and School Performance

Rences G. Gardose^{1*}, Nerces G. Gardose²

¹West Visayas State University Calinog Campus, Iloilo, Philippines

²Candelaria Elementary School, Candelaria, Capiz, Philippines

*Corresponding Author Email: rences.gardose123@wvsu.edu.ph

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Abstract. This study ascertained the level of 21st-century leadership skills of school heads, the technological competence of teachers, and school performance. The descriptive-correlational research method was employed in this study. The main respondents of the study comprised 9 school heads and 45 elementary school teachers. Results revealed that school heads and teachers exhibit similar trends in their profiles, sharing commonalities in sex, age, and educational attainment. Most school heads boast over two decades of service, contrasting with teachers who are relatively new to the profession. Despite demographic differences, school heads display very satisfactory leadership skills across all indicators, showcasing consistency regardless of factors like sex, educational background, or length of service. Conversely, while teachers generally demonstrate proficiency in technology, they require further development in areas such as productivity, professional practice, and addressing social, legal, and human issues. Nevertheless, their technological competence remains consistent across different demographic profiles, indicating comparable proficiency. Assessments of both office and learners' performances range from very satisfactory to outstanding. Interestingly, there is no direct correlation observed between the leadership skills of school heads, the technological competence of teachers, and overall school performance, suggesting a complex interplay of factors influencing educational outcomes. The findings of this study can contribute to discussions to improve the quality of education.

Keywords: School leadership; Technological competence; School performance.

1.0 Introduction

The role of educational leadership and the use of technology in the classroom have become increasingly important in the twenty-first century's ever-changing environment. The effectiveness of school leaders and teachers' technological skills plays crucial roles in shaping educational outcomes and overall school success. This study examines the crucial variables of school principals' leadership skills, teachers' technical proficiency, and their collective influence on school performance. The study presents intriguing insights into the attributes of school administrators and educators, their proficiencies, and the influence of these aspects on academic achievement. It highlights the importance of technological competence and leadership skills in the classroom, as well as the complex interactions between a wide range of factors that affect students' academic performance. By thoroughly examining leadership skills and technological proficiency in relation to academic success, the current study adds to the corpus of material already in existence. It offers essential data that could influence future education policies and processes.

1.1 School Leadership

In the present day, educational administrators must possess sound discernment, which necessitates a keen awareness and comprehension of diverse leadership techniques (Amanchukwu, Stanley, & Ololube, 2015). Educational leaders must employ their judgment while making decisions in situations with unknown conditions. Leader training programs prioritize the development of judgment to enhance leadership methods (Daniel, 2019). Leadership is a complex process that entails exerting influence over people to drive them towards the attainment of organizational objectives and exceptional performance (Bajpai, 2022; Shahi, 2017; Nugraha, 2023; Mahajan, 2015). Management is a crucial element that significantly influences employee motivation and commitment, with various styles having distinct effects (Bajpai, 2022). Effective leadership is defined by the capacity to build a distinct vision, communicate it to others, allocate essential resources, and manage conflicting interests (Mahajan, 2015). Leadership has a vital role in enhancing the overall atmosphere within institutions and facilitating substantial transformations in organizations (Shahi, 2017; Nugraha, 2023). Furthermore, it significantly contributes to the improvement of employee engagement, which is crucial for the overall performance of the firm (Mahajan, 2015). Leadership is essential for encouraging individuals to achieve organizational goals and flourish. The research conducted by Andriani et al. underscores the favorable influence of leadership on organizational commitment, emphasizing leadership as a pivotal factor in establishing organizational culture (Ratni, Prima, Lita., Rida, Rahim., Verinita., 2023). Furthermore, research conducted by Abdolla (2022) emphasizes the importance of leadership competence in achieving institutional excellence, highlighting a robust association between leadership competence and organizational achievement. In addition, Lita et al. emphasize the significance of ethical principles such as truthfulness and moral uprightness in leaders, which are crucial for cultivating confidence and attaining exceptional performance within an organization. Efficient leadership not only ensures that personnel are in line with strategic objectives, but also tackles obstacles such as communication deficiencies and insufficient acknowledgment, thereby improving job performance and motivation (Prado, 2022). Exceptional educational leaders have a distinct and well-defined vision for their institutions, which influences and molds many areas of institutional existence. The article highlights the crucial significance of leadership in addressing worldwide emergencies like as the COVID-19 pandemic (Howard, C. & Dhillon, J., (2021). Successful leadership necessitates the utilization of interpersonal abilities to fulfill the varied expectations of stakeholders and guarantee the integrity and advancement of the institution (Miller, M., (2023). The research on educational leadership in Thailand highlights the need of indicators, model consistency, and reliability to promote effective leadership development (Nonthing, K., & Supakicco, P., 2021). The process of identifying crucial characteristics of outstanding leadership in education is achieved through the utilization of Q-methodology. This approach involves integrating the viewpoints of several stakeholders, including school leaders, governors, and academics (Dhillon, J. et al., 2017).

These findings emphasize the importance of having a common vision for the desired future, which should guide the development of educational programs, policies, and daily operations in educational institutions. Leadership in education is a complex and dynamic notion that is adapting to societal and educational changes (Sleemat, 2022). According to Bora (2023), boosting team spirit, providing a great work atmosphere, and enhancing student learning are all essential. There is a shift happening in leadership approaches, moving away from the traditional top-down method. Instead, there is a growing understanding of the significance of distributed leadership, where all members of the educational community have the potential to be leaders. Effective educational leadership goes beyond dealing with current issues and involves looking ahead and working with different stakeholders to create a vision for the school. Nevertheless, regardless of the effectiveness of leaders, they encounter multiple challenges that they must skillfully handle and control in order to achieve success.

Over the course of time, numerous leadership styles have been suggested by scholars, as no single style of leadership can be regarded as universally applicable. Regardless of the various leadership styles, a competent or efficient leader encourages, stimulates, and guides actions to accomplish group or organizational objectives. A combination of qualities derived from the intellect and the emotions is necessary for effective leadership. Leaders must exhibit attributes such as vision, passion, creativity, adaptability, motivation, inventiveness, confidence, imagination, experimentation, trial and error, and initiative in order to instigate transformation (Kothari, S., 2018). The authors, Alex-Nmecha and David-West (2022), argue that effective leaders should offer explicit instructions, establish clear goals, acknowledge, and value their team members, emphasize their personal and professional growth, and demonstrate integrity and strong ethical principles. Competent leaders effectively rally and inspire people to work together towards shared objectives, taking inspiration from the principles of educational

administration and the exceptional leadership demonstrated by Prophet Muhammad SAW (Elvi, D. & Asmendri, A., 2022). Effective leadership is essential in academic libraries as it plays a critical role in delivering services and achieving organizational goals by inspiring and guiding followers. In essence, successful leadership is an ongoing development journey that necessitates self-awareness and regular introspection to motivate and optimize the capabilities of those under one's guidance. A combination of qualities derived from the intellect and the emotions is necessary for effective leadership. Leaders must exhibit attributes such as vision, passion, creativity, adaptability, motivation, inventiveness, confidence, imagination, experimentation, trial and error, and initiative in order to instigate transformation (Kothari, S., 2018).

Masaudling (2018) assessed the supervisory strategies employed by administrators, the leadership competencies exhibited, and the job performance of teachers. The study revealed that administrators employed high-level supervisory strategies and demonstrated strong management skills and competencies, while teachers exhibited very high job execution. School administrators should carry out their responsibilities within a framework of favorable conditions and regulations that support them in meeting performance standards. School administrators must take into account several elements, including aspiring leaders, early, mid, and late career stages, as well as program dimensions. The study conducted by Oliva & Rodado (2013) found that educational leaders shown a significant level of proficiency in meeting standards and adapting strategically in several aspects such as change management, collaborative planning, and problem-solving. The study also discovered a strong correlation between the standards set for educational leaders and the ability of school heads to adjust strategically. Among the standards examined in the study, it was seen that school heads demonstrated the highest level of ethics and integrity. In light of the aforementioned outcome, the school administration should implement efforts to enhance the quality of their educational standards according to their strategic adaption procedures.

Liwa (2018) examined the role of school principals as leaders responsible for achieving high-quality instruction. The study found that school principals rated their own leadership actions and the way their instructors saw them as "highly practiced." In addition, teachers possess a well-honed ability for critical thinking, fostering the growth of learners' 21st-century skills, and employing instructional methodologies. Furthermore, there was no discernible correlation amidst the realm of leadership for instructional behaviors of notable school principals and the instructional practices of instructors. Moreover, there was no substantial correlation between the technology leadership behaviors of school principals and the reflective thinking of teachers. There was a clear and important connection between the technology leadership behaviors of school principals and the development of 21st-century abilities in students, as well as the use of pedagogical approaches by teachers. Therefore, it seems that the school principals are effectively fulfilling their roles in providing instruction and leading in the use of technology.

However, Oliva & Rodado's (2013) study's findings showed that school administrators should carry out their duties in accordance with guidelines and procedures that help them satisfy expectations. School administrators must consider many elements, including prospective leaders, early, mid, and late career stages, as well as program dimensions. The survey findings indicated that educational leaders had a commendable degree of standards, while school heads showed a strong ability to adapt strategically in several aspects such as change management, collaborative planning, and problem-solving. Additionally, the study showed a strong correlation between the strategic adaptability of school heads and the standards for educational leaders that were included in the study. The school heads were found to have the highest levels of ethics and integrity among the standards for educational leaders. Given the outcome, the school administration should implement efforts to enhance the quality of their educational standards regarding their strategic adaption procedures. Teachers should consistently assess the strengths and flaws of their school administrators.

Additionally, one of the fundamental elements that has a major impact on the caliber of the teaching and learning processes at every stage of the educational system is the caliber of school administrators. The competencies of practical school leaders are regarded the most significant aspects of a school leader's profile in the four indicated realms of the management domain. The capacity to formulate motivational strategies in accordance with the school's shared principles, the capacity to establish and nurture an efficient learning atmosphere for students, the capacity to precisely delineate and assign responsibilities and authority, and the capacity to guide and oversee colleagues, respectively. Studies on school leader competences emphasize the significance of particular skills and areas of expertise. The necessity of skills in strategy development, school development, human resource

management, and teaching process administration is emphasized by Bitterová et al. (2014). While Santos (2020) lists leading learning and teaching, school growth, organizational management, and professional progress as critical areas, Trakšelys (2016) highlights the necessity of professionalism. Bitterová et al. (2014) highlights the significant influence of public policy and accountability measures on the development and performance of school leaders. These findings indicate that it is important for professional education and training programs for school leaders to prioritize these essential skills and areas of expertise. Additionally, it is crucial to take into account external concerns like legislation and accountability.

The dearth of efficient performance management and self-evaluation in schools has been brought to light by a number of research. Khan (2019) discovered that numerous private schools in Karachi suffer from an inadequate system for evaluating and assessing instructors' performance, resulting in a deficiency of knowledge and competent administration. Jingkun (2012) outlined various factors contributing to the challenges in effectively managing the performance of college professors. These factors include the absence of competent supervisors, an excessive focus on rewards and penalties, and the absence of a framework for re-evaluation. These studies emphasize the necessity for enhanced self-assessment and performance monitoring in educational institutions. Many educational institutions oversee and track students' performance in exams, their progress in their studies, and the rate at which they complete their courses. However, their approach lacks formality and systematicity, making it challenging for them to comprehend the underlying reasons for the produced outcomes. The integration of performance metrics into performance management is in its early stages, and most people recognize the challenge of transitioning from measuring outcomes to implementing actions for improvement. Only a small number of individuals can provide evidence of the positive outcomes that have arisen from self-assessment, and an even smaller number actually assess the results of these improvement measures. There is a consensus that the external assessment of schools has stimulated the advancement of self-assessment.

Enhancing administrative effectiveness in educational institutions is mostly dependent on the managerial skills of principals. According to research, having skills such as resourcefulness, conceptual thinking, and administrative organization is important (Warman, 2022). Anietie, R. & Ayonuwe, G. (2022) argue that human abilities such as justice, empathy, communication, and organizational skills, including the ability to adapt to change, manage crises, and provide visionary leadership, are crucial for good school management. The study conducted by Atiş, D. & Engin, D. (2022) underscores the importance of managerial leadership in enhancing the quality of education. It specifically focuses on the influence of principle skills on educational performance. Furthermore, the principal's aptitude in proficiently overseeing, strategizing, academically supervising, and fostering robust connections with educators significantly contributes to enhancing teacher professionalism and the overall ethos of the school. Through the cultivation of these abilities, principals can adeptly maneuver the intricacies of school administration, resulting in enhanced administrative efficacy and ultimately, superior educational achievements. This study also found a notable correlation between organizational abilities and the administrative efficacy of principals. Effective organization will enhance the administrative efficiency of the principals. The study demonstrates a notable correlation between the communication skills of principals and their administrative performance. Furthermore, maintaining amicable communication between principals, instructors, and students would significantly improve their administrative efficacy within schools.

1.2 Technological Competence of Teachers

The successful incorporation of technology into schools necessitates the existence of knowledgeable and forward-thinking leadership. The principal plays a vital role in spearheading transformation inside schools, necessitating not just expertise and understanding but also adept leadership (Wardani & Triwiyanto, 2022). This leadership position entails cultivating awareness, formulating a vision, and communicating with utmost efficacy (Wardani, 2022). Principals are crucial in school improvement as their leadership is vital in molding ideas, establishing a vision, fostering trust, and distributing power (Ying-xiu, 2012). Principals, as effective change agents, must actively participate in innovation, follow it through, and attain favorable student results (Hussain, 2016). Typically, macro variables such as financial resources and technical equipment allocation in schools are considered the primary themes directly associated with technology leadership. Technology leaders in the role of school principals encounter several obstacles, such as bureaucratic processes, reluctance towards adopting new ideas, and insufficient resources (Sincar, 2013). Although they aspire to be at the forefront of technology, they frequently experience a sense of unpreparedness and a lack of requisite professional growth opportunities

(Perkins-Jacobs, 2015). Principals have a crucial role in managing and utilizing educational technologies, as they are required to exhibit conduct that shows leadership in technology, according to Eren (2011). Principals view technology as fulfilling multiple roles in their schools, such as facilitating communication, enhancing instruction, and managing data (Waxman, 2013). The exponential growth of the Internet has had a significant impact on the manner in which executives oversee and coordinate their teams. A significant number of employees engage in remote work, necessitating heightened flexibility and ongoing communication in order to effectively manage them. Technology has an impact on various aspects, ranging from the communication methods used by employees to the assessment tools accessible to leaders. Technology can facilitate leadership to some extent, but managers must utilize it well, else it might result in fragmented and inefficient leadership.

New opportunities for knowledge production and dissemination are presented by the swift advancements in information and communication technology. It is crucial to include both secondary and primary education in the context of global connection. The significance of school leaders in enhancing teacher quality and promoting school development is paramount, as emphasized in several studies. The films *Sabrina* (2020) and *Jannana* (2021) both highlight the significance of the principal's managerial aptitude and leadership approach in these domains. This is corroborated by Rohmah (2021), who emphasizes the principal's function as a manager in devising and executing work programs, employing efficient leadership systems, and demonstrating suitable communication styles. Sayuti (2017) asserts that the principal's comprehension of their responsibilities and functions, together with their capacity to effectively guide the institution and facilitate transformation, are crucial for attaining high standards of quality in education. These findings highlight the substantial influence of principals in molding the quality of schools through their expertise, management, and assistance to teachers.

The majority of teachers had advanced technology knowledge and skills, and they utilized these to a modest degree while creating lessons, teaching, assessing students' learning, and providing feedback. A strong correlation was found between the level of technology resources available and their utilization in teaching, as well as between the proficiency of teachers in technological abilities and their utilization in teaching. Teachers across units did not show any notable disparity in their technology knowledge and skills. However, there was a considerable discrepancy in the amount to which teachers utilized their technological knowledge and skills.

According to Samonte & De Guzman (2019), the influence of Information and Communication Technology (ICT) has been experienced in both local and worldwide educational environments. It has a crucial significance in both the process of teaching and the process of acquiring knowledge. The participants in the study rated their proficiency in ICT as "advanced" in terms of technical operations and concepts, but they rated their instructive competency as "basic." Respondents possess a fundamental understanding of ICT. Nevertheless, this does not suffice to affirm that teachers were skilled and proficient in Information and Communications Technology (ICT). The growth in profession of teachers plays a crucial role in effectively using computers into education. Administrators should set aside money specifically for ICT (information and communication technology), and instructors should attend workshops and training sessions to increase their understanding of computers.

A research study was conducted to analyze the suitability and readiness of integrating ICT (information and communication technologies) in six public high schools that have internet connection. The results revealed that educators and students in two out of the six schools shown a significant level of expertise and competence in recognizing parts of ICT, the hardware and software. However, only one school demonstrated high level of competence in utilizing ICT. Every faculty person in a certain school incorporated ICT into their teaching of English, Math, Science, and TLE. However, no faculty member in the school integrated ICT into their teaching of Social Studies. The presence of ICT resources and the availability of basic ICT training to staff and students in i-schools had a role in the integration of ICT in education. The initial level of ICT integration in teaching reflects the preparedness and willingness of both staff and students to use ICT tools in the teaching-learning environment. The study suggests several recommendations, including the implementation of retraining programs focused on information and communication technology (ICT), the creation of ICT-based teaching modules for Social Studies, the need for further research to examine the connection between social-demographic characteristics and the incorporation of ICT in teaching, and the correlation of students' ICT competencies with their performance in English, Math, and Science achievement tests in i-schools (Osea, Nacario, Foronda, & Lirag, 2014).

It is well acknowledged that technology is a major force behind transformation in the education sector (Fox, 2011; Sancho, 2010). According to Fox (2011), it has the capacity to transform teaching and learning by offering innovative approaches and adapting to evolving educational requirements. Nevertheless, the influence of this technology has been varied, as several technologies have not met the anticipated outcomes (Sancho, 2010). Despite this, there is no denying the technology's role in education, and much of its potential for advancement and development is still unrealized. The swift advancement of technology and globalization has transformed the education system, particularly in guiding schools towards excellence and competitiveness. Maintaining current competencies in line with evolving technologies is crucial. Leaders in educational institutions who are not keeping up with the times technologically are not able to keep up with the globe. The schools in the 21st century are characterized by diversity, which requires leaders to possess abilities that would enable stakeholders to achieve desired objectives (Luqman, Farhan, Shahzad, & Shaheen, 2012). Therefore, this investigation was undertaken to analyze the present management abilities of school principals, the technical proficiency of teachers, and their impact on school performance.

Given the discussion above, this study ascertained the level of 21st-century leadership skills of school heads, the technological competence of teachers, and school performance. The findings of this study can enhance conversations aimed at enhancing the quality of education.

2.0 Methodology

2.1 Research Design

This study employed a design based on descriptive correlation. The descriptive approach was shown to be suitable for summarizing the respondents' levels of technological proficiency, leadership abilities, and academic achievement when analyzed as a whole as well as when categorized based on their individual profiles. The means and standard deviations of both variables' effects on school performance were systematically described, together with the 21st-century leadership competencies of school heads across several dimensions and teachers' technological proficiency. According to Navarro and Santos (2011), the descriptive approach is employed to methodically depict the facts and attributes of a certain population or region of interest, with precision and objectivity.

Additionally, the study's variables were found to have a substantial link using the correlational approach. Correlation analysis is employed to examine the degree to which changes in one variable align with changes in one or more other variables, as determined by the correlation coefficient (Navarro and Santos, 2011). It was predicted that technology proficiency and leadership qualities will affect academic achievement. Hence, the study's results were considered vital for the formulation of personnel strategies at the school level.

2.2 Research Participants

The research was carried out at Capiz, Philippines. The study included a total of 54 participants who were selected from 9 elementary schools. This group consisted of 9 school principals who were chosen using the complete enumeration technique, and 45 primary school teachers who were selected randomly from a population of 95. The researcher used a random selection method called draw lots to uniformly choose five (5) teachers from each school as respondents. The five submissions selected through a random drawing represented the samples used in the study.

2.3 Research Instrument

Primary and secondary data were collected from the sample respondents for this study using two sets of research instruments. The instrument selected by the school leaders comprised of two components. Part I, Profile, created individual profiles of the school administrators based on their gender, age, highest level of education completed, and tenure of employment. The questionnaire on 21st-century leadership qualities, Part II, was derived from Huang's (2013) work. Ten subsections made up this tool: establishing the direction of instruction, collaboration, judgment, sensitivity, outcome orientation, organizational skills, written and spoken communication, growing others, and self-awareness. Every indicator was given a rating on a 5-point Likert-type scale, with 1 denoting the least degree of agreement or proficiency and 5 the highest.

The technology competency tool for educators was obtained from the Connecticut State Department of Education and the Alliance of Regional Educational Service Centers (2001). This application functioned as a self-assessment tool for teachers and offered a clear plan for enhancing their skill in technology. The indications were assessed using a 3-point Likert-type scale, where a score of 1 represented a novice level, a score of 2 represented gaining proficiency, and a score of 3 represented competency.

The school heads willingly provided the Office Performance Commitment and Review Form (OPCRF) evaluation for the purpose of evaluating office achievement, which was then incorporated into the profiles of the respondents. Additionally, the teacher responses willingly provided data on the class average of the learners, which was then incorporated in their profiles. These components were incorporated into the corresponding sections of the research tools for school administrators and educators.

2.4 Data Gathering Procedure

The researcher followed all protocols and ethical criteria when collecting the data for the study. The letter to the respondents provided a thorough explanation of the substance of the questionnaires, ensuring that they fully understood the requirements and advantages of their involvement in the study. During the stage of data collection, the researchers sought authorization from the university to carry out the study, after the incorporation and revision of the proposal in accordance with comments from the committee. A communication letter was prepared to collect data in the research area. Afterwards, the research instrument that was chosen, along with all the necessary documents such as the approved request to conduct the study and a letter about data protection notice, were physically given to the selected schools according to the calculated and identified samples. Participants were provided with timetables outlining the deadlines for filling out and submitting the data collection instrument. The tools were obtained immediately from the sample schools according to the predetermined schedule.

2.5 Data Analysis

The following descriptive statistical analyses were carried out: a) Frequency count and percentage were utilized to depict the prevalence of respondents' numbers in relation to their profiles. b) Mean and standard deviation were employed to describe the level of school leadership, technological competence, and school performance in terms of the OPCRf rating of school heads and the class average of the learners. Further inferential statistical tools that were employed included: a) the Mann Whitney U test and the t-test for Independent Samples were used to find the significant difference between variables with two categories, like sex; b) analysis of variance and Kruskal Wallis were used to find the significant differences among study variables with three or more categories, like age, highest educational attainment, and length of service; and c) Pearson-r was used to find the relationship between school achievement, technology proficiency, and governance abilities. However, due to the volume of samples that needed to be processed, non-parametric tests like the Mann Whitney U test and Kruskal Wallis were used to analyze data on school heads, whereas parametric tests like the t-test for Independent Samples and Analysis of Variance were used to analyze data on teachers because of large datasets and random sampling. The hypotheses were evaluated at a significance threshold of 0.05 using the SPSS Version 20 software.

3.0 Results and Discussion

3.1 Demographic Profile of the Respondents

Table 1 showed that most school heads (66.67%) and teachers (80.00%) were female. All school heads were aged 31 years and above (100%), while most teachers (64.44%) were aged 31 years old and above. Regarding the highest educational attainment, most of the school head and teacher respondents (66.67% and 55.56% respectively) had completed units in a master's degree program. Additionally, a portion of the school heads (33.33%) had attained their doctoral degree. Moreover, the profile revealed that the respondents had varying lengths of service, with more school heads (55.56%) having served for 21 years or more, while teachers were predominantly in the service for 10 years or less (55.56%).

Bacia's (2017) research corroborated these findings, revealing that the majority of school administrators in both elementary and secondary schools in Capiz were of the female gender. Nevertheless, a discrepancy arose over the greatest level of education achieved, since it was discovered that the majority of school administrators had successfully obtained a master's degree. Moreover, Reyes (2017) concurred in her dissertation that the Schools

Division of Capiz had a greater number of female school administrators and instructors. This suggests a trend where females are more inclined towards school governance and teaching roles than males. This frequency analysis indicates that both school head and teacher respondents in this district are pursuing their postgraduate studies, albeit not yet graduated. School heads appear to have longer years of service, while teachers are in their early years of teaching.

Table 1. Demographic profile

SCHOOL	SCHOOL HEADS N	F	TEACHERS N	F
Sex				
Male	3	33.33	9	20.00
Female	6	66.67	36	80.00
Age				
30 years & below		0.00	16	35.56
31 years & above	9	100.00	29	64.44
Highest Educational Attainment				
Bachelor's Degree	0	0.00	20	44.44
With Master's Unit	6	66.67	25	55.56
Master's Degree	0	0.00	0	0.00
With Doctoral Unit	0	0.00	0	0.00
Doctorate Degree	3	33.33	0	0.00
Length of Service				
10 years & less	2	22.22	25	55.56
11-20 years	2	22.22	9	20.00
21 years & more	5	55.56	11	24.44

3.2 Level of Leadership Skills of School Heads

Overall Leadership Skills

Table 2. Overall level of leadership skills of school heads

LEADERSHIP SKILLS	SD	MEAN	DESCRIPTION
A. Setting instructional direction	0.55	3.86	Very Satisfactory
B. Teamwork	0.53	4.26	Very Satisfactory
C. Sensitivity	0.25	4.25	Very Satisfactory
D. Judgment	0.73	3.91	Very Satisfactory
E. Result orientation	0.71	4.13	Very Satisfactory
F. Organizational ability	0.44	4.00	Very Satisfactory
G. Oral communication	0.32	4.22	Very Satisfactory
H. Written communication	0.29	4.44	Very Satisfactory
I. Developing others	0.16	4.14	Very Satisfactory
J. Understanding own strengths and weaknesses	0.31	4.37	Very Satisfactory
OVERALL MEAN	0.20	4.16	Very Satisfactory

In table 2, school heads' overall leadership abilities were "very satisfactory" (M=4.16). The school administrators had the best scores in written communication and self-awareness, but they obtained lower scores in establishing instructional goals and using sound judgment. This suggests that they demonstrated the lowest level of proficiency in expressing the vision of teaching and learning, as well as establishing high-performance standards for oneself or others. Their ability to foster creativity in teaching and learning, as well as their excitement for collaborating with external partners to enhance the quality of education, were the least developed talents among the several competencies they displayed satisfactorily.

Oliva & Rodado (2013) provided evidence that educational leaders possess a strong commitment to high standards and are adept at strategically adapting to change in areas such as inviting change, collaborative planning, and problem-solving. Furthermore, Liwa (2018) confirmed that school principals had a high level of proficiency in their leadership behaviors, both in their own self-perception and as perceived by their instructors. In addition, there was no significant link observed between the teaching methods employed by teachers and the leadership characteristics exhibited by school principals.

Leadership Skills According to Profile

Table 3 depicts the leadership qualities of school heads, categorized by sex, age, greatest educational attainment, and duration of service. These talents were rated as "very satisfactory" with a standard deviation of 0.20 and a

mean of 4.16. Irrespective of their background, they exhibited leadership skills that were deemed "highly satisfactory." Nevertheless, the data revealed that females ($M=4.19$) exhibited greater means in comparison to males ($M=4.11$). The average score of school leaders who had completed master's units ($M=4.20$) was greater than that of those with doctorates ($M=4.08$). In terms of tenure, school administrators with more years of service achieved the highest average score ($M=4.21$), while those in the middle range obtained the lowest score (4.08).

Table 3. Level of leadership skills of school heads when classified according to their profile

SCHOOL	MEAN	DESCRIPTION
Sex		
Male	4.11	Very Satisfactory
Female	4.19	Very Satisfactory
Overall	4.16	Very Satisfactory
Age		
30 years & below		
31 years & above	4.16	Very Satisfactory
Overall	4.16	Very Satisfactory
Highest Educational Attainment		
With Master's Unit	4.20	Very Satisfactory
Doctorate Degree	4.08	Very Satisfactory
Overall	4.16	Very Satisfactory
Length of Service		
10 years & less	4.13	Very Satisfactory
11-20 years	4.08	Very Satisfactory
21 years & more	4.21	Very Satisfactory
Overall	4.16	Very Satisfactory

Cuesta (2019) found that female school presidents tend to outperform their male counterparts in many leadership responsibilities, including setting direction, driving change, representing the organization, and providing coaching. Principals allocated to larger schools tend to excel more than those assigned to smaller schools in performing such responsibilities like (a) setting directions, (b) driving change, (c) representing the school, and (d) coaching. A proposal was made to ensure gender parity in leadership chances for teachers, regardless of their gender. Promotions should be prioritized for teachers who have served for a longer duration and have obtained advanced degrees in educational management.

3.3 Difference in the Leadership Skills of School Heads

Sex and Highest Educational Attainment

Table 4. Mann Whitney U analysis result

VARIABLES	MEAN RANK	P-VALUE	INTERPRETATION
Sex			
Male	4.17	0.517	Not Significant
Female	5.42		
Highest Educational Attainment			
With Master's Unit	5.50	0.437	Not Significant
Doctoral Degree	4.00		

The inferential analysis, as shown in Table 4, indicated that there was no statistically significant difference in the leadership qualities of school heads when categorized by sex ($z=.648$, $p=.517$) and greatest educational attainment ($z=.778$, $p=.437$). This implies that there was no substantial disparity in the leadership aptitude between male and female school administrators. Similarly, school administrators with bachelor's degrees shown comparable competence to those with doctoral degrees. Regardless of their gender and amount of education, school administrators shown comparable levels of leadership abilities.

Length of Service

Table 5 indicates that there was "no significant difference" in the leadership qualities of school heads based on their term of service ($\chi^2=.578$, $p=.749$). This indicates that school heads demonstrate similar leadership abilities regardless of the duration of their tenure. Both school heads with shorter and longer service had comparable levels of leadership qualities.

Table 5. Kruskal-Wallis test result

VARIABLES	MEAN RANK	P-VALUE	INTERPRETATION
Length of Service			
10 years & less	4.00	0.749	Not Significant
11-20 years	4.50		
21 years & more	5.60		

3.4 Level of Technological Competence of Teachers

Overall Technological Competence

Table 6. The overall level of technological competence of teachers

INDICATORS	MEAN	DESCRIPTION
A. Educational technology concepts And operations	2.49	Proficient
B. Creating environments for learning	2.84	Proficient
C. Productivity and professional practice	2.30	Developing
D. Social, legal, ethical, and human issues	2.32	Developing
OVERALL MEAN	2.49	Proficient

According to the data shown in Table 6, teachers demonstrate a "proficient" level of technological ability, with a mean score of 2.49. Additionally, they were discovered to possess a high level of skill in establishing conducive learning settings ($M=2.84$) and comprehending educational technology principles and functions ($M=2.49$). This suggests that teachers have excellent proficiency in designing educational experiences that are in line with state subject standards, student information and technology standards, and the most effective methods. They have the ability to create novel roles for educators and students in technology-driven learning settings and proficiently oversee the utilization of technology in the classroom for educational objectives.

In addition, teachers demonstrated a high level of skill in effectively using technology tools to assess and comprehend the needs and capabilities of students, resulting in enhanced teaching methods and optimized student learning outcomes. In addition, they exhibited a profound comprehension of organizational matters pertaining to the implementation of technology in education, as well as adept problem-solving techniques for challenges with teaching and learning with technology.

Unfortunately, with a mean of 2.30 and SD of .32, teachers' professional practice and productivity were classified as "developing". Furthermore, the teachers' competence in social, legal, ethical, and human issues was improving, as indicated by a mean score of 2.32 and a standard deviation of 0.34. This result suggests that teachers have a limited level of proficiency in effectively utilizing technology to enhance their productivity. Although teachers demonstrated comprehension of technology ideas and the ability to build conducive learning settings, they were found to be less skilled in generating beneficial outcomes while adhering to the high ethical standards expected of 21st-century educators. They demonstrated emerging proficiency in handling pertinent technological challenges that arose in the educational setting. It is necessary to improve instructors' productivity by utilizing technology.

Technological Competence According to Profile

Table 7 indicates that the instructors' technological competency was judged as "proficient" ($M=2.49$) when categorized based on their age, sex, length of employment, and highest educational attainment. Male and female teachers demonstrated nearly identical levels of proficiency, with scores of 2.50 and 2.49, respectively. The study revealed that younger instructors ($M=2.53$) exhibited higher levels of proficiency compared to older teachers ($M=2.46$). Teachers who held a bachelor's degree had the highest average score, with a mean of 2.58. In addition, teachers who had been in service for 10 years or less showed the highest level of competency, with a mean score of 2.52. On the other hand, teachers with 11-20 years of service had the lowest mean score of 2.43.

This finding suggests that both male and female teachers had a high level of technological competence, exhibiting excellent skill in using technology for educational objectives. The younger cohort of educators had greater aptitude in technology, possibly attributable to their familiarity with technology throughout their pre-service training and

initial years in the profession. Moreover, teachers possessing bachelor's degrees demonstrated competence, indicating that pursuing advanced studies may not be essential for them to excel in utilizing technology in the classroom. In addition, having experience in the service industry does not necessarily imply expertise in technology, even if one has spent more years in study. Teachers, who are familiar with the technological advancements of their day, can acquire expertise in using technology that is applicable to the classroom setting by engaging in self-directed learning and adapting to new tools and methods.

Table 7. Level of technological competence of teachers when classified according to their profile

VARIABLES	SD	MEAN	DESCRIPTION
Sex			
Male	0.15	2.50	Proficient
Female	0.18	2.49	Proficient
Overall Mean	0.17	2.49	Proficient
Age			
30 years & below	0.14	2.53	Proficient
31 years & above	0.18	2.46	Proficient
Overall Mean	0.17	2.49	Proficient
Highest Educational Attainment			
Bachelor's Degree	0.17	2.58	Proficient
With Master's Unit	0.17	2.50	Proficient
Master's Degree			
With Doctoral Unit			
Doctorate Degree			
Overall Mean	0.17	2.49	Proficient
Length of Service			
10 years & less	0.13	2.52	Proficient
11-20 years	0.18	2.43	Proficient
21 years & more	0.24	2.47	Proficient
Overall Mean	0.17	2.49	Proficient

3.5 Difference in the Teachers' Technological Competence

Sex, Age, and Highest Educational Attainment

Table 8. Mann Whitney U analysis result

VARIABLES	MEAN RANK	P-VALUE	INTERPRETATION
Sex			
Male	25.33	0.551	Not Significant
Female	22.42		
Age			
30 years & below	25.59	0.324	Not Significant
31 years & above	21.57		
Highest Educational Attainment			
Bachelor's Degree	23.18	0.936	Not Significant
With Master's Unit	22.86		

When teachers' technical ability was categorized based on their age ($z=.985$, $p=.324$), sex ($z=.597$, $p=.551$), and maximum educational attainment ($z=.080$, $p=.936$), the test results in Table 8 showed that "no significant differences" occurred between them. The p-values from each study suggested that there was no significant difference in technology competence. Amongst teachers, there is a distinction between those who are male and those who are female, regardless of their age. Additionally, the highest level of educational attainment did not have an impact on the technological competence of instructors.

Length of Service

Table 9. Kruskal-Wallis test result

VARIABLES	MEAN RANK	P-VALUE	INTERPRETATION
Length of Service			
10 years & less	24.96	0.446	Not Significant
11-20 years	18.61		
21 years & more	22.14		

When instructors' technological ability was categorized based on their term of service, as indicated in Table 9, it was discovered that there was "no significant difference" ($\chi^2=1.614$, $p=.446$). This suggests that the length of time teachers have worked, regardless of how long it has been, did not result in variations in their technological proficiency. All teachers in these groups had similar levels of proficiency.

3.6 Level of School Performance

The school performance in these clusters (see Table 10), in terms of their OPCRF, was "outstanding" with a mean of 4.64, while in terms of learners' achievement, it was "very satisfactory" with a mean of 87.69. This indicates that the schools performed exceptionally based on the key result areas achieved by the school heads. However, despite the schools performing at their best, learners exhibited unequal performance.

Table 10. Level of school performance in terms of office and learners' achievement

VARIABLES	SD	MEAN	DESCRIPTION
Office Achievement	0.33	4.64	Outstanding
Learners' Achievement	2.12	87.69	Very Satisfactory

This current result contradicts the findings of Vista (2017) titled "Performances of Students, Teachers, and Administrators in Basic Education, 2013-2016, Capiz, Philippines," which reported that both elementary and high school students in Capiz had satisfactory performance in the last three school years. It is possible that the clusters during the conduct of this study performed better than during the previous study. Additionally, Lindo (2017) attested in her study "Intelligences and Performances of School Administrators in Capiz, Philippines" that school administrators had a very satisfactory performance; however, the performance was not significantly different.

3.7 Relationships between Leadership Skills, Technological Competence, and School Performance

Table 11. Spearman's rho analysis result

Variables	Leadership Skills	Technological Competence	Office Performance	Learner Performance
Leadership Skills	X	$r = 0.111$, $p = 0.776$	$r = 0.209$, $p = 0.589$	$r = 0.423$, $p = 0.256$
Technological Competence		X	$r = 0.128$, $p = 0.743$	$r = 0.261$, $p = 0.083$
Office Performance			X	$r = 0.369$, $p = 0.329$
Learners' Performance				X

According to Spearman's rho coefficient ($r=.111$, $p=.776$), Table 11 shows that there was "no significant relationship" between the technological competence of teachers and the leadership abilities of school heads. In the same vein, there was no significant correlation between the leadership qualities of school heads and their office performance ($r=.209$, $p=.589$). Furthermore, there was no statistically significant correlation seen between the technical proficiency of teachers and academic performance ($r=.128$, $p=.743$), as well as between technological proficiency and students' accomplishment ($r=.261$, $p=.083$).

Liwa (2018) found a significant association between school administrators' self-perception of their leadership actions and teachers' perceptions. Nevertheless, there was no discernible correlation between the instructional leadership behaviors of school principals and the instructional practices of instructors. Moreover, no significant link was found between the technology leadership behaviors exhibited by school principals and the reflective thinking abilities of teachers. However, a significant and relevant association was found between the technology leadership behaviors displayed by school administrators and the degree to which teachers promoted the development of 21st-century skills in their students and utilized pedagogical methods. Thus, it appears that school principals are effectively fulfilling their responsibilities in terms of instructional and technology leadership.

Masaudling (2018) found significant relationships between administrators' supervisory strategies and teachers' job performance, between teachers' job performance and leadership competencies, and between administrators' supervisory strategies and leadership competencies, which contradicts the current findings. Moreover, there existed a partially significant correlation between supervisory tactics and the job performance of instructors, particularly when considering leadership qualities.

The results indicate a low positive correlation between leadership skills and technological competence, office achievement, and learners' achievement. This suggests that leadership skills have a negligible influence on the

variables tested, and there is a weak relationship between teachers and school performance. Thus, regardless of the leadership skills demonstrated by school heads, it appears that they have no direct influence on teachers' technological competence or school performance.

Teachers can acquire technological proficiency even in the absence of exceptional leadership from their school administrators. It is observed, meanwhile, that teachers' technology proficiency has no effect on students' academic achievement, indicating that students can succeed regardless of their teachers' technological proficiency. This provides partial evidence for the efficacy of conventional classroom teaching methods.

Moreover, the findings of the study lack definitive evidence in favor of the Skill Theory, which holds that acquired abilities and learned information are important components of successful leadership. According to the notion, leadership success is dependent on the acquisition of learnt skills, the development of a personal style, and the accumulation of knowledge. Although school administrators have very commendable leadership abilities, their performance in the office remains exceptional. This necessitates a thorough and precise evaluation of office performance in order to ascertain the genuine efficacy of school heads' leadership.

4.0 Conclusion

The study's findings provide multiple conclusions:

- a. School heads and teachers share similar trends in their profiles regarding sex, age, and educational attainment, with most school heads having over two decades of service, while teachers are relatively new to the profession.
- b. School heads demonstrate very satisfactory leadership skills across all indicators.
- c. School heads demonstrate similar leadership abilities, regardless of gender, greatest level of education achieved, or time of service.
- d. Teachers generally show technological proficiency, but they require further development in productivity, professional practice, and addressing social, legal, and human issues.
- e. Teachers' technological competence remains consistent across different demographic profiles, indicating comparable proficiency.
- f. Both office and learners' performances range from very satisfactory to outstanding.
- g. The technological proficiency of teachers, the leadership abilities of school administrators, and academic achievement are not correlated.

Recommendations:

- a. Provide professional development opportunities and post-graduate training for teachers early in their careers to enhance their competence. Consider promoting school heads having longer years of service.
- b. Establish district-wide mechanisms for sharing outstanding practices to help school heads sustain and improve their leadership skills. Continuous professional development can foster resilience and dynamism in leading school organizations.
- c. Prioritize technological advancement in elementary schools by including it in the School Improvement Plan (SIP). Acquire more technology facilities and equipment, and strengthen human resources through partnerships and linkages.
- d. Triangulate the study's findings with other leadership assessments conducted in the context to verify results further.
- e. Conduct a validation study to determine specific factors influencing teachers' technological competence by including a wide demographic profile.
- f. Organize monitoring teams to evaluate office and learners' performances periodically for the benefit of students.
- g. Encourage school heads and teachers to continually develop their leadership skills and technological competence, respectively, to enhance basic education service delivery. Triangulation of school performance with other leadership and technological competence perspectives using additional data sources can further clarify factors influencing performance.
- h. Implement the proposed teacher development program on ICT following consultation and validation of the development proposal.

5.0 Contributions of Authors

The sole author initiated and completed this study.

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7.0 Conflict of Interests

The author declares no conflict of interest.

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9.0 References

- Abdolla, A.M. (2022). The role of leadership merit in achieving organizational excellence. doi: 10.21928/uhdicearnc/27
- Alex-Nmecha, J. & David-West, B. (2022). Effective Leadership as the Roadmap towards Academic Librarians' Service Delivery. *Information Impact: Journal of Information and Knowledge Management*, 13(1):64-71. doi: 10.4314/ijikm.v13i1.6
- Amanchukwu, R. N., Stanley, G. J., & Olofube, N. P. (2015). A review of leadership theories, principles and styles and their relevance to educational management. *Management*, 5(1), 6-14. doi:10.5923/j.mm.20150501.02
- Anietie, R. & Ayonuwe, G. (2022). School business management competencies for improved administrative effectiveness in public secondary schools in rivers state nigeria. *Pedagogia: Jurnal Pendidikan*, 11(1):41-55. doi: 10.24239/pdg.vol11.iss1.254
- Atiş, D. & Engin, D. (2022). The Evaluation of Management Skills of School Administrators in the Context of Effective School. *Anadolu journal of educational sciences international*, 12(2):442-467. doi: 10.18039/ajesi.910568
- Bajpai, D.A. (2022). Leadership. *International Journal of Advanced Research in Science, Communication and Technology*. <https://doi.org/10.48175/ijarsct-3035>
- Bitterová, M., Hašková, A., & PISOŇOVÁ, M. (2014). School Leader's Competencies in Management Area. *Procedia - Social and Behavioral Sciences*, 149, 114-118. <https://doi.org/10.1016/j.sbspro.2014.08.170>
- Bora, M. (2023). Leadership In Education. *International Journal For Multidisciplinary Research*. 10.36948/ijfmr.2023.v05i05.8139
- Cuesta, A. P. (2019). Performance and practices among public elementary school heads. *SMCC Higher Education Research Journal (Teacher Education Journal)*, 1(1). <http://ejournals.ph/form/cite.php?id=14385>
- Daniel, D. (2019). Judgment and the Preparation of Educational Leaders. *Journal of Research on Leadership Education*, 14(3):191-211. doi: 10.1177/1942775117752455
- Elvi, D. & Asmendri, A. (2022). Kepemimpinan Kepala Sekolah yang Efektif Berlandaskan Prinsip Kepemimpinan Nabi Muhammad SAW. 2(6):529-548. doi: 10.58578/anwarul.v2i6.772
- Eren, E., & Kurt, A.A. (2011). Technological Leadership Behavior of Elementary School Principals in the Process of Supply and Use of Educational Technologies. *Education 3-13*, 131, 625-636.
- Fox, R. (2011). Technological Practice and Change in Education. https://doi.org/10.1007/978-3-642-22383-9_1
- Fullan, M. (2007). The new meaning of educational change (4th ed.). New York, NY: Teachers College Press.
- Howard, C. & Dhillon, J. (2021). Q-sort as a tool for promoting outstanding leadership. in *Practice*, 1-9. doi: 10.1080/25783858.2021.1882264
- Huang, T. (2013). Effective school leadership competencies: A psychometric study of the NASSP 21st century school administrator skills instrument (Unpublished doctoral dissertation). Lehigh University. <http://preserve.lehigh.edu/etd>
- Hussain, M.A., Haider, S.Z., Ahmed, I., & Ali, S. (2016). School Principals as Effective Change Agents: A Study of Essential Skills and Attributes. *Journal of Educational Research*, 19, 49.
- Ignacio, M., Prado, S. (2022). The role of leadership merit in achieving organizational excellence. doi: 10.21928/icearnc/27
- Jannana, N.S. (2021). Strategi Kepemimpinan: Quality Continuous Improvement SMP Islam Prestasi Al Muftadi-Ien Bantul Yogyakarta. *Nusantara: Jurnal Pendidikan Indonesia*. <https://doi.org/10.14421/njpi.2021.v1i2-7>
- Jingkun, Z., & Jianlin, Z. (2012). Analysis on Reasons for Difficulties of Performance Management of College Teachers. https://doi.org/10.1007/978-3-642-24820-7_101
- Jaswinder, Dhillon., Colin, Howard., Vivian, Cooke., Tom, Whittingham., J., Holt. (2017). Stakeholder Perceptions of Outstanding Leadership in Schools and Colleges in England.
- Khan, H., & Suhag, A.K. (2019). Performance and Appraisal Framework for Untrained Teachers Working in Private Schools of Karachi. *IJAEDU- International E-Journal of Advances in Education*. <https://doi.org/10.18768/IJAEDU.531634>
- Kothari, S. (2018). Role Of Effective in Leadership on Employee Retention: An Empirical Study. *Psychology And Education* 55(1) Doi: 10.48047/Pne.2018.55.1.66
- Liwa, I. (2018). School principals' leadership behaviors vis-à-vis teachers' instructional practices. *West Visayas State University Research Journal*, 7(2). <https://ejournals.ph/article.php?id=14670>
- Luqman, A., Farhan, HM, Shahzad, F., & Shaheen, S. (2012). 21st Century Challenges of Educational Leaders, way out and Need of Reflective Practice. *International Journal of Learning and Development*. <https://doi.org/10.5296/ijld.v2i1.1238>
- Mahajan, S., & Sharma, R. (2015). Impact of Effective Leadership on Employee Engagement. *International Journal of Education and Management Studies*, 5, 288.

- Malinauskienė, D. (2021). Teacher Leader In Preschool Institution. *Švietimas: Politika, Vadyba, Kokybė / Education Policy, Management And Quality*. 10.48127/spvk-epmq/21.13.58
- Masaudling, M. D. (2018). Leadership competencies: Their mediating effect on the relationship between supervisory strategies of administrators and job performance of teachers. *Tin-aw*, 2(1). <https://ejournals.ph/article.php?id=13602>
- Michael, W., Miller. (2023). Leadership Preparation and Institutional Priorities: A Global Perspective on Higher Education. *Open journal of leadership*, 12(01):1-14. doi: 10.4236/ojl.2023.121001
- Nacario, C. P., Osea, G. B., Foronda, V. R. & Lirag, M. B. (2014). Readiness and Acceptability of Information and Communication Technology Integration in Basic Education. *Asia Pacific Journal of Multidisciplinary Research*, 2(1).
- Navarro, R. L., & Santos, R. G. (2011). Research-based teaching and learning. Quezon City, Manila: Lorimar Publishing.
- Nonthing, K., & Supakicco, P. (2021). The Structural Relationship Model of Indicators of Outstanding Leadership for Teachers under the Local Administrative Organizations.. 7(2):235-247. doi: 10.12973/IJEM.7.2.235
- Nugraha, A. (2023). Sustainable Leadership Development for Organizational Excellence. *Hawalah: Kajian Ilmu Ekonomi Syariah*. <https://doi.org/10.57096/hawalah.v2i1.29>
- Oliva, E. A., & Rodado, M. E. (2013). Standards for educational leaders as correlate to strategic adaptation of elementary school heads. *IAMURE International Journal of Multidisciplinary Research*, 6(1). <http://ejournals.ph/form/cite.php?id=2574>
- Patel, J.B., & Patel, S.I. (2014). New Approaches of Educational Leadership.
- Peretomode, V. F. (1991). Educational administration: Applied concepts and theoretical perspectives. Lagos, Nigeria: Joja Educational Research and Publishers.
- Perkins-Jacobs, M.V. (2015). Principals' Perceptions of Technology Implementation in High Schools and Their Effects on Leadership.
- R. Santos, A., & Cajucan, R.L. (2020). Domains and Standards of School Leadership: Evaluation of Tertiary School Teachers. *International Journal of Advanced engineering, Management and Science*, 6, 124-128. <https://doi.org/10.22161/ijaems.63.4>
- Ratni, Prima, Lita., Rida, Rahim., Verinita. (2023). Leadership Quality in the Millennial Era in Achieving Organizational Goals. *Inovbiz*, doi: 10.35314/inovbizmik.v3i1.3316
- Ratni, Prima, Lita., Rida, Rahim., Verinita. (2023). Leadership Quality in the Millennial Era in Achieving Organizational Goals. *Inovbiz*, doi: 10.35314/inovbizmik.v3i1.3316
- Rohmah, E. (2021). Principal As A Manager In Improving The Quality Of Education. *Managere : Indonesian Journal of Educational Management*. <https://doi.org/10.52627/IJEAM.V3i2.130>
- Sabrina, F.F., Darmiyanti, A., & Bk, M.T. (2020). Kompetensi Manajerial Kepala Sekolah Untuk Meningkatkan Mutu Guru. <https://doi.org/10.24252/IDAARAH.V4i2.16740>
- Samonte, K., & De Guzman, P. (2019). ICT competencies among public secondary school MAPEH teachers: An assessment. *JPAIR Institutional Research Journal*, 12(1). <http://ejournals.ph/form/cite.php?id=15278>
- Sancho, J.M. (2010). Digital Technologies and Educational Change. https://doi.org/10.1007/978-90-481-2660-6_26
- Shahi, R. (2017). Role of Leader in Improving Institutional Climate. *International Journal of Scientific Research and Management (IJSRM)*. <https://doi.org/10.18535/IJSRM/V5I10.12>
- Sincar, M. (2013). Challenges School Principals Facing in the Context of Technology Leadership. *Kuram Ve Uygulamada Egitim Bilimleri*, 13, 1273-1284.
- Sleemat, M. A. I. A. (2022). Leadership in education management. *International Journal of Health Sciences*, 6(S6), 8794–8803. <https://doi.org/10.53730/ijhs.v6nS6.12348>
- Trakšelys, K., Melnikova, J., & Martišauskienė, D. (2016). Competence of the leadership influence school improvement. <https://doi.org/10.15181/andragogy.v7i0.1379>
- Warman, W (2022). Principal Managerial Competence and Academic Supervision on Vocational Teacher Performance. *Journal of Education and Learning Innovation*, 2(4):436-446. doi: 10.35877/454ri.eduline1286
- Wardani, P.K., & Triwiyanto, T. (2022). Meta Analisis terhadap Peran Kepala Sekolah sebagai Pemimpin Perubahan. *JMiE (Journal of Management in Education)*. <https://doi.org/10.30631/jmie.2022.72.57-66>
- Waxman, H.C., Boriack, A.W., Lee, Y., & MacNeil, A.J. (2013). Principals' Perceptions of the Importance of Technology in Schools. *Contemporary Educational Technology*, 4, 187-196. <https://doi.org/10.30935/CEDTECH/6102>
- Ying-xiu, Y. (2012). The Leadership of Principals in School Improvement. *Theory and practice of education*. <https://doi.org/10.32806/JF.V3I1.2714>
- Ying-xiu, Y. (2012). The Leadership of Principals in School Improvement. *Theory and practice of education*.
- Zhu, J., & Zhang, J. (2012). Analysis on Reasons for Difficulties of Performance Management of College Teachers. https://doi.org/10.1007/978-3-642-24820-7_101

Teachers' Challenging Experiences in Home Visitation During the New Normal Education: A Phenomenological Study

Jesscel Jane M. Buot

Misamis University, Oroquieta City, Philippines

Author email: buotjessceljane@gmail.com

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Abstract. Home visits are intended to decrease the reading gap, improve parenting skills, foster parent-child contact and involvement, boost students' school preparedness and achievement, and advance literacy. The home visitation program was the only option for the teachers to validate their learners' academic performance during the Modular Distance Learning in the new normal education. This study explored the challenges that public elementary school teachers encountered in home visitation during the new normal education in Jimenez District, Division of Misamis Occidental. A phenomenological approach was utilized as a research design, with nine public elementary school teachers as participants in the study. They were selected through purposive sampling. Face-to-face interviews were conducted to gather the data from the participants. The responses were analyzed using Moustakas' method of data analysis. Results generated the following themes: threats to one's security and safety, inadequacies of interpersonal connections among teachers, parents, and learners, conflict of other school-related activities and teachers' coping strategies. The study showed that teachers experienced different challenges in home visitation during the new normal education. When teachers leave the confines of the school campus to provide services in locations other than where they are employed, they expose themselves to a significant risk and face potential threats to their safety and security. When students and their parents are absent during a home visit, it can be difficult for teachers to administer assessments or validate student work. Teachers also find that overlapping school activities and home visitation make for an exhausting experience. However, the study showed that despite the challenges the teachers have encountered, they remain diligent and responsive to the needs of their learners. Teachers' coping strategies have assisted them in remaining optimistic and flexible in facing different challenges. The buddy system, total health, and time management among teachers are recommended in this study.

Keywords: Teachers' challenging experiences, Home visitation, New normal education, Qualitative approach.

1.0 Introduction

Home is the safest place to stay while the pandemic is at the height of its strike because no absolute cure has been discovered yet. Considering the COVID-19 pandemic and the changes it brought to learners, the school must intensify the role of the family as learning facilitators at home to ensure the continuity of learning (Gayatri & Irawaty, 2022). Parents are the immediate persons that learners can call for help, while teachers cannot leave their learners alone in answering their modules and LAS (Balgos & Villarente, 2022). Home visitation as an intervention is urgently needed to alleviate the disparity in status among students regarding adequate learning resources. Home visitations are designed and implemented to help close the reading gap, increase parenting knowledge, parent-child interaction, & involvement, increases school readiness & success, and promote literacy. Home

visitation is the effort made by the teacher to consistently visit the student at home and spare a moment to conduct ample teaching time and follow-ups of their performance. (Malabarbas et al., 2022).

On the other hand, the study by Bayucca (2021) and (Villaruz et al., 2022) discovered obstacles in implementing modular distance education. These disadvantages include greater self-discipline and self-motivation required for pupils, increased preparation time and lack of concrete teacher rewards, and more excellent administrative resources needed to track students and operate multiple modules (Talimodao & Madrigal, 2021). In implementing the home visit at SD Muhida, there were also several obstacles encountered, including the lack of follow-up in home visit activities, the teacher does not support for the home visit activities, lack of support from parents, and less able to adjust the time (Nurdyansyah, & Nyong, 2020). Several school systems implement teacher home visit programs to foster ties with parents and improve in-school parent involvement, raising student achievement. (Wright et al., 2018).

Furthermore, authentic assessments and timely feedback are essential to learning (Pokhrel & Chhetri, 2021). As stipulated in DepEd Order No. 31, series 2020, teachers need to be creative and flexible in assessing student learning while still adhering to the principles of quality assessment practice. As Modular Distance Learning began, the teachers questioned the genuineness and accuracy of the responses provided by their students (Luaña, 2021). The home visitation program was the only option for the teachers to validate their learners' academic performance. The study of Rodado, 2021 indicates that home visitation could potentially enhance the students' reading performance. Their students' reading habits while at home is a source of concern for the teachers. Mukanova & Eftimova (2021) state that prolonged social isolation and lack of contact cause an imbalance in children's emotional and mental states.

Therefore, although numerous studies have shown benefits for both students and parents when teacher home visit programs have been implemented, fewer studies have specifically examined the challenges teachers face while performing home visits as a part of the new normal education. Jimenez District implemented the home visitation program as prescribed by the DepEd. However, the implementation of this program resulted in varying reactions from teachers. Hence, this qualitative study was conducted to explore the challenging experiences that elementary school teachers faced at Jimenez District, Division of Misamis Occidental, in home visitation during the new normal education and develop practical methods or strategies and relevant programs to address the instructional challenges.

2.0 Methodology

2.1 Research Design

The study utilized a qualitative approach using Moustakas' transcendental phenomenological research design. Phenomenology is the study of conscious knowledge related to the expression of what an individual has perceived, sensed, and known as a result of their experience (Moustakas, 1994). In transcendental phenomenology, the researcher is given the ability to comprehend the significance of the meanings that the participants attach to their experiences of an identifiable occurrence (Moustakas, 1994). A framework for qualitative research served as the basis for the statements reported in this study. The researcher can comprehend the significance of the participants' experiences by analyzing the descriptions. The transcendental phenomenology by Moustakas used to describe the challenges and to investigate the difficulties faced by the elementary school teachers of Jimenez District during the implementation of the new normal education's home visitation program.

2.2 Research Locale

The study was carried out in the District of Jimenez, Division of Misamis Occidental. The first participating school is 7 kilometers away from the town proper. It has five teachers in the elementary department and only three in the junior high department. Since it was only established in 2020 as an integrated school, it has only a total learner population of 142 for this school year from Kindergarten to Grade 8. The second participating school is 8.5 kilometers from the town and part of the ancestral domain of Jimenez. It has five elementary teaching personnel with 85 enrollees from Kindergarten to Grade 6.

2.3 Research Participants

The study participants were nine (9) public elementary school teachers Jimenez District, Division of Misamis Occidental. They were selected through purposive sampling. The following were the criteria in the selection of the participants: (1) currently working as a public elementary teacher in Jimenez District, (2) has at least 3 years in service in the public school, (3) has currently handling monograde classes and (4) is willing to participate in this research study.

2.4 Research Instrument

This study used the researcher-made interview guide to elicit data from the participants. The interview guide included the opening questions, core questions, and closing questions. The questions focused on the challenges the public elementary school teachers encountered at Jimenez District in conducting home visitation during the new normal education. In ensuring the interview guide's validity and reliability, the researcher interviewed three participants who were not included in the final data gathering. Based on the responses, questions that were vague or ambiguous were revised.

2.5 Data Gathering Procedure

This study used a face-to-face interview format to add the benefit of clarifying questions, asking further probing questions, and observing non-verbal communication. During the interview, the health protocols prescribed by the Inter-Agency Task Force (IATF) for COVID-19, like wearing of face mask and social distancing, were strictly followed. Moreover, the interview was digitally recorded. The researcher transcribed the responses of the participants. The transcriptions were examined, and significant statements from each participant were clustered into themes.

2.6 Ethical Considerations

This research study followed ethical guidelines. Both verbally and through a consent letter, the participants were made aware of the purpose of the study. Additionally, they were made aware that their participation was optional and that they might end the interview without providing a reason. Their refusal to participate has no financial cost or loss of benefits, and providing their signed consent does not signify a waiver of any future legal claims, rights, or remedies related to this study. The "Data Privacy Act of 2012," Republic Act No. 10173, was followed by the researcher in all respects. The Ethics Board approved all ethical considerations.

Participants are advised that their materials would be kept strictly confidential and utilized to complete this study. In the research, not a single participant's name was divulged. After the conclusion of the research project, all of the materials were disposed of.

3.0 Results and Discussion

The methodologies developed by Moustakas were utilized in analyzing the transcripts of all participants obtained through the interviews. The responses of the participants in terms of the challenges they encountered during the conduct of home visitation in the new normal education yielded the following themes:

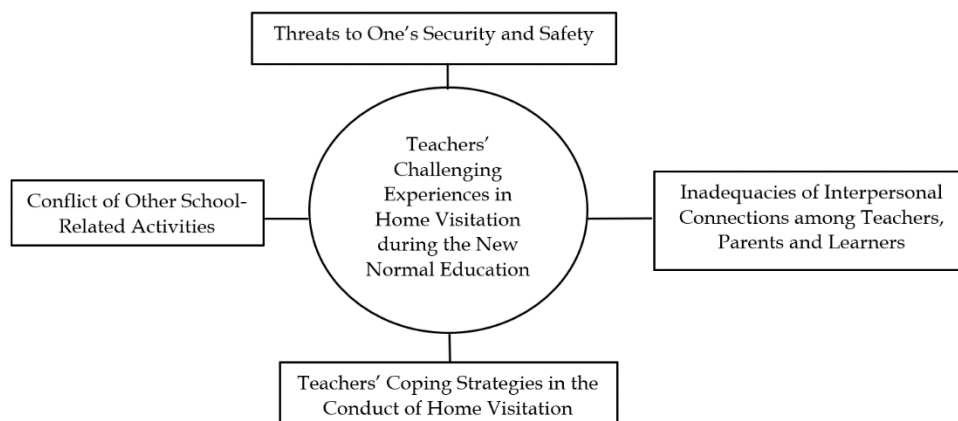


Figure 1. Schematic diagram of the study

3.1 Conflict of Other School-Related Activities

The participants need help conducting home visitation among their learners because of the conflict with other school-related activities they must attend. In addition, teachers are already exhausted with numerous tasks inside the classroom, such as printing and binding Self-Instructional Materials (SIMs), checking submitted Learning Activity Sheets (LAS), recording learners' scores, attending webinars or virtual meetings, and presenting online reports. These experiences were mentioned in the following interview responses:

"The overlapping of school activities such as checking submitted outputs, recording and computing learners' scores, attending webinars, urgent meetings, and submitting reports have added challenges to me in conducting home visitation. I needed to rearrange the schedule and inform the parents about the sudden change of plans." (P4)

"Another challenge I have encountered was the conflict of time. There were instances when our school principal called an urgent meeting in the school in which I had a schedule for home visitation. Again, I have to reschedule the visit and inform the parents about it. Honestly, home visitation during the pandemic is tiresome because I visited all of my 21 grade 1 learners. Unlike before the pandemic, I only visited Learners at Risk of Dropping out (LARDO). But in today's new normal education, home visitation was time-consuming because I allotted only one week for home visitation purposes. I have sacrificed my weekend by going to school to print the SIM (Self-Instructional Materials) and LAS (Learning Activity Sheets) for all my learners." (P2)

"Unlike before the pandemic, I only visited a maximum of 3 pupils who were at risk of dropping out. But now, in the absence of face-to-face classes, I needed to visit all of them to validate their performances. It was exhausting, especially when I needed to sacrifice my weekend in printing and to bind the SIMs for distribution." (P5)

Aside from teaching, teachers have other ancillary services in the school. One of the participants was a Teacher-In-Charge of the school, making it difficult for her to balance between administrative works and teacher-related activities. These experiences were mentioned in the following interview responses:

"In addition, since I am the ICT Coordinator of our school, there were instances when I had to submit urgent online reports as soon as possible. So, I could not visit the learner during that time. Rescheduling visits due to conflicts with other school-related activities was challenging." (P1)

"Honesty, home visitation was very tiresome on my part as the Teacher-In-Charge of Matugas Alto ES. I was already preoccupied with so much work at home and in school. Therefore, I spent sleepless nights and sacrificed my weekends to comply with all the academic and administrative tasks in school." (P7)

"I felt exhausted during home visits because I was the over-all chairperson for the graduation and chairman for school checking committee. I was confused between preparing the program, decorations, and school forms for graduation, or I would continue visiting my unvisited learners in their homes. There were instances when our school principal called emergency meetings that fell on my home visit schedule. It was frustrating that I needed to cancel all the scheduled visits and contact the parents about the sudden change." (P8)

The amount of teacher burnout is significantly influenced by workload. Teachers' productivity is also impacted by their workload (Jumoad et. al., 2021). Teachers are juggling various responsibilities at home and at school, so they have a lot on their minds. In the new normal education, teachers found obstacles and difficulties when making home visits. David Perkins' (2007) Theory of Difficulty was considered adequate by the researcher. His theory demonstrates how teachers respond appropriately to persistent problems in the classroom. As individuals, teachers can focus and prioritize tasks to keep high personal productivity levels at work (Bartlett, 2021). Each of us has many things to do daily, depending on how we prioritize them. As a result, it will help us improve our work quality. According to the responses, teachers find that overlapping school activities and home visitation makes for an exhausting experience. For example, when not properly managed, activities such as printing, binding, and packing of Self-Instructional Materials (SIMs), facilitating the distribution and retrieval of SIMs, checking Learning Activity Sheets (LAS), validating learners' portfolios, and computing grades can lead to conflicts about time. In addition, when the responsibility of making home visits was added to teachers' already heavy workload, the situation became more difficult for them.

3.2 Threats to One's Security and Safety

One of the common problems encountered by teachers during the home visitation is the presence of potentially dangerous threats to their security and safety. When teachers leave the confines of their working stations, their comfort, safety and health are put into risk. Experiencing dangerous situations while traveling to unfamiliar roads makes home visitation challenging for them.

Health Problems among Teachers and Learners. The COVID-19 pandemic has had a significant impact on the health of teachers and learners. Four of the teacher-participants are experiencing COVID-19-related symptoms like fever, cough, cold, and headache. Considering their unhealthy conditions, they were advised to work from home and are restricted from performing activities outside their homes. Because of this, teachers cannot perform the task of visiting their learners for validation. This claim is supported by the participants' responses:

"There was also a time when I suffered from those COVID 19 – related symptoms. It was challenging because I needed to rest and postponed all the scheduled visits." (P2)

"Another challenging experience I encountered during home visitation was when I suffered COVID-19-related symptoms such as fever, cough, and cold. It was challenging because I needed to cancel the scheduled visits for that particular date and time." (P5) *There were also instances when I suffered from those COVID 19 – related symptoms. It was challenging because I needed to rest and cancel all the scheduled visits." (P7)*

"The occurrence of COVID-19-related symptoms adds a more challenging experience for my learners and me. (P8)

There were some instances that children were not feeling well due to COVID-19-related symptoms, and not the teacher herself. Children who suffer from illnesses cannot correctly execute a given activity and are expected to take rest and stay at home. That is why the purpose of home visitation is not carried out by the three participants because of the occurrence of COVID-19-related symptoms among their learners. The following statements of the participants reinforced these claims during the interview:

"The most challenging part of conducting home visitation was the incident of COVID-19-related symptoms among my learners. Three of my learners suffered from headaches, cough, runny nose, fever, and cold during their schedule for home visitation. I was informed late about their health issues, so I could not validate them. (P2)

"The challenging part of conducting home visitation was the occurrence of COVID-19-related symptoms among my learners. Five suffered from cough, runny nose, fever, and colds during their scheduled visits. Before I knew about their health issues, I had already arrived in their respective homes. I was informed late, and visiting their homes was a waste of time because I could not perform my purpose in visiting them. (P7)

"Another parent called me and requested to reschedule her son's home visitation for the following week due to a cough and fever." (P8)

It is important to note that the impact of these health problems may be disproportionately felt by teachers and learners from marginalized communities, who may face additional barriers to accessing healthcare and other resources. Addressing these health problems will require a comprehensive approach that includes addressing the root causes of health disparities and providing support and resources to promote physical and mental well-being among teachers and learners. Health issues among teachers and learners was under DOH AO No. 2020-0015 and DepEd Order No. 14, series of 2020, ensuring that symptomatic individuals be required to stay at home and seek medical attention. For this reason, teachers who suffer COVID 19- related symptoms find difficulty in performing their tasks during home visitation.

Visiting Alone. Most participants rely on their husbands as their drivers and companion in going to far-flung and hard-to-reach home visitation destinations. It is difficult for them to conduct home visitation without their husband, for they do not know how to drive. They are also afraid of being alone in the streets. Since teachers have different schedules for home visitation in their respective classes, it is expected that teachers go by themselves and not in pairs or groups. The following statements of the participants reinforced these claims during the interview:

"One of the challenges I encountered during home visitation was that I needed a companion while going to the houses of my learners. Some of my learners' homes are far from the school. I needed to ride our motorcycle, and my husband was the driver. If my husband had other important things to do, I could not visit my learners far from the school." (P2)

"The challenging part of conducting home visitation was to do it alone. Honestly, I have not visited all of my learners' homes because some are far from the school. My husband was preoccupied with important things, so he could not drive me from one home to another. I only visited those learners who reside near the school." (P3)

"Home visitation during the new normal education was quite challenging. I needed to ask my husband to accompany me during visits. Some of my learners' houses were far from the school. I needed to ride a motorcycle to reach distant places. My husband was unavailable sometimes, so I canceled the scheduled visits that day." (P4)

The desire of teachers to conduct home visitations is sometimes thwarted by the presence of potentially hazardous conditions when traveling to the residences of some students. In addition, when teachers leave the confines of the school campus to provide services in locations other than where they are employed, they expose themselves to a significant risk. Therefore, despite the pandemic, maintaining their responsibilities to ensure that education can continue is a top priority for them, along with ensuring their safety. Visiting homes alone during home visits of teachers ultimately depends on a variety of factors, such as the culture of the community, the perceived safety of the area, and the level of trust established between the teacher and the family. It is important for teachers to assess their comfort level with visiting homes alone and to take steps to prioritize their safety.

Slippery Road. Visiting homes during inclement weather, such as on a slippery road, presented a variety of challenges for teachers. Some potential challenges include increased risk of accidents or injuries due to slippery road conditions, unpredictable weather conditions, which can impact the teacher's ability to conduct the visit as planned, difficulty carrying materials or equipment due to slippery conditions; and increased stress and anxiety related to navigating difficult driving conditions. In the study, during rainy days, some roads leading to the learners' houses are not passable by motorcycles. Teachers must walk on slippery, muddy roads just to reach to their destinations. These were revealed in the answers of the participants:

"Some roads going to my learners' houses were not cemented and were very slippery and muddy during the rainy season. So, I walked because I was afraid of falling from the motorcycle. I postponed the home visitation during heavy rains and stayed at the school." (P2)

"Another challenging experience during home visitation was walking on a very slippery and muddy road on rainy days. I got stranded in one of my pupil's houses because of the rain and went home late." (P4)

"The challenging part of conducting home visitation was that some of my learners reside at Purok 7, the farthest purok in the barangay. It took me about 45 minutes to walk to reach their homes because the roads were not accessible by motorcycles. The rainy season made home visitation a challenging experience. I needed to walk on slippery and muddy roads, got wet, and got stranded due to heavy rainfall. Sometimes, I cancelled the visits and rescheduled them when the weather was fine. (P6)

"The challenge I encountered during home visitation was that some roads going to my learners' homes were difficult to cross during rainy days. It was very muddy and slippery." (P7)

"One of the challenges I encountered during home visitation was a lack of transportation to ride from the school to the home of my learners. I must walk at least 2 kilometers to reach their homes. Most of my learners live kilometers from the school, and some were not passable by vehicles during the rainy season." (P9)

It is important for teachers to be prepared for these challenges and to take steps to prioritize their safety during home visits on slippery roads. This may involve rescheduling or cancelling visits if conditions are deemed unsafe or taking extra precautions to ensure safe driving and navigation during inclement weather. By planning and communicating clearly with families, teachers can help to minimize the impact of these challenges and ensure that home visits are a productive and positive experience for all involved.

Presence of Stray Animals. There are also threatening situations when stray dogs run and bark in the streets, frightening the teachers. The following statements of the participants supported these claims during the interview: *"Also, some homeowners did not tie their dogs, and I was scared of being bitten by stray dogs while going to unfamiliar places."* (P4)

"I once had a memorable experience when I conducted a home visitation, and a dog nearly bit me along the way. I did not know who owned the dog because I was walking towards my learner's house when a big stray dog suddenly tried jumping over me to bite me." (P9)

Maintaining one's health is one of the most important factors to consider to successfully carry out one's obligations and responsibilities as a teacher. Supporting teachers' well-being is critical to prevent significant adverse consequences for teachers, their students, and the education system (Baker et al., 2021). In addition, studies have shown that when children are happy and healthy, they have better academic performance. The health of all citizens, past, present, and future, is the government's number one concern. When COVID-19-related symptoms were becoming evident, it makes it more difficult for the teacher and learner to interact during home visits. The cancellation of the planned visits due to poor health conditions experienced by the teacher and the learner presented a challenge to the teachers' working attitude (Glazzard & Rose, 2020). The interview findings showed that teachers need help getting in touch with their pupils who live in isolated areas where the roads are inaccessible to motorcycles. Both participating schools are part of the ancestral territory of Jimenez Municipality. Most of the people who live in the barangay are Subanen and reside in remote and isolated parts of the community. Teachers are understandably nervous about going on home visits by themselves. They require a partner or companion's assistance to travel from one home to another.

3.3 Inadequacies of Interpersonal Connections among Teachers, Parents, and Learners

DepEd Order No. 31, series of 2020, states that "the responsibility for assessment and feedback should be shared among learners, their families, and their respective teachers." When students and their parents are absent during a home visit, it can be difficult for teachers to administer assessments or validate student work among the students in the new normal platform. Learners and their parents need to be available during home visits to make progress toward achieving the goals and standards designed for new normal education.

Unavailability of Parents and Learners. The participants find it challenging to conduct home visitation when parents and learners are unavailable during visits. Parents are busy working on their farms or in government or private workplaces. Other parents should have noticed the scheduled date and time for home visitation. Instead, they are preoccupied with other appointments, making the teacher and parent interaction during visits become their less priority. There are instances that, due to a change of plans, some parents are not informed. Thus, they had already left their house before the teachers' arrival. Some children are not in their respective homes during visits. They play basketball or other games in the neighboring houses. Others are in the market with their parents. The responses of the participants supported these during the interview:

"Also, there was a time when I arrived at one of my learners' houses; his parents were not around. They forgot about the scheduled home visit date and time. Sometimes, the child was not at home but enjoyed playing on the basketball court with their neighbors. The parents hurriedly called their son when they saw me, and I waited for a few minutes." (P1)

"In addition, some parents were unavailable during the visit. It would be better if parents were there during the visit so that I could give some pointers and additional reading materials to the learners with the assistance of their parents at home." (P2)

"Some parents' contact numbers were out of coverage area and were difficult to reach for calls informing the change of plans. Otherwise, I did not notify some parents, so they went somewhere, and only their kids were at home during my visit. I wanted the parents to be around during my visit so that I could explain their children's reading level and ask them questions about their children's learning process at home during a pandemic." (P3)

"There were also some instances when parents were not around during my visit because of work on their farm, and only their elder siblings were there. It would have been good if I could talk to the parents and ask some queries about their child's learning habits at home. In that case, I would reschedule another visit whenever their parents were available." (P5)

"Another problem I encountered was the unavailability of parents at their respective homes because of work in the office or on the farm. It would be good if I could personally talk to the parents of my learners during the visit so that I could give them guidance or assistance on how they could help their children learn at home." (P7)

"Without communication devices, I failed to inform some parents about the sudden schedule changes; therefore, they and their children were unavailable during my visit because they went to the market." (P9)

The pandemic has forged a strong connection between teachers and parents than ever before. The homeschooling requires parents to support the students' learning academically and economically (Pokhrel & Chhetri, 2021). The study of Doyle, 2020 revealed that parenting is hard, and in the current COVID-19 environment, it has become even harder. Families are spending a relatively small proportion of their day engaged in home schooling. While all families are somewhat worried about home schooling, higher educated parents are also experiencing a greater loss in productivity. Balancing responsibility between their demands of work and children's needs is the most dominant experience encountered by parents (Munastiwi & Puryono, 2021). Many countries implement the "learning from home" policy to avoid contact with the infected people. Unfortunately, the "learning from home" activity requires parents to assist their children. Therefore, they need to stay at home or work from home. Unfortunately, not every job can be done from home. Therefore, parents cannot assist their children during the modular distance learning.

Difficulty in Dealing with the Learners. Another challenging experience teacher face in conducting home visitation is the learners' adverse reactions to visits. School-aged children in the Key Stage 1 (Kinder-Grade 3) are hesitant to communicate with the teachers they have seen for the first time. Teachers need to win their trust first before proceeding to their goal. These experiences were mentioned in the following interview responses:

"One of the challenges that I encountered during home visitation was that I had to establish rapport with my learners. Building rapport was challenging on my part because they had not seen me before. It was their first time seeing me, and so was I. It took longer before I could proceed to my purpose since I had to get their trust first. Some of them did not want to go near me. Others did not want to answer my queries." (P1)

"One of the challenges I have encountered was some of the learners were too shy to speak to me. I needed to get their trust before proceeding with our reading activity." (P2)

"Since I was dealing with the little ones, I had difficulty winning their trust on our first meeting. Two of my learners did not want to show up, even to say hello. They were too shy and afraid to answer some questions about themselves. So, I rescheduled them and did not force them to cooperate." (P9)

Another major concern is the length of isolation many children have had to endure since the pandemic began and what effects it might have on their ability to socialize. The school, for many children, is the agent for forming their social connections as well as where early social development occurs (Hoofman & Secord, 2021). Other learners are anxious during the validation of scores and reading assessment, especially those struggling readers. Their poor participation caused delays in achieving the purpose of home visitation. Teachers found it very challenging when they wasted their time during validation of their learners' performance due to limited interactions. The responses of the participants supported these during the interview:

"One of the challenges I encountered during home visitation was the unwillingness of some learners to face me, especially those who were poor in reading comprehension. They had a fear of face-to-face validation because they knew to themselves their weaknesses." (P7)

"There was a time that one of my learners ran away as soon as he saw me approaching his home. His parents followed him, but still, he was not in the mood to participate. So, I rescheduled him for another day and promised to bring him snacks the next time we met." (P8)

"Another challenging part of conducting home visitation was when some learners did not want to speak out when asked about the lesson or did not want to participate in the activity. Their poor participation caused delays in performing my goal since I needed to set their moods before properly conducting my purpose." (P5)

Given the physical separation between the teacher and the students, the student should be independent in every educational activity assigned to him. The study by Pinquart & Ebeling (2020) concluded that parents should communicate positive educational expectations to their children. The transmission of positive expectations to the offspring and the encouragement of academic engagement is more effective in realizing parental expectations. Studies show that parental involvement is associated with student's educational outcomes. Students' attitudes and aspirations mediate the associations between parental involvement and academic achievement (Otani, 2020). If students and their parents are not present in the homes being visited by teachers, the teachers will be unable to accomplish the goals they set for the visits.

According to the interview findings, teachers take more time to reschedule visits when students and their parents are unavailable during the designated period. When students or their parents do not show up at the selected date and time, it can be difficult for teachers to do their jobs because it requires them to give up another day to go back for the students or their parents. According to the findings of the research conducted by Conto et al. in 2020, it is essential for remote learning to be effectively delivered and taken up for there to be consistent communication between teachers, communities, and caregivers. As a result, the fact that students and their parents are absent during home visits makes it more difficult to maintain open lines of communication. DepEd Order No. 31 s. 2020, also known as Interim Guidelines for Assessment and Grading in Light of the Basic Education Learning Continuity Plan, stipulates that the bases of the learners' grades only include written works and performance tasks. Teachers shall administer written works and performance tasks "to assess the content and performance standards that describe the knowledge, abilities, and skills that learners are expected to demonstrate." (Department of Education, 2020: p. 6). However, teachers find assessing the learner's performance difficult when some are afraid or too shy to speak out or participate during validation. The challenge is on the teachers' part on how to make friends with the learners to make them feel secure, comfortable, and understood, especially the Key Stage 1 learners from Kindergarten to Grade 3. The interview findings indicated that teachers encountered challenges when attempting to administer assessments to students who did not wish to participate in them, particularly students in the Key Stage 1 (which spans kindergarten through third grade). During the pandemic, the research conducted by Munastiwi & Puryono (2021) revealed that many kindergarten management boards needed help to fulfill planned education schedules and had a low success rate in achieving objective targets. In addition, the impressions students form during the first meeting can affect their satisfaction with their learning and performance (Lane et al., 2021). According to Glazier (2021), human connection is at the core of building rapport. As a result, developing a good rapport with a student during a home visit by a teacher is essential to achieving fruitful interaction between the two.

3.4 Teachers' Coping Strategies

The positive well-being of the participants aids in overcoming the challenges of the new normal education (De Vera, 2020). Despite the challenges teachers have encountered in conducting home visitation during the new normal education, they remain diligent and responsive to the needs of their learners. As part of their coping strategies, teachers ask for help from the parents for support through open communication. The following served as a testimony of the participants:

"In coping these challenges, I asked the parents to help me build rapport with their son or daughter so that the next visit would be easier for their child and me. To maximize the time during visits, I have prepared learning activity sheets for them to answer. During the conflict of other activities, I texted their parents about the new schedule and posted a notice in our group chat. To maintain social distancing, I asked the learners to make their voices louder." (P1)

"In coping with those challenges, I requested the parents for their support in supervising their children's learning process at home. I managed the rescheduling of visits by contacting the parents and being flexible enough to the unforeseen circumstances." (P2)

"I requested the parents to co-monitor and co-supervise their children's learning at home, especially their reading habits." (P4)

Accepting the challenges, enjoying and doing work one at a time, and looking at the welfare of their students made the participants stay positive, flexible and adaptive to change. Having a positive outlook and a healthy

lifestyle enables teachers to accomplish their duties and responsibilities despite the challenges of these trying times (Caraan, 2022). These experiences were mentioned in the following interview responses:

"One of my coping strategies was utilizing the purok centers as our meeting place. Also, asking for the support of the parents in overseeing their children's learning performance in all subjects helped make home visitation easier." (P3)

"I coped with these challenges by being flexible enough for any unexpected circumstances. Also, I asked my husband a week before the scheduled visits so he could share his time in accompanying me." (P4)

"In coping with the mentioned challenges I encountered in conducting home visitation, I taught myself to adapt to changes to think of better solutions quickly. For example, during rainy seasons, I needed to inform the parents about the postponement of visits to avoid conflict with their other activities at work. As to reaching distant homes, I walked early to arrive on time." (P6)

"The ways I did to cope with the different challenges I encountered were the following: wearing rain boots and bringing an umbrella during the rainy season; making changes of schedules based on the availability of pupils or parents; communicating regularly with the parents about their issues and concerns; making an alternative agreement to those learners suffering from COVID 19 – related symptoms; making myself physically fit and healthy always." (P7)

"I always think positively and never lose hope when coping with my challenges. Even with how complicated the situation was, I would never give up. I would revisit my learners until I could fulfill my purpose." (P9)

The findings of the study showed that the teachers' coping strategies have assisted them in remaining optimistic and flexible in the face of the challenges they encountered while conducting home visits. To be able to teach effectively, one must possess the necessary skills and capacities, including the capacity to adapt to changing environments, while also maintaining communication and effectively engaging with learners. These are all critical factors (Colclasure et al., 2021). The degree to which educators believe they can accomplish their professional goals has a significant bearing on key academic outcomes. Employees who have confidence in their own abilities view problems and emergencies as challenges to be overcome (Cahapay et al., 2021). According to Albert Bandura's (1977) Theory of Self Efficacy, as it relates to instruction, teachers encounter numerous obstacles as they try to implement the home visitation program in the new normal education. Teachers reported several work-related stress triggers including busy times of the year, such as assessment periods, the pressure of extra curricula activities, and keeping up with the pace of change (Glazzard & Rose, 2020). Bandura's research, however, indicated that efficacy expectation is the mechanism through which changes in self-efficacy may be identified, and efficacy expectation was demonstrated to impact results.

4.0 Conclusion

The challenges did public elementary school teachers encounter in home visitation during the new normal education were the following: (1) Threats to One's Security and Safety. The cancellation of the planned visits due to poor health conditions experienced by the teacher and the learner presented a challenge to the teachers' working attitude. When teachers leave the confines of the school campus to provide services in locations other than where they are employed, they expose themselves to a significant risk; (2) Inadequacies of Interpersonal Connections among Teachers, Parents and Learners. The interview findings indicated that teachers encountered challenges when attempting to administer assessments to students who did not wish to participate in them, particularly students in the Key Stage 1. When students and their parents are absent during a home visit, it can be difficult for teachers to administer assessments or validate student work among the students in the new normal platform; and (3) Conflict of Other School-Related Activities. According to the responses, teachers find that overlapping school activities and home visitation makes for an exhausting experience. When the responsibility of making home visits was added to teachers' already heavy workload, the situation became more difficult for them. However, teachers cope with the different challenges they have encountered during home visitation by asking help from the parents for support through open communication. Accepting the challenges, enjoying and doing work one at a time, and looking at the welfare of their students made the participants stay positive, flexible and adaptive to change. Having a positive outlook and a healthy lifestyle enables teachers to accomplish their duties and responsibilities despite the challenges of these trying times.

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9.0 References

- Balgos, L. R., & Villarente, S. V. (2022). Impact of COVID-19 pandemic on the family of learners with special educational needs. Available at SSRN 4231340. <https://dx.doi.org/10.2139/ssrn.4231340>
- Bandura, A., Adams, N.E. Analysis of self-efficacy theory of behavioral change. *Cogn Ther Res* 1, 287–310 (1977). <https://doi.org/10.1007/BF01663995>
- Bartlett MJ, Arslan FN, Bankston A, Sarabipour S (2021) Ten simple rules to improve academic work–life balance. *PLoS Comput Biol* 17 (7): e1009124. <https://doi.org/10.1371/journal.pcbi.1009124>
- Bayucca, S. A. (2021). Challenges encountered and technical assistance needed by parents and learners utilizing modular distance learning: Basis for a proposed support program. *Journal of Humanities and Social Sciences (JHASS)*, 3(3), 128-135. <https://doi.org/10.36079/lamintang.jhass-0303.297>
- Cahapay, M. B. (2020). Rethinking education in the new normal post-COVID-19 era: A curriculum studies perspective. *Aquademia*, 4(2), ep20018, 2020 <https://doi.org/10.29333/aquademia/8315>
- Caraan, G., Rodriguez, G., & Quines, L. (2022). Challenges Experienced by Teachers Teaching in Remote Areas in the New Normal. *International Journal of Recent Research in Thesis and Dissertation (IJRTD)*, 3(1), 46-53. <https://doi.org/10.5281/zenodo.6497327>
- Colclasure, B. C., Marlier, A., Durham, M. F., Brooks, T. D., & Kerr, M. (2021). Identified challenges from faculty teaching at predominantly undergraduate institutions after abrupt transition to emergency remote teaching during the COVID-19 pandemic. *Education Sciences*, 11(9), 556. <https://doi.org/10.3390/educsci11090556>
- Conto, C. A., Akseer, S., Dreesen, T., Kamei, A., Mizunoya, S., Rigole, A., & Unicef. (2020). COVID-19: Effects of school closures on foundational skills and promising practices for monitoring and mitigating learning loss (pp. 1-30). UNICEF Office of Research-Innocenti. <https://www.unicef-irc.org/publications/pdf>
- DepEd Order No. 14, series of 2020. (2020, June 25) https://www.deped.gov.ph/wp-content/uploads/2020/06/DO_s2020_014.pdf
- DepEd Order No. 31. s. 2020. (2020, October 02). https://www.deped.gov.ph/wp-content/uploads/2022/06/DO_s2022_031.pdf
- De Vera, J. L., Andrada, M. D., Bello, A., & De Vera, M. G. (2021). Teachers' competencies in educational technology integration on instructional methodologies in the new normal. *Lukad: An Online Journal of Pedagogy*, 1(1), 61-80. <https://ssrn.com/abstract=3885890>
- DOH AO No. 2020-0015 (2020, April 27). <https://doh.gov.ph/sites/default/files/health-update/ao2020-0015.pdf>
- Gayatri, M., & Irawaty, D. K. (2022). Family resilience during COVID-19 pandemic: A literature review. *The Family Journal*, 30(2), 132-138. <https://doi.org/10.1177/10664807211023875>
- Glazzard, J., & Rose, A. (2020). The impact of teacher well-being and mental health on pupil progress in primary schools. *Journal of Public Mental Health*, 19(4), 349-357. <https://doi.org/10.1108/JPMH-02-2019-0023>
- Hoofman, J., & Secord, E. (2021). The effect of COVID-19 on education. *Pediatric Clinics*, 68(5), 1071-1079. <https://doi.org/10.1016/j.pcl.2021.05.009>
- Jomud, P. D., Antiquina, L. M. M., Cericos, E. U., Bacus, J. A., Vallejo, J. H., Dionio, B. B., ... & Clarin, A. S. (2021). Teachers' workload in relation to burnout and work performance. *International journal of educational policy research and review*. <https://doi.org/10.15739/IJEPRR.21.007>
- Lane, A. K., Meaders, C. L., Shuman, J. K., Stetzer, M. R., Vinson, E. L., Couch, B. A., ... & Stains, M. (2021). Making a first impression: Exploring what instructors do and say on the first day of introductory STEM courses. *CBE – Life Sciences Education*, 20(1), ar7. <https://doi.org/10.1187/cbe.20-05-0098>
- Luaña, J. P. (2021). Why do Parents Answer their Children's Modules? A Closer Look on Parental Practices and Challenges in Modular Distance Learning. *International Journal of Global Community*, 4(1 - March), 1 - 16. Retrieved from <https://journal.riksawan.com/index.php/IJGC-RI/article/view/83>

- Malabarbas, G. T., Jr, G. L. G., Taperla, P. G., & Amoto, B. L. (2022). Home Visitation Effectiveness on Students' Academic Performance During COVID-19 Pandemic. *Journal of Education and Practice* 13(5):54-61. <https://doi.org/10.7176/JEP/13-5-07>
- Mukanova, P., & Eftimova, S. (2021). Reading and Readers During a Pandemic: The Experience of the Children's Department of the Sofia City Library. In *EDULEARN21 Proceedings* (pp. 3375-3379). IATED. <https://doi.org/10.21125/edulearn.2021.0715>
- Munastiwi, E., & Puryono, S. (2021). Unprepared management decreases education performance in kindergartens during Covid-19 pandemic. *Heliyon*, 7(5), e07138. <https://doi.org/10.1016/j.heliyon.2021.e07138>
- Nurdyansyah, N., & Nyong, E. T. I. S. (2020). Implementation of Home Visite Program in Overcoming Student Learning Problems in SD Muhammadiyah 1 Pucanganom Sidoarjo. *Proceedings of The ICECRS*, 6. <https://doi.org/10.21070/icecrs2020385>
- Otani, M. (2020). Parental involvement and academic achievement among elementary and middle school students. *Asia Pacific Education Review*, 21(1), 1-25. <https://doi.org/10.1007/s12564-019-09614-z>
- Otani, Pinquart, M., & Ebeling, M. (2020). Parental educational expectations and academic achievement in children and adolescents – a meta-analysis. *Educational Psychology Review*, 32, 463-480. <https://doi.org/10.1007/s10648-019-09506-z>
- Pokhrel, S., & Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. *Higher education for the future*, 8(1), 133-141. <https://doi.org/10.1177/2347631120983481>
- Rodado, C. C. (2021). The Implementation of Limited Face-to-Face Reading Classes Through Home Visitation to Enhance the Reading Skills of Grade VI Pupils. *INTERNATIONAL JOURNAL OF ADVANCED MULTIDISCIPLINARY STUDIES*, 1(4), 88-95. www.ijams-bbp.net
- Talimodao, A. J. S., & Madrigal, D. V. (2021). Printed Modular Distance Learning in Philippine Public Elementary Schools in Time of COVID-19 Pandemic: Quality, Implementation, and Challenges. *Philippine Social Science Journal*, 4(3), 19-29. <https://doi.org/10.52006/main.v4i3.391>
- Villaruz, M. G., Lacandazo, M. H., Saibudin, D. L., Claveria, V., Raballe, D., & Perez, D. (2022). Impact of New Normal Education to Teachers and Students in Southern Palawan, Philippines. *Psychology and Education: A Multidisciplinary Journal*, 3(3), 175-18. doi: 10.5281/zenodo.6889499, ISSN 2822-4353
- Wright, K. B., Shields, S. M., Black, K., & Waxman, H. C. (2018). The effects of teacher home visits on student behavior, student academic achievement, and parent involvement. *School Community Journal*, 28(1), 67-90. <http://www.schoolcommunitynetwork.org/SCJ.aspx>
- Yates, H.E. (2023). [Review of the book *Connecting in the Online Classroom: Building Rapport Between Teacher and Students*, by Rebecca A. Glazier]. *The Review of Higher Education* 46(3), 407-410. <https://doi.org/10.1353/rhe.2023.0005>.

Challenges and Adaptation Practices of Farmers on Climate Change

Ruvy M. Tuble^{1*}, Leni M. Lacuesta²

¹Carlos Hilado Memorial State University, Negros Occidental, Philippines

²City Agriculture Office, LGU-Victorias City, Negros Occidental, Philippines

*Corresponding Author Email: ruvy.tuble@chmsu.edu.ph

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Abstract. Climate change presents the agricultural industry with unforeseen difficulties, impacting livelihoods, food security, crop productivity, and sustainability. This descriptive study aims to illuminate the prevalent challenges in production and cropping patterns experienced by farmers due to climate change, along with their primary adaptation practices to mitigate adverse effects. It employs statistical tools such as ranking, mean, standard deviation, frequency count, and percentage distribution for data analysis. The respondents primarily consisted of high school graduate women with extensive farming experience and land ownership. Results indicate that climate change has exacerbated challenges in crop production, with low yields, pest and disease outbreaks, and flood damage being the most prominent issues. Farmers encounter numerous challenges in deciding on cropping patterns, mainly due to limited knowledge about viable techniques such as crop mapping, intercropping, pest and nutrient management, and water scarcity in non-irrigated fields. The results also show that farmers have adopted several strategies, including reducing the use of pesticides and petroleum-based fertilizers, conserving water during dry seasons, and improving drainage and soil mulching to prevent weed growth. Interestingly, indigenous methods have also been continuously utilized to mitigate the effects of climate change. This emphasizes the importance of innovative farming methods and ongoing farmer education initiatives for capacity building. Additionally, the results found no statistically significant association between challenges and adaptation practices.

Keywords: Climate change; Challenges on climate change; Adaptation on climate change; Agriculture; Production; Crop patterns; High value crops farmers.

1.0 Introduction

The Philippines, with its more than 7,100 islands, relies heavily on agriculture, making it highly vulnerable to the socioeconomic impacts of natural disasters such as typhoons, floods, landslides, and earthquakes. Recent data shows that 78.7% of the nation's GDP is at risk from these natural disasters, "posing significant challenges to agricultural sustainability (Saldivar-Sali, 2016). This vulnerability has spurred a growing body of research focused on the impact of climate change on Philippine agriculture. For instance, a study by David et al. (2020) examined how certain provinces' rice production is vulnerable to climate change, highlighting the urgent need for adaptation measures to safeguard food security. Similarly, Santos and Castillo (2019) analyzed the effect of climate variability on maize output in Mindanao and emphasized the importance of implementing resilient agricultural techniques to minimize crop losses. Moreover, Reyes et al. (2021) stated climate change significantly disrupts livelihoods and food security. These findings underscore the pressing need for targeted interventions to enhance the ability of agricultural communities to cope with climate-related challenges.

The current study aims to quantitatively analyze the cropping and production patterns of Philippine agricultural communities. It seeks to quantify the specific challenges encountered by farmers during the process of adaptation to these patterns. The ultimate objective is to collect empirical data that can be used to develop quantitative mitigation and adaptation strategies for these communities in response to climate change.

The systematic review conducted by Barbeiri, Bittner, Adair, and Wollenberg (2024) revealed a predominant focus within agricultural mitigation and adaptation literature on sustaining or enhancing agricultural production as the primary strategy for addressing climate change impacts. Correspondingly, Mazur et al. (2019), Kibue et al. (2021), and Swe et al. (2020) emphasize the importance of mitigation processes in strengthening resistance to climate change. For that reason, the study considers assessing the primary challenges and the adaptation techniques posed by climate change.

2.0 Methodology

2.1 Research Design

The study utilized a descriptive-correlational research design along with a comprehensive research framework. Descriptive research, as elucidated by McCombies (2019), was employed to facilitate a detailed understanding of the challenges faced by farmers, encompassing issues such as low yields, pest infestations, and crop damage. Furthermore, as discussed by Cherry (2019), relational research was utilized to explore the relationships between challenges and adaptation practices as the study aimed to uncover patterns and associations that could inform effective mitigation strategies. The design is well-suited for this study as it describes phenomena under investigation and explores the underlying relationships between variables. This approach is essential for developing comprehensive strategies to enhance agricultural systems' resilience to climate change's impacts.

2.2 Research Locale

The study was carried out in one of the component cities located in the northern part of Negros Occidental.

2.3 Research Participants

Using Yamane's formula with a 5% margin of error, 80 participants were determined as a sample size from 100 high-value commercial crop farmers. The distribution of respondents based on association affiliation is as follows: Victorias Organic Farmers Association (VOFA) has 22 participants, Minuro Agrarian Reform Beneficiaries-Multi-Purpose Cooperative (MARBE-MPC) with 17, Kailo Farmers Association (KAFA) with 8, Victorias Integrated Social Forestry Farmers Association (VISFFA) with 14, and Rural Improvement Club of Hda. San Jose (RIC) with 19. The study employed stratified random sampling to ensure proportional representation from each subgroup, minimizing biases and ensuring equal chances of selection among the High-Value Crops Farmers Association members.

2.4 Research Instrument

The study employed a researcher-made survey questionnaire formulated from reviewed literature. Divided into five parts, it gathered data on participants' profiles, challenges in production and cropping patterns due to climate change, and adaptation practices. Likert Five-point Scales were used for rating statements, ensuring comprehensive insight into farmers' experiences and strategies. The survey instrument underwent a validity test using Content Validity Ratio (CVR) and was administered online. Jurors, including senior agriculturists and coordinators from various institutions, evaluated the questionnaire's relevance. Twenty-three test items deemed essential with a CVR of 59% or higher were retained. Reliability, tested with Cronbach's alpha, showed a highly reliable instrument with a coefficient of 0.908.

2.5 Data Gathering Procedure

A formal request letter was dispatched to the City Agriculturist and various chairpersons of farmer's associations seeking approval for the study among their members. Reproduced survey questionnaires were distributed to eighty high-value commercial crop farmers. The researcher conducted face-to-face surveys, adhering to health protocols, and ensured questionnaires were accurately translated into the local language. All completed surveys were diligently collected, consolidated, and tabulated. The weight assigned to quantitative scales in each questionnaire was meticulously considered for data analysis. Statistical findings were presented, consolidated, interpreted, and analyzed in tabular form.

2.6 Ethical Considerations

This research study followed ethical guidelines throughout the study. Respondents participated voluntarily, understanding that their responses would be handled with the utmost confidentiality solely for academic

purposes, without any financial incentives involved. Upon study completion, filled-out survey questionnaires were responsibly disposed of by recycling paper into charcoal, ensuring environmental sustainability.

3.0 Results and Discussion

3.1 Profile of the Respondents

The data in Table 1 presents the demographic profile of participants, such as age, sex, household size, land ownership, monthly average income, educational attainment, and marital status. An equal distribution was observed among age groups, with half of the respondents aged 49 and below and the remainder aged 50 years and above. Females comprised the majority at 56.3%, while males represented 43.8%. Household size predominantly fell within the range of 1-5 members (61.3%), followed by 6-10 members (35%), with a small fraction residing in households with over ten members (3.8%). Land ownership primarily rested with the farmers themselves (66.3%), with a minority leasing (5%), acting as tenants (12.5%), or under alternative agreements (16.3%). Monthly income predominantly ranged from 1,000 to 5,000 pesos (83.8%), followed by 6,000 to 10,000 pesos (13.8%), and a minority earning 11,000 to 15,000 pesos (2.5%) monthly. Educational attainment varied, with the highest percentage holding high school diplomas (47.5%), followed by those with elementary education (33.8%) and a college degree (5%). Marital status indicated that the majority were married (86.3%), with smaller proportions identified as single (3.8%), widowed (6.3%), or in a live-in relationship (3.8%). These insights highlight the diverse demographic landscape among farmers and underscore the need for tailored interventions to address their distinct challenges in agricultural practices.

Table 1. Frequency and percentage distribution of respondents in terms of demographic profile

Demographic Profile	Frequency	Percentage
Age		
(Below 49 years old)	40	50.0
(49 years old and above)	40	50.0
Sex		
Male	35	43.8
Female	45	56.3
Household size		
1 - 5 members	49	61.3
6 - 10 members	28	35.0
10 and above members	3	3.8
Land ownership		
Lease	4	5.0
Tenant	10	12.5
Owned	53	66.3
Others	13	16.3
Monthly Average Income		
1,000 to 5,000	67	83.8
6,000 to 10,000	11	13.8
11,000 to 15,000	2	2.5
Educational Attainment		
Elementary	27	33.8
High school	38	47.5
College level	11	13.8
College Graduate	4	5.0
Marital Status		
Married	69	86.3
Single	3	3.8
Widow	5	6.3
Live-in	3	3.8

3.2 Challenges Encountered by Farmers on Climate Change

Production

Data in Table 2 reveals the significant challenges faced by farmers in relation to climate change impacts on production. The most notable challenge identified by farmers which received the highest mean rating is the climate-induced impacts on crop yields (Mean=4.61, SD=0.54). Following closely behind are uncontrollable changes in the atmosphere leading to pest and disease outbreaks (Mean=4.59, SD=0.63), crop damage due to floods caused by heavy rains (Mean=4.55, SD=0.59), and the complexity of crop cultivation arising from water scarcity (Mean=4.50, SD=0.66), all rated as "Very High" challenges, respectively. Additionally, the disruption of plant

development due to extreme weather conditions received a mean rating of 4.48 (SD=0.59), indicating a "High" level of concern among farmers. The findings underscore the consistency of farmers' experiences with climate-related challenges, reflecting a heightened awareness among respondents.

Table 2. Challenges encountered by farmers on climate change in terms of production

Challenges on Production	M	SD	Interpretation	Rank
1. Affects crop growth resulting in low yields.	4.61	0.54	Very high	1
2. Triggers an uncontrollable change of atmosphere which heads pest and diseases on crops.	4.59	0.63	Very high	2
3. Damages the crops due to flood caused by heavy rains.	4.55	0.59	Very high	3
4. Creates complexity in growing crops because of insufficient water supply in the farm.	4.50	0.66	Very high	4
5. Disrupts the developmental stage of the plants due to extreme weather conditions.	4.48	0.59	High	5

Furthermore, the results imply a notable risk to food security, highlighted by high ratings for challenges such as impacts on crop yields, pest and disease outbreaks, and crop damage due to floods. Urgent adaptation strategies are required, including improved crop varieties and water management techniques, to mitigate these risks. This aligns with the findings of Alhassan et al. (2019) and Amikuzumo et al. (2019), who emphasize the exacerbation of food production challenges by climate change-induced soil degradation and population growth. In response to these challenges, the Climate Change Act of 2009 (R.A. 9729) acknowledges farmers' vulnerability and emphasizes the importance of integrating climate adaptation and mitigation measures into agriculture. Targeted interventions and investments in climate-sensitive sectors are essential to address these challenges effectively.

Cropping Pattern

The analysis of the results shown in Table 3 highlights the unanimous agreement among respondents regarding the challenges encountered regarding cropping patterns due to climate change. Notably, the challenge of low knowledge of adoptable cropping pattern practices received the highest mean score (M=4.53, SD=0.55), indicating a strong consensus among participants. It underscores the critical need for enhanced education and training programs to equip farmers with the necessary skills to adapt to changing agricultural practices. Respondents also concurred that climate change-induced water scarcity significantly affects cropping patterns, particularly in non-irrigated farms during the summer/dry season (M=4.45, SD=0.65), thereby ranked second. The challenges posed by unpredictable changes in water and heat humidity (M=4.30, SD=0.62), weather fluctuations affecting sowing dates (M=4.26, SD=0.71), and intricate crop pattern management in flood-prone areas (M=4.18, SD=0.63), were also acknowledged by respondents.

Table 3. Challenges on climate change in terms of cropping pattern

Challenges on Cropping Pattern	M	SD	Interpretation	Rank
1. Affects farming operation due to low knowledge on adoptable cropping pattern practices like intercropping, crop mapping, and integrated pest and nutrient management.	4.53	0.55	Very high	1
2. Causes water scarcity that affects the cropping pattern that affects the non - irrigated farms particularly during summer/dry season.	4.45	0.65	High	2
3. Unpredictable change of water and heat humidity brought unfavorable conditions for seasonal crops.	4.30	0.62	High	3
4. Creates weather fluctuations that affects the sowing date.	4.26	0.71	High	4
5. Creates intricate crop pattern management on prone to flood environment.	4.18	0.63	High	5

These findings suggest that farmers have encountered explicit challenges due to climate change, disrupting their cropping patterns. The result resonates with literature such as that of Stuecker et al. (2018), emphasizing the increasing importance of skillful seasonal prediction to guide agricultural management in mitigating the compounded impacts of soil moisture variability and temperature stress. As climate change intensifies, addressing these challenges becomes paramount to ensure sustainable farming practices and food security.

3.3 Adaptation Practices on Climate Change

Production

The data presented in Table 4 provides valuable insights into farmers' adaptation practices concerning climate change in production. The findings suggest a strong consensus among farmers regarding the adoption of various adaptation strategies. Notably, practices such as minimizing the use of petroleum-based fertilizers and pesticides (M=4.61, SD=0.58) and water conservation during dry seasons or droughts (M=4.54, SD=0.62) emerged as the topmost adaptation measures. Additionally, farmers recognize the importance of using high-quality seeds (M=4.38, SD=0.74), practicing soil conservation (M=4.20, SD=0.79), and employing compost application to enhance soil fertility (M=4.20, SD=0.79). These findings underscore the proactive approach taken by farmers in addressing the challenges posed by climate change in agricultural production.

Table 4. Adaptation practices on climate change in terms of production

Adaptation practices	M	SD	Interpretation	Rank
1. Minimizing use of petroleum-based fertilizers & pesticides.	4.61	0.58	Very high	1
2. Conserve water use of particularly in times of dry season/drought.	4.54	0.62	Very high	2
3. Use of good quality seeds & planting materials of well-adopted varieties.	4.38	0.74	High	3
4. Encourage practice of soil conservation.	4.34	0.67	High	4
5. Uses compost application to increase organic matter and builds soil fertility.	4.20	0.79	High	5
6. Control of pests and diseases through integrated pest management.	4.18	0.71	High	6
7. Integrating livestock into crop production.	4.08	0.76	High	7

Furthermore, livestock integration into crop production emerged as a notable adaptation strategy (Mean=4.08, SD=0.76), aligning with Musara, Tibugari, Moyo, & Mutizira (2021), who emphasize farmers' efforts to increase productivity for crops and livestock to target rewarding markets. However, challenges persist, as highlighted by Peñalba (2019), who underscores limited knowledge and financial constraints hindering farmers from adopting new adaptation techniques and technologies. Nevertheless, studies such as TeGrate (2018) highlight the resilience of farmers in adapting to changing climate conditions by adjusting crop selection, timing field operations, and implementing sustainable agricultural practices. This indicates that despite challenges, farmers can adapt to climate change through innovation and resourcefulness, suggesting the importance of providing support and resources to facilitate adaptation efforts and enhance resilience in agricultural systems.

Cropping Pattern

Table 5 presents data on farmers' adaptation practices concerning climate change in terms of cropping patterns. Among the implemented practices, drainage improvement to reduce stress on the root system (Mean=4.53, SD=0.57) and control weeds using them for soil mulching or animal feeding (Mean=4.50, SD=0.64) were strongly agreed upon. Additionally, farmers indicated agreement with practices such as enhancing knowledge and preparedness for climate-proof farming (Mean=4.46, SD=0.64), diversifying crop plans and rotations (Mean=4.45, SD=0.57), practicing soil conservation to reduce erosion and nutrient leaching (Mean=4.34, SD=0.64) and improving crop cultivars tolerant to drought and other stresses (Mean=4.25, SD=0.65) as measures to mitigate climate change impacts on their cropping patterns.

These findings suggest that farmers are actively engaged in implementing adaptive strategies to enhance the resilience of their agricultural systems. Mase et al. (2017) and Xiaomeng (2020) also highlight various adaptation options available to farmers, including crop switching, altering planting times, improving irrigation measures, and enhancing soil conservation practices, which align with the practices reported by the surveyed farmers.

Table 5. Adaptation practices on climate change in terms of cropping pattern

Adaptation Practices	M	SD	Interpretation	Rank
1. Improve drainage that reduces stress to the root system.	4.53	0.57	Very high	1
2. Control weeds by using it for soil mulching or animal feeding.	4.50	0.64	Very high	2
3. Enhance knowledge and preparedness for a climate-proof farming practice.	4.46	0.64	High	3
4. Diversifying crop plans and crop rotations.	4.45	0.57	High	4
5. Practice soil conservation to reduce soil erosion & nutrient leaching.	4.34	0.64	High	5
6. Improving crop cultivars more tolerant to drought and other stresses.	4.25	0.65	High	6

3.4 Relationship Between Challenges and Adaptation Practices

Table 6 presents the relationship between the challenges encountered by farmers and their adaptation practices concerning climate change on both production and cropping patterns. The analysis revealed a non-significant relationship [$r(77) = 0.206$, $p = 0.069$] at the 0.05 level of significance, indicating no association between challenges and adaptation practices. These findings suggest that despite facing challenges related to climate change in production and cropping patterns, farmers' adaptation practices are not significantly influenced by the severity of these challenges.

Table 6. Relationship between challenges and adaptation practices on climate change

Variables	df	r-value	p-value	Interpretation
Challenges *	77	0.500	0.069	Not Significant
Adaptation		0.206		

*Significant if α is $\geq .05$

This result may be attributed to a need for more knowledge among farmers regarding appropriate mitigation strategies, as indicated in Table 3, which may hinder their ability to address the challenges they encounter effectively (Chowdhury, Hasan, & Islam, 2022). Further research and targeted education efforts could help bridge this gap, enabling farmers to adopt more effective adaptation practices and build resilience in the face of climate change.

4.0 Conclusion

The study reveals that the farming community, predominantly comprising women, possesses extensive experience in farm production and cropping patterns, often with a background of completing high school education and land ownership. While farmers demonstrate a commendable awareness of the challenges posed by climate change in production and cropping patterns, their adaptation practices are hindered by a perceived lack of knowledge regarding advanced technologies and methodologies. The study highlights the importance of introducing climate-smart agricultural technologies alongside ongoing farmer training and capacity-building initiatives involving local stakeholders, including government units and civil society organizations. Furthermore, the study underscores the absence of a significant relationship between the challenges faced and the adaptation practices employed by farmers, indicating a potential gap in effective mitigation strategies. Therefore, there is a critical need for targeted interventions, such as capacity-building programs and access to relevant resources, to enhance farmers' resilience to climate change and ensure sustainable agricultural practices in the region.

5.0 Contributions of Authors

AA – editing, writing, processing of data electronically, data analyses, etc.

BA – writing, data gathering, encoding, etc.

6.0 Funding

The research was conducted without financial support from any external organizations. All costs associated with the research were covered by the researchers personally.

7.0 Conflict of Interests

The authors confirmed no conflicts of interest regarding this study.

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9.0 References

- David, C. P., Inocencio, A. B., & Wais, R. P. (2020). Vulnerability of Rice Production to Climate Change in Selected Provinces in the Philippines. *Journal of Agriculture and Rural Development*, 124(2), 45-58.
- Santos, M. L., & Castillo, J. M. (2019). Effects of Climate Variability on Maize Production in Mindanao, Philippines. *Climate Change Research Journal*, 8(3), 112-126.
- Reyes, G. A., Cruz, R. S., & Garcia, L. T. (2021). Socio-Economic Impacts of Climate Change on Smallholder Farmers in Luzon, Philippines. *Journal of Environmental Economics and Management*, 45(1), 78-92.
- Mazur, J., Smith, K., & Johnson, T. (2019). Social Processes in Climate Change Adaptation: A Review of Recent Literature. *Environmental Sociology*, 6(2), 112-128.
- Swe, P., Htun, H., & Aung, M. (2020). Enhancing Resilience to Climate Change: Lessons from Agricultural Communities in Myanmar. *Climate Policy*, 19(3), 245-259.
- Kibue, L. W., Mungai, N., & Nyongesa, W. (2021). Community-Based Adaptation to Climate Change: Insights from Rural Kenya. *Journal of Sustainable Development*, 12(4), 176-190.
- Musara, J., Tibugari, H., Moyo, B. & Mutizira, C. (2021). Crop-livestock integration practices, knowledge, and attitudes among smallholder farmers: Hedging against climate change-induced shocks in semi-arid Zimbabwe. *Open Life Sciences*, 16(1), 1330-1340. <https://doi.org/10.1515/biol-2021-0135>
- Xiaomeng, C. (2020). Climate change and adaptation in agriculture: Evidence from US cropping patterns. *Journal of Environmental Economics and Management*, 101. <https://doi.org/10.1016/j.jeem.2020.102306>
- Chowdhury, M., Hasan, B. and Islam, S (2022). Climate change adaptation in Bangladesh: Current practices, challenges and the way forward. *The Journal of Climate Change and Health*, 6. <https://doi.org/10.1016/j.joclim.2021.100108>
- Samuel, J., Rubhara, T. T., Antwi, M. A., & Oduniyi, O. S. (2020). Challenges to climate change adaptation practices. *The International Journal of Climate Change: Impacts and Responses*, 12(3), 19-32. doi:<https://doi.org/10.18848/1835-7156/CGP/v12i03/19-32>
- Barbieri, L., Bittner, C., Wollenberg, E., & Adair, E. C. (2024). Climate change adaptation and mitigation in agriculture: A review of the evidence for synergies and tradeoffs. *Environmental Research Letters*, 19(1), 013005. doi:<https://doi.org/10.1088/1748-9326/ad1629>
- Khatibi, H., Wilkinson, S., Sweya, L. N., Baghersad, M., & Dianat, H. (2024). Navigating climate change challenges through smart resilient cities: A comprehensive assessment framework. *Land*, 13(3), 266. doi:<https://doi.org/10.3390/land13030266>
- Stuecker, M. F., Tigchelaar, M., & Kantar, M. B. (2018). Importance of Skillful Seasonal Prediction in Agriculture. *Journal of Climate*, 31(15), 5811-5820.
- Megersa, B., Markemann, A., Angassa, A., & Ogutu, J. O. (2014). Coping strategies against climate-induced livestock mortality: A study on Borana pastoralists, southern Ethiopia. *Global Environmental Change*, 24, 163-172.
- Peñalba, L. (2019). Perception and Adaptation of Farmers to Climate Change: The Case of the Municipality of Pontevedra, Capiz, Philippines. *Asia Pacific Journal of Multidisciplinary Research*, 7(1), 13-18.
- TeGrate (Interdisciplinary Teaching about Earth for a Sustainable Future). (2018). Climate Change and Agriculture. Retrieved from <https://www.tegrate.org/activity/agriculture/>

Senior High Students' Level of Satisfaction and Performance toward Work Immersion

Raymark Anthony P. Saluria*, Ednalane Mae Mariño

Saint Louis School of Don Bosco, Inc., Dumaguete City, Negros Oriental, Philippines

*Corresponding author email: raymarksaluria@slsdb.edu.ph

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Abstract. The incorporation of Work Immersion as one of the salient subjects in the senior high curriculum aims to develop the full potential of students and prepare them for college education and the world of work. The study sought to determine and evaluate the satisfaction level of Work Immersion students and gauge their performance as perceived by supervisors of the company and industry partners. Utilizing a descriptive survey design, this research was conducted among 94 senior high students who were part of the Off-Campus Work Immersion at Saint Louis School of Don Bosco. The study employed a questionnaire devised by Necio et al. (2022) that measured the level of satisfaction of students toward Work Immersion. Meanwhile, another questionnaire was devised to gauge the performance of students as perceived by the Work Immersion partners. The results showed that the level of satisfaction of students toward Work Immersion is very high. The students manifested a very satisfied experience with their working relationship with supervisors as they assisted them in gaining the knowledge and skills needed for their immersion. Furthermore, the level of performance of Work Immersion students is very high as rated and evaluated by their supervisors. The students gained the abilities and competencies needed to behave professionally in a real-world workplace. The results of the study can be utilized as baseline data for the improvement of the Work Immersion program.

Keywords: Level of satisfaction; Level of performance; Work immersion; Senior high.

1.0 Introduction

Since the implementation of Republic Act No. 10533 (RA 10533), known as the Enhanced Basic Education Act of 2013, the development of the full potential of the students has been one of the major thrusts of the senior high school curriculum. Offering a variety of subjects to prepare the learners for college education and the world of work, the curriculum champions a multitude of competencies that will enable them to achieve their maximum capacity and contribute profoundly for nation-building.

As reflected in the DepEd Order No. 30 S. of 2017, the K-12 Basic Education Program aims to help students acquire the skills, work ethics, and values necessary as they navigate the world of work. The incorporation of Work Immersion as one of the salient courses in the curriculum seeks to fulfill these opportunities. Based on the curriculum guide for Work Immersion, this subject provides learners with opportunities "to gain relevant and practical skills, appreciate the importance and application of the principles and theories taught in school, enhance their knowledge and skills, enrich their skills in communications and human relations, and develop good work habits, attitudes, appreciation and respect for work" (Department of Education, 2017).

Additionally, in this subject, immersionists are exposed to the actual workplace for them to become familiar with the workplace and apply their competencies in various areas of specialization in authentic work environments. This aspires to further enhance the quality of education and prepare the K-12 curriculum learners “for employment through exposure to the actual field” as they “handle the demands and difficulties of employment in their future careers”. Learners will be proficient in their areas of interest if this program is implemented. They will possess the necessary knowledge and abilities to support the Philippines' economic demands, especially in the area of human resources (Magno, 2018).

According to Lozada (2017), work immersion is a crucial component of giving students a space to grow through simulation and imparting knowledge and experiences that would aid in their professional development. Lozada (2017) further emphasized the value of experience as the finest teacher, suggesting that inspiration can be obtained when students become proficient in their chosen fields.

Work immersion gives students a chance to put their skills to the test and use what they have learned outside of the classroom. During work immersion, students can use what they have learned in the past and get a firsthand look at real-world interactions in the workplace. Their job immersion experiences will help them acquire a wide range of values and abilities.

However, Davis (2021) highlighted certain drawbacks of work immersion, pointing out that students undergoing this type of program often struggled to adjust to the demands of their jobs. They experienced cultural shock during the first week of the immersion as they got to know the adults and other new people. Furthermore, these difficulties may impact negatively on students' performance and attitudes throughout their work immersion.

According to Macalintal (2020), students enrolled in immersion programs typically encounter difficulties when interacting with their supervisors. They were confused about how to communicate with their superiors after becoming new teachers. The abrupt changes in their schedules are another reason they are finding it difficult to manage their time. Additionally, dealing with distant coworkers proved to be difficult for Immersion students. Regarding the work immersion partners, Figueras and Mendoza (2020) revealed that the primary concern they faced was immersion students' attendance. The immersion schedule is affected by the absences that some immersion students have a propensity to take.

Despite the studies conducted about the implementation of work immersion, there is a research gap that exists about the efficiency and effectiveness of this program in the Philippine setting. In Saint Louis School of Don Bosco, Inc., the students were immersed in an Off-Campus Work Immersion in various companies and industry partners within Dumaguete City. They rendered the required number of 80 hours. As an output, the students wrote journal entries and accomplished daily time records to be submitted to the work immersion advisers.

This research endeavor was pursued to determine and evaluate the level of satisfaction among Work Immersion students and provide profound insights and impressions of the work immersion program initiated by the school. Furthermore, this sought to gauge their performance as perceived by the supervisors of the different industry partners. The findings hoped to be the basis of a Work Immersion intervention plan. The realization of this study is crucial to the continued progress of the students and the challenges that they have encountered which functioned as the foundational framework for recommendations aimed at enhancing the implementation of work immersion. This would allow the administrators and curriculum developers to improve the teaching and learning guide in this particular subject.

2.0 Methodology

2.1 Research Design

This study employed descriptive survey as a research design to evaluate the level of satisfaction of Work Immersion students and gauge their immersion performance as perceived by company and industry partners.

2.2 Research Participants

The population of the study was 94 senior high students composed of ABM (Accountancy, Business and Management), STEM (Science, Technology, Engineering, and Mathematics), and HUMSS (Humanities and Social Sciences) who underwent their Work Immersion in ten (10) companies and industry partners.

2.3 Research Instrument

The study employed two sets of survey questionnaires. The first questionnaire was developed by Necio et al. (2022) in their study entitled “Challenges Encountered and Level of Satisfaction of Work Immersion Students and Partners: Basis for School Policy Work Immersion Plan” which consisted of fifteen (15) items measuring their level of satisfaction. On the other hand, the second questionnaire which measured the Work Immersion performance of the students was the evaluation sheet also consisted of fifteen (15) items.

2.4 Data Gathering Procedures

The researchers submitted a letter to the Principal for approval. The data were collected through the questionnaire method. After having permission and a schedule to conduct the study, the researcher proceeded by administering the questionnaires to the respondents. Before that, the intent and purpose of the study were explained. The researchers also provided a comprehensive explanation of the objectives and goals of the research.

2.5 Data Analysis

The study utilized a quantitative approach. The collected data were analyzed utilizing two statistical tools namely frequency and weighted mean.

2.6 Ethical Consideration

The researchers followed the ethical protocols and showed all the necessary ethical consideration during the entire duration of the study. To ensure that the research topic was evidently sound, significant and correct consultation was pursued. The researcher also displayed non-judgmental attitude during the conduct of the study. Ensuring the dignity and privacy of participants was also a must. Further, minimizing potential risk to the participants was always observed. Moreover, the participants signed consent forms along with the full understanding of the risks and benefits of the study being conducted.

3.0 Results and Discussion

Table 1. Profile of respondents in terms of strand

STRAND	FREQUENCY	PERCENT
ABM	13	13.83
STEM	72	76.60
HUMSS	9	9.57
Total	94	100

Table 1 presents the profile of respondents in terms of strand. Out of 94 respondents, there are 72 (76.60%) taking the STEM strand, 13 (13.83) of them are enrolled in the ABM strand and 9 (9.57%) are taking the HUMSS strand. Overall, the majority of the students are enrolled in the STEM strand. The findings corroborate those of Rafanan and De Guzman (2020), who found that nearly all of the students intended to work in STEM fields once they graduated from college or university. The primary reason for enrolling in STEM is that it aligns with their desired college path. Furthermore, Rogayan et al. (2021) asserted that there is an extremely high critical demand in today's society for scientific, technology, engineering, and mathematics (STEM) workers. This is the main justification given by many educational establishments for encouraging students to pursue the STEM strand to further develop the skills and competencies required by today's companies.

Table 2 presents the profile of respondents in terms of the company or industry partner they were part of. As illustrated in the table, 22 (23.40%) of the respondents were assigned to the Department of Agriculture's Provincial Agricultural Technology Coordinating Office. There were 20 (21.28%) students assigned to both the Provincial Engineer's Office and Holy Child Hospital, respectively. Eight (8.51%) worked in the Bureau of Animal Industry.

All of the immersionists were enrolled in the STEM strand and had decided to take courses in the fields of medical science, agricultural technology, and engineering.

Table 2. Profile of respondents in terms of their company or industry partners

COMPANY/INDUSTRY PARTNER	FREQUENCY	PERCENT
Bureau of Animal Industry (BAI)	8	8.51
Civil Service Commission (CSC)	3	3.19
Department of Agriculture, Provincial Agricultural Technology Coordinating Office	22	23.40
Department of Education Negros Oriental Division	4	4.26
Du Ek Sam, Inc.	3	3.19
Government Service Employment System (GSIS)	2	2.13
Holy Child Hospital (HCH)	20	21.28
Provincial Environment and Natural Resources Offices (PENRO)	7	7.44
Philippine Mental Health Association, Inc. (PMHA)	5	5.32
Provincial Engineer's Office	20	21.28
Total	94	100

Meanwhile, 7 students (7.44%) had their work immersion in the Provincial Environment and Natural Resources Offices (PENRO), 2 of them are STEM takers working in the office while 5 are in the ABM strand assigned to the accounting department. Three interns (3.19%) were assigned in Civil Service Commission and Du Ek Sam, Inc. while 2 (2.14%) worked in the Government Service Employment System. These three companies provided the ABM students with first-hand exposure and profound knowledge in the fields of accountancy, business, and management. On the other hand, 5 (5.32%) HUMSS students were exposed to the Philippine Mental Health Association, Inc., and 4 of them (4.26%) were in the Department of Education Negros Oriental Division. These students planned to take courses related to education, psychology, and social work.

The selection of different businesses and connection partners is essential to achieving the aims and goals of the Work Immersion program. The Department of Education is relying on solid cooperation (Ronda, 2018). Furthermore, as mentioned in Section 4 of the Deped Order, through forming partnerships, Deped hopes that the partner institutions will offer students workplace or hands-on experience, work immersion opportunities, and more learning materials that will enhance their technical knowledge and skills, polish their interpersonal and communication skills, help them develop positive work habits and attitudes, and help them comprehend the significance and real-world applications of the theories and concepts they have learned in the classroom.

On the other hand, giving students greater options for employers and partners would enable them to gain deeper insights into the kinds of jobs they might want to pursue. For a more fulfilling experience, Ador et al. (2023) propose that schools look for additional partner institutions that are in line with students' interests and intended vocations. Budomo (2020) suggests doing work immersion orientations or seminars at the companies, looking for more possible business partners, collaborating with state universities and colleges, and implementing simulation exercises inside the classroom.

The significant findings revealed the need for the institution to benchmark with more companies and industry partners especially in the medical field such as clinics, pharmacies, and hospitals to provide more options for the STEM students. The work immersion program must be refined to incorporate notable and effective strategies in strengthening partnerships with various organizations and institutions.

Table 3 presents the level of satisfaction of the respondents toward Work Immersion. As reflected in the table, the respondents are *"happy having experienced the work immersion"* with the highest mean of 3.67 and a verbal description of Very Satisfied which can be interpreted as Very High. Pestijo (2023) asserted in her study that the work immersion program has been effective in improving the student's understanding and proficiency in various aspects. Thus, there is a positive impact on the experiences of their learning and development. Moreover, the respondents are *"content with my working relationship with the supervisor and the people in my work immersion venue"* with a mean of 3.52 and a verbal description of Very Satisfied which can be interpreted as Very High.

Table 3. Level of satisfaction among senior high students toward work immersion

INDICATORS	MEAN	VERBAL DESCRIPTION
1. The work immersion venue helped me acquire skills/competencies.	3.23	Satisfied
2. There were no major distractions that interfered with my training.	3.15	Satisfied
3. I was well-engaged with what was going on during the Work Immersion.	3.30	Very Satisfied
4. I was given allowed to perform hands-on activities that related to my specialization.	3.09	Satisfied
5. The work immersion met my expectations.	3.05	Satisfied
6. The people and the supervisor in my work immersion venue provided and assisted me to gain the knowledge and skills that I need for my immersion.	3.49	Very Satisfied
7. I was content with my working relationship with the supervisor and the people in my work immersion venue.	3.52	Very Satisfied
8. I was able to exercise my skills during work immersion.	2.99	Satisfied
9. I was able to improve my basic level of ability for advancement.	3.13	Satisfied
10. I was satisfied with the nature of the work in the immersion.	3.31	Very Satisfied
11. I was satisfied with the experience gained in the work immersion.	3.34	Very Satisfied
12. I was content with the knowledge and skills gained from work immersion.	3.27	Satisfied
13. I am confident enough to face the real world because of my experience in work immersion.	2.83	Satisfied
14. I am happy to have experienced the work immersion.	3.67	Very Satisfied
15. I will recommend the work immersion venue to other learners who will soon be taking work immersion.	3.40	Very Satisfied
Composite	3.25	Very Satisfied

The results corroborate Peach's (2014) claims that shared goals and desired outcomes can only be established and pleasure can only arise from a positive interaction between supervisors and immersion students. Work supervisors who dedicate time to offering support and constructive criticism identify specific areas of learning that require further development of skills.

Additionally, according to the respondents, *“the people and the supervisor in their work immersion venue provided and assisted them in gaining knowledge and skills that they needed for their immersion”* with a mean of 3.49 and a verbal description of Very Satisfied which can be interpreted as Very High. Based on the immersion guidelines set by DepEd, *“the institution partner should lead its expertise by making available its resident resource person to provide training to the immersion students. Similarly, they should ensure that proper training must be provided to the students according to their needs. Students’ safety in the workplace was also reiterated to be given importance”* (DepEd Order 30, s.2017).

The lowest indicator among the items with a mean of 2.83 and a verbal description of Satisfied which can be interpreted as High states that they *“are confident enough to face the real world because of their experience in work immersion”*. Cruz and Permejo (2020) in their study affirmed that students have a high sense of their own work potential, which gives them confidence to carry out plans of action for handling projects. Similarly, students demonstrated competency in the work assignment and gained the most knowledge in the areas of interpersonal interaction and communication.

In general, their level of satisfaction is very high with a composite mean of 3.25. The results showed favorable implications for the school's work immersion program. Positive effects on the school's work immersion program were indicated by the results. This is consistent with the results of Necio et al. (2022), who found that students enrolled in work immersion reported a Very Satisfied degree of satisfaction. Students' personal development was aided by the knowledge they acquired through work immersion (Ador et al., 2023).

Garcia (2020) also noted that the program's alignment with the track, waiting time, wage, employment status, degree of skill utilization, and work preparedness are all highly beneficial aspects of the Work Immersion experience. Additionally, pupils who possess higher levels of technical proficiency, work applicability, and personal skills are generally more employable. It is proposed that educational establishments should be encouraged to consistently seek out sectors that complement and improve students' abilities, enabling them to engage in constructive experiences and be ready for careers in the future.

The findings showed that these positive and profound experiences of the students toward Work Immersion could be employed as framework for the continuous development of the curriculum. With the results, the program should necessitate the enhancement of the students' confidence by actively engaging them in pre-activities of the Work Immersion.

Table 4. Level of work immersion performance as perceived by their supervisors

INDICATORS	MEAN	VERBAL DESCRIPTION
1. He/she comes to the assigned office on time.	3.81	Highly Evident
2. He/she finishes the tasks given to him/her with enthusiasm.	3.67	Highly Evident
3. He/she shows courtesy in dealing with his/her superior and other people.	3.78	Highly Evident
4. He/she speaks with modesty and tact.	3.77	Highly Evident
5. He/she is knowledgeable of the tasks given.	3.52	Highly Evident
6. He/she has impressive time management skills.	3.54	Highly Evident
7. He/she is patient and persistent.	3.56	Highly Evident
8. He/she is well-groomed and well-presented.	3.83	Highly Evident
9. He/she has initiative and resourcefulness.	3.69	Highly Evident
10. He/she is particular or attentive to details.	3.62	Highly Evident
11. He/she exhibits appropriate conduct and manners.	3.78	Highly Evident
12. He/she is trustworthy and reliable.	3.82	Highly Evident
13. He/she asks questions and is eager to learn.	3.59	Highly Evident
14. He/she has a sense of responsibility.	3.70	Highly Evident
15. He/she exhibits an impressive work ethic.	3.77	Highly Evident
Composite	3.70	Highly Evident

Table 4 presents the level of performance of the respondents as perceived by the industry partners. The supervisors described them as *well-groomed and well-presented* with a mean of 3.83 and a verbal description of Highly Evident which can be interpreted as Very High. Moreover, the supervisors considered them as *trustworthy and reliable* with a mean of 3.82 and a verbal description of Highly Evident which can be interpreted as Very High. According to Tung (2017), work immersion programs seek out characteristics in students that adhere to work ethics, teamwork, and initiative. According to Smith et al. (2020), work immersion programs offer students significant chances to acquire information, skills, and career-related competencies. Additionally, the supervisors observed that *they came to the assigned office on time* with a mean of 3.81 and a verbal description of Highly Evident which can be interpreted as Very High. Smith et al. (2020) reveal that the Work Immersion programs highlight the value of teamwork, reflective practices, and on-time submissions.

This is in contrast to the findings of the study conducted by Figueras and Mendoza (2020), which showed that the work immersion partners' top worry was the attendance of immersion students, particularly their tardiness. Overall, the level of performance of Work Immersion as perceived by the supervisors of the company linkages and partners is 3.70 which translates to Highly Evident and interpreted as Very High. This also mirrors the findings of Necio et al. (2022) where the level of satisfaction of company partners was described as Very Satisfied. These results manifested positive impact and implications for the school's work immersion program.

According to a study by Pestijo (2023), this favorable opinion can point to a readiness and excitement for participating in the program, which might improve their entire experience and results. Furthermore, according to Cruz and Permejo (2020), students gained the abilities and competencies needed to behave professionally in a real-world workplace, as judged by industry partners, and they became holistically prepared. Along with attitudes and values toward work, the learners have acquired lifelong skills and competencies that are the best tools for pursuing a better life.

4.0 Conclusion

Based on the analyses and the findings of the study, the following conclusions were drawn:

- a. The majority of the students were enrolled in the STEM strand implying that almost all the students wanted to pursue STEM-related careers after they graduate from a university or college. This also asserts that there is a high demand for courses related to medical and engineering courses.
- b. The number of Work Immersion interns is spread across the ten (10) companies and linkage partners depending on their respective strands. These companies provided students with first-hand exposure, profound knowledge, and work-related skills and competencies in the fields of accountancy, business and management, engineering, medicine, and social science. However, the results indicated that in order to give STEM students additional possibilities, the school needs to benchmark with more businesses and industry partners, particularly in the medical sector, such as clinics, pharmacies, and hospitals.
- c. The study showed that the level of satisfaction of the students toward Work Immersion was very high. They expressed that they "were happy having experienced the work immersion", that they "were content with my working relationship with the supervisor and the people in my work immersion", and that "the people and the supervisor in their work immersion venue provided and assisted them in gaining knowledge and skills that they needed for their immersion". The results implied that the students' profound and positive experiences with work immersion might serve as a basis for the curriculum's continuous development.
- d. The study showed that the level of performance of Work Immersion was very high as perceived by the supervisors of the company linkages and partners. Their level of performance was highly evident on the following indicators: they are well-groomed and well-presented; they are trustworthy and reliable; and they come to the assigned office on time.
- e. School administrators can look for more relevant partner institutions anchored on the student's interests, skills, competencies, and future careers for them to be provided with more meaningful and profound experiences. Additionally, the work immersion program has to be improved to include noteworthy and practical tactics for fortifying relationships with different institutions and companies.
- f. School administrators can utilize the results as baseline data for the improvement of the Work Immersion program and as a basis for the intervention and development plan.
- g. The findings demonstrated that the Work Immersion program should require raising the students' self-esteem by active participation in the Work Immersion's preparatory activities.

5.0 Contributions of Authors

The authors confirm their equal contribution to every part of this research. All authors reviewed and approved the final version of this paper.

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7.0 Conflict Of Interests

The authors declare no conflicts of interest.

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9.0 References

- Ador, Z. I., Banaag, H. A. C., Bombio, C. A. M., Consignado, D. N. A., Quinay, M. A. V., & Santos, J. L. C. (2023). Exploring the Work Immersion Experiences of Grade 12 STEM Students in a Local Science Integrated High School: A Narrative Research. *East Asian Journal of Multidisciplinary Research*, 2(7), 3053-3078.
- Budomo, X. M. (2020). Readiness and Willingness of the Enterprises in Accepting Work Immersion Activities of Senior High School Students. *Online Submission*, 9, 42-67.
- Cruz, J. N. D., & Permejo, M. M. (2020). Workplace Skills and Competencies: An Industry Partner Appraisal on Work Immersion Program among Senior High School Learners. *Journal of Business and Management Studies*, 2(3), 41-48.
- Davis H.(2021). Immersion Programs: What Do Teachers Say? *The Davis Journal*, <https://www.davisjournal.com/2021/08/02/364496/immersion-programs-what-do-teachers-say->.
- Department of Education. (2017). Department of Education (DepEd) Order no. 30, series of. Guidelines for work immersion of Senior High School, 2017.
- Department of Education. (2017, June 5). Department of Education Order No. 30 s. 2017 guidelines for Work Immersion. GOV.PH. https://www.deped.gov.ph/wpcontent/uploads/2017/06/DO_s2017_030.pdf
- Department of Education. (2022). DepEd Pushes Physical Work Immersion for SHS in Progressive Expansion of Face-to-Face Classes. GOV.PH.<https://www.deped.gov.ph/2022/04/27/deped-pushes-physical-workimmersion-for-shs-in-progressive-expansion-of-face-to-face-classes/>
- Figueras, A. J., & Mendoza, F. E. (2020). Implementation and Compliance of Work Immersion Program of Public Secondary Schools in Sorsogon City. *International Journal of Novel Research in Education and Learning*, 7(3), 55-61.
- Garcia, A. (2020). Work Immersion Performance, Alignment, and Employability among Senior High School Graduates. *International Journal of Advanced Research (IJAR)*. Calamba Laguna.
- Lozada, M. (2017). Work Immersion in Senior High School. *Panay News*. Retrieved from July 18, 2018), 2017. From <https://www.pressreader.com/philippines/panaynews/20171116/281547996182512>.
- Macalintal, I. (2020). Assessing the Senior High School Work Immersion with Partner Industries: Basis for Supervisory Work Plan. *JPAIR Multidisciplinary Journal*.
- Magno N.L. (2019). Work Immersion of Senior High School Students, 2018. Retrieved from <https://www.scribd.com/document/Work-immersion>.
- Necio, C. R., Acosta, N. P., Arzaga, M. L. S., & Buhalog, C. J. E. (2022). Challenges Encountered and Level of Satisfaction of Work Immersion Students and Partners: Basis for School Policy Work Immersion Plan.
- Peach. (2014). Feedback on Student Performance in the Workplace: The Role of Workplace Supervisors. *Queensland University of Technology*, Brisbane, Australia. https://www.ijwil.org/files/APJCE_15_3_241_252.pdf
- Pestijo, J.J.(2023). Phases of Work Immersion and Students Performance: Basis for a Localized Internship Program.
- Rafanan, R. J., & De Guzman, C. Y. (2020). Pursuing Stem Careers: Perspectives of Senior High School Students. *Participatory Educational Research*, 7(3), 38-58.
- Rogayan Jr, D. V., Rafanan, R. J. L., & De Guzman, C. Y. (2021). Challenges in STEM Learning: A Case of Filipino High School Students. *Jurnal Penelitian dan Pembelajaran IPA*, 7(2), 232-244.
- Ronda R. (2018). DepEd banks on Partnership for SHS work immersion.
- Smith, J., Johnson, A., & Brown L. (2018). Assessing Student Perceptions of Work Immersion Program: A Case Study. *Journal of Education and Work*, 31(3), 305-321
- Tung Y. (2017). Chapter 21: Hospitality Practitioner Satisfaction Factors to Interns and an Internship Program in Taiwan. *Department of Leisure Industry and Health Promotion, National Ilan University*. <https://uq.pressbooks.pub/hospitalityeducation/chapter/chapter-21-hospitality-practitioner-satisfaction-factorsto-interns-and-an-internship-program-in-taiwan/>

Uncovering Teachers' Challenges in Teaching Qualitative Research: Basis for Innovation and Training

Joseph L. Torres

Sto Niño High School, Tanjay City, Negros Oriental, Philippines

Author email: joseph.torres@deped.gov.ph

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Abstract. The purpose of this study is to uncover the challenges of teachers teaching qualitative research in North District, Tanjay City Division, for the school year 2023-2024. This study employed a phenomenological design to characterize and comprehend teachers' circumstances. The researcher used a qualified teacher to facilitate focus group discussion with the six participants following an interview guide to gather data and for reflexivity purposes. The FGD was conducted four times for data saturation purposes at one of the restaurants in Tanjay City since it was the participants' choice and convenience. Moreover, purposive sampling was utilized by the researcher based on the selection criteria. Additionally, a consented audio recording proved to be helpful in accurately transcribing the participants' comments, which were subsequently subjected to thematic analysis. To do this, the researcher had to become familiar with the transcripts, create codes, group codes into themes, examine and clarify themes, and present results. The study revealed five themes: missed opportunities, diversity amidst challenges, management constraints, students' attitudes towards research and resilience, and resourcefulness amidst challenges. This revealed that teachers' lack of knowledge, training, irrelevant skills in the subject, students' low comprehension skills, and lack of interest are the underlying challenges that teachers face in teaching qualitative research. However, despite these challenges, teachers demonstrated resilience and resourcefulness by finding ways to gain knowledge and practice that could help them deliver the subject. Consulting experienced teachers, sourcing out other references, localizing materials, and translating English to Cebuano, their mother tongue teachers helped them sustain the goal of their profession to teach. Thus, the results of this study will form the basis for innovation, training, and workshops for research teachers. This study recommends that Tanjay City Division strengthen any enhancement program that aims to capacitate the teachers in research. Moreover, future researchers can do instrumentation on thematic analysis to gauge the knowledge and skills of research teachers in analyzing qualitative data which will be the basis for innovation and future enhancement programs in research.

Keywords: Teaching research; Qualitative; Phenomenology.

1.0 Introduction

Research is an integral part of our daily lives. This allows people to find solutions and answers to mysteries in the world. Unlocking these will pave the way for discoveries that will aid humans in improving their lives. From time to time, its significance has been acknowledged in different disciplines, such as engineering, medicine, social sciences, physical science, life science, economics, culture and language, agriculture, and the core of education.

In the field of education, the Department of Education (DepEd) is consistent with global trends and opportunities for embracing research. Why? Research is essential to curriculum creation because it offers empirically supported insights into successful teaching strategies and supports educators' and policymakers' decision-making regarding curriculum material (Courtney, 2023). In addition, as part of the Implementation of K-12, the Republic Act 10533,

otherwise known as The Enhanced Basic Education Act of 2013. As stipulated in Section 5, Curriculum Development, DepEd shall adhere to the following standards and principles in developing an enhanced basic education curriculum. Furthermore, it states that the curriculum should be relevant, responsive, and research-based (Studocu, n.d.). In this regard, research is strongly integrated into the k-12 curriculum and teachers play a vital role in implementing this goal. The strong model of teacher professionalism places great emphasis on the accountability and autonomy of the individual teacher, allowing them to make their decisions on both theoretical and practical grounds, such as research conducted in the classroom (EdTech Books, 2023). A relevant study titled, *Research-based teaching-learning Method: A Strategy to Motivate and Engage Students in Human Physiology Classes* (2019), concluded that by using a research-based approach, the learning process became more meaningful for the students as they were able to connect the theoretical knowledge they were gaining in class to real-world applications through active learning. The students also have the chance to learn leadership skills and become proficient researchers and organizers when working in groups (Granjeiro, 2019). This study proves that research-based instruction can contribute significantly to analytical and leadership skills among learners. However, teaching research may pose significant challenges to teachers in some ways. This is evident in a study titled *Challenges and Difficulties Encountered by Teachers in the Conduct of Educational Research: Basis for Teachers' Enhancement Program* (2021). The study revealed that the majority of respondents experienced difficulties carrying out research, including a lack of time, anxiety related to writing and carrying out the study, and the perception that performing research adds to an already heavy workload (Bullo, et al., 2021). Moreover, this is substantiated by another study titled *Teachers' Conception and Difficulties in Doing Action Research* (2019). The study emphasized that doing research means an additional burden for teachers, causing anxiety, inadequate time for preparation and implementation, and insufficient knowledge in conducting action research (Tindowen et al., 2019).

Research is a discipline that includes many topics and approaches. It entails a methodical study of a subject or situation to learn new facts, resolve issues, or expand understanding. It can be in a qualitative or quantitative state, or both can be applied in the domain of inquiry. Thus, it is inevitable that teachers encounter challenges in teaching research, as mentioned above, especially in terms of knowledge and experience. This idea is supported by Hussien et al. (2019). It was revealed that teachers lack mentoring and acquire poor knowledge in analyzing qualitative and quantitative data, which recommended that teachers be aided through training and relevant workshops in research. This is also manifested in another relevant study by Tingabngab and Binayao (2023). The results demonstrated that the teacher participants encountered the following when carrying out their action research: difficulties in the first phase, a sense of rejection, the intricacy of demands, limitations about priorities, challenges in identifying pertinent theories, insufficient background knowledge on theories, insufficient skills in the formulation of objectives, a lack of methods and techniques, failure to complete the pre-notification process, and insufficient skills in data analysis.

In this regard, the problems and issues discussed in the literature influence the researcher to investigate the phenomenon of teachers' challenges in teaching Practical Research 1 or Qualitative Research in the Tanjay City division school year 2023-2024. Significant updates on research implementation and output were brought up during research-teacher conferences. It was frustrating that out of 13 senior high schools in the North District, only one school produced an output. This prompted the researcher to investigate the situation using a phenomenological approach. Specifically, it aimed to address the following questions:

- a. What are the challenges of teachers teaching qualitative research in North District, Tanjay City, during the school year 2023-2024?
- b. What are the meanings of these challenges?
- c. How do research teachers cope with these challenges?
- d. What recommendations can be made based on the results of the present study?

2.0 Methodology

2.1 Research Design

The study utilized a phenomenological approach. It is a field of study called phenomenology that aims to explain the nature of things using people's experiences with them. "study of phenomena," which means that the researcher is examining the significance that these objects or phenomena have on the participants in the research. (Dovetail

Editorial Team, 2023). Thus, the researcher utilized this design to investigate the challenges experienced by teachers teaching qualitative research in the academic year 2023-2024. Thematic analysis was used to generate significant themes in this study.

2.2 Research Locale

The study was conducted at the Tanjay City Division and targeted the North District with 13 senior high schools with 13 Practical Research 1 teachers. However, the conduct of the interviews was not initiated in schools to avoid disruption of classes; instead, it was made possible at the researcher's residence where six participants were invited.

2.3 Research Participants

The study participants were six practical research 1 teachers in the North District of Tanjay City Division in the academic year 2023-2024. They were chosen based on purposive sampling, with the criteria set by the researcher. These were as follows: a) teaching practical research 1, and b) teaching within the North District of the Tanjay City Division. Moreover, participant selection was made possible through data saturation. By eliminating redundant data gathering, researchers can maximize the use of their time and resources while simultaneously ensuring the validity of their investigations (Rahimi and Khatooni, 2024). This procedure helped the researcher filter redundant codes and themes during the data transcription process. In this connection, the researcher trained a teacher to conduct a focus group discussion with 13 teachers and found that seven teachers had identical and redundant experiences of the phenomenon. Thus, six participants were found to have saturated the data.

2.4 Research Instrument

The researcher utilized a self-made interview guide to guide the moderator during the focused group discussions. The strategy was even more productive with the researcher's use of interview guide questions, which helped the moderator follow the structured questions and be flexible enough to probe depending on the responses of the participants. It gave the participants the freedom to elaborate on their responses and shed light on the color of their experiences. Furthermore, the focus group discussion was facilitated by a trained teacher to observe confirmability. This raises the credibility of this study. The confirmability criterion quantifies the extent to which the research study's conclusions rely on participant accounts and statements, as opposed to probable researcher bias (Moran, 2021). In addition, to make the study more credible, member verification was performed to ensure that the researcher's interpretations accurately reflected participants' intended meaning.

2.5 Data Gathering Procedure

In this study, gathering underwent a tripartite procedure, namely, before data gathering, data gathering, and post-data gathering. In the pre-gathering of data, the researcher established the criteria for the participants to be qualified. Part of this procedure was also the training of the teacher, who would engage in focused group discussions to avoid the researcher's personal bias. Subsequently, a letter of permission was submitted to the Division of Tanjay City. When the letter was approved, the participants were oriented on the nature and purpose of the study and the number of focused group discussions that would be administrated as part of the rigorous procedures in the study. Moreover, during data collection, the researcher started the first session of FGD with a trained teacher using an interview guide. The session was conducted at one of the restaurants in Tanjay City, as preferred by the participants. During the session, the researcher asked the participants for permission to record data. As approved by the participants, the researcher transcribed the verbatim responses. Upon the initial transcription, the researcher returned to the participants to check their accuracy and resonance with their experiences. This was done to validate whether the responses were as exact as the participants' intended meanings. The FGD continued every Saturday because of participant availability. The procedures in the first session were repeated systematically until reached data saturation which happened in the 4th session at the same place. This provided the researcher the opportunity to establish the credibility and reliability of the data. After the data were collected, the researcher began to familiarize with the transcripts and identify significant statements that were the basis for generating codes and themes. Importantly, the researcher ensured that the data gathered would only be used for research, innovation, and training purposes.

2.6 Ethical Considerations

The researcher observed ethical practices during the implementation of this research. First, informed consent was obtained from the participants and explained by the researcher. The consent contained the nature and purpose of the study, emphasizing that their participation was voluntary and not forced to participate and that they could withdraw from the study. Second, the researcher explained to the participants that their identity was treated as private and that their anonymity was highly considered. An Anent code was used to represent the participants' identities. Finally, it was emphasized that only the researcher could access the participants' master list.

3.0 Results and Discussion

This section summarizes the main findings of this study. The challenges of teachers teaching qualitative research in the North District of Tanjay City Division were highlighted through the creation of codes and themes using thematic analysis. Through thematic analysis, the researcher was able to obtain a thorough grasp of the distinct experiences and difficulties faced by each of these teachers in their teaching profession.

Table 1. Thematic map of teachers' challenges in teaching qualitative research

Codes	Themes
No relevant experience	Missed opportunities
Absence of training	
Not engaged in advanced studies	
Not inclined to qualitative research	Diversity amidst difficulty
More inclined toward quantitative research	
Good in performing arts	Management constraint
Lack of time to do research	
Additional burden	
Disengaged and uninterested learners	Students' attitude towards research
Low comprehension	
Unmotivated to study scholarly papers	Resilience and resourcefulness amidst challenges
Translating English to Cebuano and vice versa	
Going back to basics	
Simplification of word choice in the activities	
Localized examples/activities	
Looking for easier references	
Employment of motivational strategies	
Consultation of relevant experienced teacher	

3.1 Theme 1: Missed Opportunities

Teachers are extremely important for shaping the brains of future generations. Unfortunately, a lack of training, a lack of relevant experience, and a lack of interest cause many teachers to miss out on important chances for professional development.. Inadequate training may make it difficult for teachers to explain difficult ideas to students. Students may lose out on opportunities to properly understand crucial material and hone their critical thinking abilities as a result of this. Moreover, without relevant experience in their subject matter, teachers may struggle to provide engaging, informative lessons. This can lead to missed opportunities for students to explore new ideas and to expand their knowledge. Finally, not engaging in postgraduate studies also appears to be a factor in why they cannot teach the lesson well. Inadequate training, lack of relevant experience, and lack of engagement in postgraduate studies were emphasized by participants' statements.

Participant 1 said, *"It was difficult for me to teach qualitative research because I do not have experience doing it. I dont even the idea of how to analyze qualitative data and the designs appropriate for such a study. Also, I find it a reason to have limited knowledge in research since I do not engage in post-studies like master's programs. According to the people I know, they are prone to conducting research because of their academic advancement. Lastly, we lack training relevant to qualitative research."*

Moreover, participant 3 added, *"Me too sir. I did not enroll in a master's program since I cannot afford it for now. I used to read, but it is quite different if there is someone who teaches me or trains me. Sadly, there was no training relevant to qualitative research in our division office. Thus, it is hard for me to teach research since I don't have relevant experience."*

Participant 2 said, *"Me too sir. I do not have experience doing research, which is why I found it difficult to teach the subject. Also, as a research teacher for three years, there were to 2-3 trainings/workshops intended for us research teachers and they were just too generic"*.

Participant 5 added, *"Same on my part sir. At first, I refused to teach the subject since I did not have relevant experience in qualitative research. Although I experienced doing quantitative research, it was just basic and simple."* Moreover, there was one training/workshop for research this school year, but I found it confusing since qualitative and quantitative topics were fused in just 2 days."

Participant 6 answered, *"I'm not confident to teach qualitative research sir since I don't have experience in the first place. Additionally, there were no evident pieces of training for research in our division, and no update or technical assistance was received from our division."*

Lastly, participant 4 said, *"It is hard to teach a subject when you do not have any knowledge or experience in it. None of my co-teachers wanted to teach the subject because they also found it difficult. It could have been better, at least, if we undergo workshops or trainings however, I only witnessed one training in a school year initiated by our division office."*

This theme highlights teachers' difficulties in teaching qualitative research. As expressed by the participants, it prevents them from being effective teachers in the subject, and it is frustrating because these factors may adversely hinder their teaching profession. This means that teachers require training and experience before teaching the subject. This is substantiated by the fact that the educators meet the criteria for them to be expected to be able to incorporate the skills of TPACK into the learning (Antony et al., 2019). Moreover, the significance of training for teachers is one of the key components of the successful delivery of a subject. This can lead to ramifications encompassing the promotion of self-control, incentives, and after-training assistance, thereby aiding in the ongoing enhancement and utilization of learned competencies (Ergashevich & Mado, 2024). Finally, the importance of enrolling in graduate studies plays a crucial role in both teachers' development and students' learning. A master's degree gives educators a deep technical grasp of the subject matter they choose to teach. Furthermore, this degree can enhance a teacher's ability to instruct, which will increase average test scores and graduation rates (Llego, 2020).

3.2 Theme 2: Diversity Amidst Difficulty

Future generations' minds are greatly influenced by teachers who work with them. A major contributing factor to their capacity to instruct and motivate students is their inherent intelligence. Every educator possesses a distinct set of abilities, expertise, and life experiences that they offer in the classroom. Teachers are inclined toward a variety of stages based on their skills and talent. In this manner, the teacher's effectiveness in teaching the subject can be associated with his strength and field of interest. This was true for the participants' significant statements.

Participant 2 said, *"I am not good at qualitative research sir. I could say that I can do well in quantitative research since I love numbers and I can only use formulas to treat the data compared to qualitative where I am not inclined to words and language."*

Participant 4 answered, *"I like more quantitative research than qualitative. I am good at other things, and it so happened that I am not inclined to do research, especially qualitative. If you would ask me to dance or sing, I can assure you that there is something I can show. But, this does not mean that I don't give my best. although teaching qualitative research is challenging on my part, I always make a point to do my best for my learners."*

Participant 3 answered, *"I'm not inclined in research sir but I'm good in performing arts. It is not for me since I don't have the skills to teach research."*

Moreover, participant 1 added, *"Me too sir. I did not have any choices. I have to teach the subject even though my specialization is mathematics. I can't expound on the subject since language is my weakness and qualitative is all about words and interpretation and I can say that it's my weakness."*

Participant 6 added, *"It's difficult for me to teach the subject sir because, in the first place, I am not into language and I don't have skills teaching the subject. But if I were given to teach livelihood and entrepreneurship, I know I can deliver it well because it is where I am good at."*

Participant 3 concluded, *"It's different when you teach your specialization. For my part, I am inclined more to teach about business because I want to have my own business. Thus, it's really hard for me to teach qualitative research because I am not inclined to words and language sir."*

The theme of Diversity Amidst Difficulty was strongly emphasized by the participants. In this case, it is evident that they were not inclined to conduct qualitative research. This means that they have varied talents and skills that may not be suitable for research, especially qualitative ones. Their intellect and interest significantly influence teachers' efficacy as educators in their confidence in their capacity to successfully manage the responsibilities, challenges, and tasks associated with their professional activity, which is a critical factor in determining significant academic outcomes such as students' motivation, achievement, and well-being in the workplace (Barni et al., 2019). Moreover, teachers' diversity in their respective skills is relevant to the multiple intelligences where people have the skills that they can use to express their abilities (May-Varas et al., 2023).

3.3 Theme 3: Management Constraint

Teachers frequently face management challenges owing to time constraints and increased teaching responsibilities. Insufficient time to arrange classes, mark homework, and provide each student with personalized attention can leave educators feeling overburdened and incapable of handling their tasks well. These limitations may make it difficult for teachers to satisfy the requirements of every student, which could lower academic achievement and overall student satisfaction. These problems are expressed as follows.

Participant 6 said, *"I don't have enough time to produce students' research output since I have many other tasks to do as a teacher. Teaching qualitative research requires a thorough discussion of students' learning. In the case of my students, the lesson largely depended on the learners' comprehension. Moreover, I can say that it is a burden since I must make extra efforts to teach the subject."*

In addition, participant 5 said, *"It is a burden for me since I don't have experience in qualitative research in the first place. In this regard, I need to read more, although I did not understand the terms in the qualitative research. It's pressuring sir. Also, we haven't produced an output in Practical Research 1 due to time constraints since students have other tasks in their respective subjects."*

Participant 1 said, *"I found it hard to produce an output in qualitative research sir due to some reasons. These include my research skills still need big improvement. Also, students' lack of knowledge is evident."*

Participant 3 answered, *"Same situation on my part sir. We were not able to produce an output since I also have other academic and non-academic tasks in school. Not only me but also my students. They were working on other tasks which made them complain. I can see that they have less interest in the subject."*

Additionally, participant 4 said, *"It's really hard to manage our time in producing an output in qualitative research sir since the foundation of our students in research is not that strong. Also, their low comprehension level adversely affects the completion of the task. Thus, on my part, I found it challenging since it is not my specialization."*

Lastly, participant 2 emphasized, *"It's challenging to produce an output in qualitative research sir since I have limited time to accomplish it with my students due to other tasks. In my students' end, they found it difficult to research since resources were not evident in their context. Moreover, on my end, I still need to equip myself with the knowledge and skills before teaching the subject."*

Based on these responses, having extra load and time constraints hinder practical research teachers in producing output in qualitative research. Participants strongly expressed their frustration with their failure to manage the subject due to these issues. As expressed by their statements, they don't have enough time to implement and deliver qualitative research since teachers and students have other tasks in their respective roles in education. Consequently, this adversely affects students, especially the teachers in this study. Assigning an excessive number

of tasks and responsibilities to a single instructor who can no longer be obeyed, which typically leads to a reduction in time which, instead, the former could instruct her students with (Tarraya, H. O. 2023). Moreover, according to Kanwal et al.(2023), Overwork can cause stress, burnout, and low interest, all of which have a detrimental effect on the learning results of students. Proficiency in workload management enables educators to better support and mentor their learners, which in turn improves academic performance. Thus, extra tasks given to teachers contribute largely to the teachers' challenges in managing the class in qualitative research.

3.4 Theme 4: Students' Attitude Toward Research

Although research is an essential part of academic life, students' perspectives on it might differ widely. While some students consider research as a time-consuming and unpleasant activity, others see it as a chance to advance their knowledge and make a valuable contribution to the academic community. In this study, one of the challenges of teachers teaching qualitative research is the fact that students do not have research interests, and that poses a factor to consider why teachers may find it hard to teach the subject. This idea is supported by the participants' observations.

Participant 4 said, *"One of the challenges I encountered in teaching the subject sir is that my students don't have research interest. That is why before we started our class, I utilized gamification elements to stimulate their energy. They find it boring and since they were not used to reading even the articles and research papers I provided them". I could say that they don't have any experience during their lower years in the study. As a teacher, I even*

Furthermore, participant 3 added, *"The same in my students' case sir. They find this subject boring. This is why I make a point to start the lesson with the use of gamification so their attention will be stimulated and ready for the lesson. However, this is not for long. After a few minutes, their attention suddenly fades. Moreover, I also observed why they are not motivated to read despite my provisions of examples to them because they don't understand English."*

Participant 1 answered, *"I can see that my students found the subject research hard since they didn't have an interest in the first place. I admit that I'm not that competent in teaching the subject which is why it's difficult for me and my students to progress."*

Additionally, participant 5 emphasized, *"Teaching research is indeed a hard subject. I can even say that I am not yet competent in the subject but despite this, I tried my best for my students. However, no matter what I do, I observed that they lack interest in reading articles since they cannot understand scholarly papers. Moreover, most of the time, I just prepared energizers because if it's time for research they got bored and others got absent."*

Participant 6 said, *"I can say that they do not have an interest in the subject. This is even more challenging on my part. They do not even read the handouts I prepared for them. Then, even before giving them activities, they always quote," Let's do something else, ma'am. Let's just dance. They just don't want to read because they feel tired every time they do."*

Participant 2 highlighted, *"Same to my students sir. They felt tired compared to other subjects where they exhibited excitement and vigor. Although some tried to participate, most of them were not interested."*

The theme of students' attitudes toward research is strongly emphasized by the participants' observations of their students. Participants highlighted that the reasons why students lack motivation in qualitative research are because they don't understand English as the medium of language used in articles and research papers and lack of interest. According to the study of Nanda and Azmy (2020), this problem has three main negative effects on students: it lowers their learning accomplishment; impairs their ability to solve problems; and hinders their ability to pursue further education and employment. In addition, the general attitude that students have toward learning and school can also be impacted by a lack of interest which is emphasized by the participants. It may cause a person to get disengaged from the educational process, which will ultimately lead to less success. When students start to lose interest in what they are studying, it can be determined that they are not as motivated to engage in a variety of learning activities in class and at home (Lubis & Hasibuan, 2022). In this high regard, teachers need to make extra effort to motivate students which is evident in the teachers' responses. Despite this challenge, teachers enunciated that they employed gamification activities to stimulate the students' condition toward research. Gamification helps learners become more motivated, which improves their academic achievement. It is

anticipated that the use of games in education will continue to develop and result in revolutionary adjustments to learning models, curricula, and teaching strategies (Huseinović, 2023).

3.5 Theme 5: Resilience And Resourcefulness Amidst Challenges

People who possess resilience and resourcefulness are better equipped to deal with the difficulties that come with life. These characteristics frequently define one's capacity to overcome challenges and come out stronger on the other side when faced with adversity. Resilient people resist giving in to hopelessness or despair when confronted with trying circumstances. Instead, individuals rely on their inner strength and willpower to get through difficult situations. Even when it seems like the cards are stacked against them, they never waver in their resolve and never give up. In this study, the teacher participants demonstrated their resilience and resourcefulness in teaching qualitative research as expressed in the following statements.

Participant 1 said, *"In my end, even though I don't have relevant experience in this field, I continued to teach the subject. I just considered it as an opportunity for me to learn. I just find ways to learn such as by asking the people I know who have an experience in qualitative research. They were my colleagues and professors before. Also, I keep researching for sample research papers that will serve as my reference whenever I teach the subject. To my students' end, since they found it difficult to understand the content of the paper, I made a point to translate English words to their mother tongue, Cebuano, and choose simple words for their benefit. Although they cannot relate sometimes, it prompted me to localize the examples so that they would be relevant to their context. Although they were manifestations of a lack of interest, I immediately engaged them with dancing exercises with relevance to qualitative research for them to be stimulated and ready for the discussion. Thus, I could say that research is not an easy subject, especially for me who doesn't have any experience in it but I am just doing my best for my students because I feel mercy to them if they don't learn at all. I know it's difficult on my part but I have to be resilient to endure this challenge in my profession."*

Moreover, participant 2 added, *"I would admit sir that I only teach about theories and concepts about qualitative because I cannot teach what I don't have. I haven't experienced it myself. Despite that difficulty, I just ask other teachers who have relevant experience in it. Also, I went to other universities to look for qualitative research. I also search online for one of my references in the subject. In terms of my students' ability and interest, I made a point to translate English to their mother tongue, Cebuano for them to understand the content of the paper since these papers used standardized morphological structures. Whenever I gave them examples, I just localized them for them to connect. Although sometimes they felt bored and uninterested in the subject, I immediately engaged them with games so they would be stimulated in the class. It's not easy on my part but I must do it. After all, I am a teacher."*

Participant 5 added, *"It's not easy to teach a subject in which you found yourself incompetent. There were times when I felt pressured, and it led me to ask other teachers handling the subject how they teach the subject. Also, I tried to look for easier examples for my students to understand."*

Participant 3 answered, *"In my end sir, I made a point to ask my previous teachers in college. They helped me by explaining the terms and other procedures in qualitative research. However, there are still concepts and ideas that I find difficult to teach since my students cannot relate. For this reason, I just looked for examples that are easier for me to understand so I can share them to my students as well. Then, whenever I made them do an activity, I made sure that they could relate to and observe their environment. In this way, they were able to understand."*

Participant 4 added, *"There are many things I don't know about qualitative research, sir. But I do not stop just because I do not know. Instead, I kept watching videos from YouTube because the explanations were simplified compared to other sources. Another thing is that it is hard for my students to understand the lesson which is why I translated English to Cebuano so it would be easier for my students to connect. I also make a point to present a variety of examples so there could be references for their activities."*

Participant 6 emphasized, *"Since I am not equipped in qualitative research sir, I always watched videos on YouTube and other online resources. However, there are still vague concepts so I needed to consult my professors in college. They helped me in unlocking the difficulties I encountered in terms of the terms and other procedures in qualitative research. On my students' end, their comprehension level cannot parallel scholarly articles which is why I always make a point to look for examples that are easier for their level. Also, I practiced localization and contextualization whenever I gave them activities."*

This is to ensure that activities will be relevant in their context. Then, my co-research teachers were always asking and sharing ideas on how we deliver the concepts and practices in qualitative research."

This theme demonstrated how teachers carry their responsibilities despite the difficulties they encounter in their respective stations. Their challenges do not only cover personal competence and interest but also their students. In this study, participants 1 and 2 highlighted their difficulties in handling the subject but demonstrated a recommendable resiliency and resourcefulness amidst the challenges they encountered. This is manifested by the teachers' initiatives to find ways and avenues for learning. Asking people who have experience and searching online is what they do to fill the gaps in their knowledge. In this manner, teachers displayed collaborative effort to earn knowledge and competence in teaching the subject. According to the study by Mora-Ruano et al. (2019), teacher collaboration—specifically, talking to one another about students' performance and offering advice—is the only way to demonstrate a beneficial impact on student accomplishment. Moreover, Searching online can have a wealth of tools at their disposal, which can significantly enhance the lesson planning process (Tfe, 2019). Moreover, aside from the teachers' end, they also find solutions to address common problems they encounter with their students. Providing examples that students can relate to through localization is indeed an effective strategy for them to connect and understand. According to Napitupulu (2018), using real materials helps learners become more proficient readers. When these resources are combined with real-world assignments that involve communication, they work well. Aside from giving real-world examples, teachers also make sure to motivate them by engaging learners in exercises like dancing with the integration of the lesson to stimulate them. This is necessary to awaken their interest in the subject. As shared by these teachers, teaching the subject is challenging but they are doing their best to endure what challenges them and to find ways to give the lesson as its best to toward the students.

4.0 Conclusion

Based on the findings of this study, the challenges of teachers include a lack of experience in doing qualitative research, especially on research methodologies and analysis, no relevant training, teachers' irrelevant skills in teaching, inadequate time due to overload tasks, and students' background like the foundation of comprehension and lack of interest. It was difficult for the teachers teaching the subject since they didn't have experience doing qualitative research. Also, it was found that there was a lack of training for the teachers to suffice their knowledge in teaching the subject which made the task even harder on their part. Moreover, having a skill that does not parallel teaching the subject is also a contributing factor. The study further revealed that because teachers had many tasks to perform, it affected the completion of the output of the subject. In terms of the teachers' observations of their learners, it showed that students' lack of comprehension and lack of interest impeded their chance to complete the subject satisfactorily. Despite these challenges, teachers find ways to fill the gap in teaching the subject such as consulting experienced people, sourcing other references, and localizing materials.

The result evident in the study denoted that research teachers encountered challenges in teaching qualitative research. Thus, it recommends the following: Tanjay City Division shall provide research teachers with opportunities to learn through a series of workshops and several trainings relevant to qualitative and quantitative research. This will enhance their skills in teaching the subject. Importantly, for future researchers, since one of the major results evident in the study is the teachers' incompetence in analyzing qualitative data using thematic analysis, the study recommends doing instrumentation on thematic analysis. This can help other researchers to measure the knowledge and skills of research teachers in analyzing the data which can lead to an innovation that will help teachers to understand the steps and procedures of the said technique.

5.0 Contributions of Authors

There were no contributing authors in this study only a sole author. The author is responsible and accountable for the completion of this paper.

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The author declares that upon the completion of this paper, there was no conflicting party or interest

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9.0 References

- Antony, M. K., Subali, B., Pradana, S. P., Hapsari, N., & Astuti, F. E. C. (2019, December). Teacher's TPACK profile: The affect of teacher qualification and teaching experience. In *Journal of Physics: Conference Series* (Vol. 1397, No. 1, p. 012054). IOP Publishing. doi.org/10.1088/1742-6596/1397/1/012054
- Barni, D., Danioni, F., & Benevene, P. (2019). Teachers' Self-Efficacy: The role of personal values and motivations for teaching. *Frontiers in Psychology*. doi.org/10.3389/fpsyg.2019.01645
- Bullo, M. M., Labastida, R. T., & Manlapas, C. C. (2021). Challenges and difficulties encountered by teachers in the conduct of educational research: Basis for teachers' enhancement program. *International Journal of Research Studies in Education*, 10(13), 67-75. doi.org/10.5861/ijrse.2021.a044
- Courtney, M. B., EdD. (2023, May 21). The essential role of research in curriculum development. Courtney Consulting. <https://tinyurl.com/kwzanbyt>
- Dovetail Editorial Team. (2023, February 7). What is Phenomenology in Qualitative Research? <https://dovetail.com/research/phenomenology-qualitative-research/>
- EdTech Books. (2023). Classroom-Based research. Cc_By-nc-nd. <https://tinyurl.com/vj6vvh3r>
- Ergashevich, E. A., & Mado, A. (2024). Methodology of organizing and implementing training activities: acopen.umsida.ac.id. doi.org/10.21070/acopen.9.2024.836
- Granjeiro, É. M. (2019). Research-based teaching-learning method: a strategy to motivate and engage students in human physiology classes. *Advances in Physiology Education*, 43(4), 553-556. doi.org/10.1152/advan.00034.2019
- Huseinović, L. (2023). The effects of gamification on student motivation and achievement in learning English as a foreign language in higher education. *MAP Education and Humanities*, 4(1), 10-36. doi.org/10.53880/2744-2373.2023.4.10
- Hussien, O. Q., Jerusalem, R. Y., & Langam Jr, H. L. (2019). Research barriers of public-school teachers of the division of Iligan City. *PUPIL: International Journal of Teaching, Education and Learning*, 3(1), 189-204. doi.org/10.20319/pijtel.2019.31.189204
- Kanwal, A., Rafiq, S., & Afzal, A. (2023). Impact of workload on teachers' efficiency and their students' academic achievement at the university level. *Gomal University Journal of Research*, 39(2), 131-146. doi.org/10.51380/gujr-39-02-02
- Llego, M. A. (2020, October 28). 5 Reasons Why Teachers Should Pursue a Master's Degree in Education. *TeacherPH*. <https://tinyurl.com/yut9rn2z>
- Lubis, M. A., & Hasibuan, I. D. (2022). Menumbuhkan Minat Belajar Anak Dengan Memberikan Motivasi dan Belajar Bersama. *Jurnal Pengabdian Masyarakat Bidang Sosial Dan Humaniora*, 1(2), 287-291. doi.org/10.55123/abdisoshum.v1i2.579
- Macam, A. (2019). Research locale. *www.academia.edu*. https://www.academia.edu/39663513/Research_Locale
- May-Varas, S., EdD, Margolis, J., PhD, & Mead, T., MA. (2023, April 28). Theory of multiple intelligences. *Pressbooks*. <https://openoregon.pressbooks.pub/educationalllearningtheories3rd/chapter/chapter-9-theory-of-multiple-intelligences-2/>
- Mora-Ruano, J. G., Heine, J. H., & Gebhardt, M. (2019, August). Does teacher collaboration improve student achievement? Analysis of the German PISA 2012 sample. In *Frontiers in Education* (Vol. 4, p. 85). Frontiers Media SA. doi.org/10.3389/feduc.2019.00085
- Moran, M. (2021, June 11). What is confirmability in qualitative research and how do we establish it? *Statistics Solutions*. <https://www.statisticssolutions.com/what-is-confirmability-in-qualitative-research-and-how-do-we-establish-it/>
- Nanda, D. W., & Azmy, K. (2020). Poor reading comprehension issue in efl classroom among indonesian secondary school students: Scrutinizing the causes, impacts and possible solutions. *Englisia/Englisia : Journal of Language, Education and Humanities*, 8(1), 12. doi.org/10.22373/ej.v8i1.6771
- Napitupulu, M. H. (2018). Improving materials on reading comprehension. *SciSpace - Paper*. <https://typeset.io/papers/improving-materials-on-reading-comprehension-cobyppo19r>
- Rahimi, S., & Khatooni, M. (2024). Saturation in qualitative research: An evolutionary concept analysis. *International Journal of Nursing Studies Advances*, 6, 100174. doi.org/10.1016/j.ijnsa.2024.100174
- Studocu. (n.d.). Republic ACT 10533 - (This Act shall be known as the "Enhanced Basic Education Act of 2013"). - Studocu. <https://tinyurl.com/mryrj2bh>
- Tarraya, H. O. (2023). Teachers' Workload Policy: Its Impact on Philippine Public School Teachers (Public Policy Analysis and Review). Online Submission.
- Tfe. (2019, January 25). 4 benefits of having internet in the classroom. TFE. <https://tinyurl.com/3ssktse2>
- Tindowen, D. J., Guzman, J., & Macanang, D. (2019). Teachers' conception and difficulties in doing action research. *Universal Journal of Educational Research*, 7(8), 1787-1794. doi.org/10.13189/ujer.2019.070817
- Tingabngab, V., & Binayao, B. (2023). Challenges faced by the public elementary school teachers in conducting action research. *Teacher Education and Curriculum Studies*, 8(1), 14-22. doi.org/10.11648/j.tecs.20230801.13

Utilization of Educational YouTube Videos: An Approach in Enhancing Junior High School Students' Oral Communication Skills

Maricel C. Lonon¹, Josephine O. Oted^{2*}

¹San Martin Integrated School, Villanueva, Misamis Oriental, Philippines

²Capitol University, Cagayan de Oro City, Philippines

*Corresponding Author Email: oted.josephine@g.cu.edu.ph

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Abstract. Educational YouTube videos are considered as the portal where individuals can transmit and retrieve various kinds of information to any part of the world. This study aimed to determine the effectiveness of Educational YouTube videos in improving the speaking proficiency level of students. A quasi-experimental research design was used to gather data as it sought to determine the effectiveness of the intervention. The respondents of this study were the Grade 9 students of one of the public secondary schools in the school year 2018-2019. The present study used purposive sampling in the selection of the respondents. The experimental group was exposed to YouTube videos, while the control group was exposed to pictures and prints. Descriptive statistics were used in describing the students' speaking proficiency per criterion as well as the t-test for independent samples. The findings revealed that after the students were exposed to the intervention, the experimental group had an improvement in the level of speaking proficiency in terms of coherence; however, the result remained constant in the level of speaking proficiency in terms of vocabulary, pronunciation, and grammar. On the other hand, there was a slight improvement in the English-speaking proficiency of the students in the posttest of the control group in terms of vocabulary and coherence, and it was constant in terms of pronunciation and grammar. The results depicted that the approach employed by the researcher did not meet the desired outcome for this study. It can further be surmised that the oral communication skills of the students cannot be improved in a short time even when exposed to the intervention. Hence, the students have to undergo a longer time of training in oral communication to attain the expected skills.

Keywords: Educational YouTube videos; Oral communication skills; Junior high school students; Speaking proficiency; Quasi-experimental research.

1.0 Introduction

The process of vocally conveying thoughts and information from one person or group to another is called oral communication. Students with high levels of oral communication skills can effectively express their thoughts and ideas, engage in meaningful conversations, and articulate their viewpoints confidently and clearly. Therefore, developing oral communication skills is crucial for students' preparation for academic and professional success (Apat et al., 2023).

In academic view, learners have to acquire fluency in the utilization of the target language to make the effective transmission of the message (Muna, 2011). The speaker has to convey the message to the audience to build successful communication. To make this possible, one has to possess the skill of the target language. This is a skill which the students have to acquire for them to be effective in any academic undertakings. To make this happen,

learners were trained to enhance their oral communication skills. Hence, teachers had to utilize a teaching approach that would fit to the 21st century learners. Since it is a fact that the present learners are *digital natives*, the educators have to apply technology in their instructional materials specifically through the integration of YouTube Videos.

YouTube is a social media platform that commenced in the year 2005; it is made available to billions of individuals around the world for them to upload, share, and watch authentic videos (YouTube, 2015). This is considered as a portal where individuals can transmit and retrieve various kinds of information to any part of the world. Part of this is the teaching and learning world. Ebied (2016) stated that because of the in-demand use of YouTube for educational reasons, "YouTube for Schools" was launched by Google, and this consists of numerous video clips for educational purposes.

Because of this, educational videos are already available to teachers and students. Duffy (as cited in Wilson, 2015) declared that YouTube has the capability to be a channel for students and educators to transform, interact, and unite for the purpose of education. Ebied et al. (2016) confirmed that educational YouTube videos can improve the communication skills of learners. Hence, YouTube videos may greatly contribute to the enhancement of the speaking skills of learners.

Bruner's Constructivism theory is the basis of this study. Overbaugh (2004) cited in his article that Bruner's theory of Constructivism confirmed the belief that students can create new concepts or ideas based on their prior knowledge. Bruner emphasized that students could be active contributors to the solution of problems as well as the ability to explore more complex instructions. In addition, his theory pointed to the concept that learning involves processes namely; deriving meaning from experience, forming hypotheses, and making decision. Deriving meaning from experience happened when students acquired the constructs from their prior knowledge; right after the formation of the prior knowledge, students were able to form hypotheses in such a way that they evaluated certain stimuli based on their judgment and perspective. Finally, students reach the point of making decision when they arrive at a certain viewpoint when students decided on either to discard or retain and apply the acquired knowledge.

In the study conducted by Nguyet and Mai (2012), they discovered that utilizing video clips in classroom discussions and group activities improved the speaking skills of the learners, specifically in fluency. Furthermore, learning through YouTube was one of the effective ways to developing the speaking skills of learners. So, the use of YouTube video clips helps improve the speaking skills of students.

Moreover, the K to 12 curriculum promotes competency in oral communication. Students should be honed to be efficient speakers as well as to be globally competitive individuals. To make this possible, the educational system in the Philippines is already embracing the advent of technology in the country. The government has allocated a budget for the distribution of computers and internet connection to every school.

Eventually, teachers were obliged to be updated with the latest trends about ICT for they were encouraged to embed technology in their lessons. Despite this, it was evident that Grade 9 students in one of the public high schools in Misamis Oriental were apprehensive with using the English language during class recitation and discussion. According to Mahdi (2015), the greater part of the students are figuring out how to communicate English well and are willing to interface with others in oral English language classrooms. Nonetheless, because of different reasons, for example, absence of certainty, tension, timidity, identity, trepidation of losing face, and apprehension of committing errors, more than 66% of the students stay hesitant to react to the teacher and stay silent until singled out to answer questions. They have difficulty in expressing their thoughts and ideas since their vocabulary is limited. They even suggest to using the vernacular for them to take part in the discussion. Some students have been confident enough to speak their minds but misconstrued because of a lack of coherence in delivering their opinions. Most of the students are grammatically incorrect and fall short in pronouncing words accurately. Consequently, this has become a challenge for language teachers to look for teaching approaches to address this gap.

Since most of the students were observed to be hooked on using gadgets and always active on social media; the researcher realized that it was appropriate to integrate YouTube videos to enhance the speaking skills of the learners. In line with this, the present study makes use of Educational YouTube videos as an intervention to improve the speaking skills of the students. More so, this can also make way for the formulation of programs that keep the teachers updated on the latest trends in utilizing videos in their classes to meet the needs of the learners, especially in enhancing their speaking skills.

2.0 Methodology

This quasi-experimental study utilized the two-group pretest-posttest design. This design was chosen by the researcher to test the effectiveness of an intervention that is believed to improve the oral communication skills of the students. This study was conducted in one of the public secondary schools in Misamis Oriental during the academic year 2018-2019. This chosen school caters to basic education from junior high school to senior high school.

The respondents of the study were the 84 Grade 9 students of this National High School during the school year 2018-2019. The 84 respondents belonged to heterogeneous sections; one was the control group and the other was the experimental group. The heterogeneous sections were purposely chosen by the researcher because these sections feel reluctant in speaking the English language during oral recitations and classroom discussions resulting to a lack of participation. Both groups had undergone *extemporaneous speaking activities*, the experimental group was exposed to YouTube videos teaching instruction, while the control group used pictures and prints. Two (2) research instruments were used. First was the speech rubric to measure the oral communication proficiency level of the Grade 9 students. The second was a survey questionnaire with a scorecard.

Descriptive statistics such as frequency, percentage, and mean were used to determine the students' level of English-speaking proficiency per criterion and the drivers and barriers to using YouTube in the implementation of the intervention. T-test was used to determine the significant difference in the students' level of English-Speaking proficiency to conclude the effectiveness of the intervention.

3.0 Results and Discussion

This section presents the results with analysis and implications. The flow of the discussion is according to the objectives of the study.

3.1 English Speaking Proficiency

Table 1 shows that there was a slight improvement in English-speaking proficiency of the learners from the pretest to posttest in the vocabulary and coherence. While in pronunciation and grammar, nothing had changed in terms of the learners' English speaking proficiency.

Table 1. Mean level of english-speaking proficiency of the control group in the pretest and posttest

CRITERIA	PRETEST		POSTTEST	
	Mean	Description	Mean	Description
Vocabulary	1.83	Not Proficient	2.52	Good
Coherence	1.88	Not Proficient	2.35	Good
Pronunciation	2.19	Good	2.47	Good
Grammar	2.09	Good	2.35	Good
Overall	2.00	Good	2.43	Good

In the *vocabulary* criterion, it showed that during the pretest in the control group, the students were struggling in terms of their vocabulary. Most of the students could not express their ideas well since their vocabulary was limited. It can even turn out that a learner would somehow stop at any point in his/her speech to hunt for the right words that need to be uttered to successfully relay the intended message. On the other hand, after the posttest, there was a slight improvement in the learners' vocabulary skills. Most of them could already make use of diction minimally, while others, though they had limited vocabulary, they could already positively respond in the oral performance that was expected of them. This resulted to a mean of 1.83 with the description of *not proficient* in the pretest and 2.52 in the posttest which corresponds to a *good* description of their English-speaking proficiency, specifically in *vocabulary*.

Vocabulary was one of the most tiring skills to be acquired for it needed longer retention in the students' minds; this result implied that if learners were presented with instructional materials that were aligned with their interests; they could easily acquire the skill no matter how complex it was. Hence, teachers had to utilize instructional materials based on the learning competencies that were required of the students. With this, teaching and learning can be delivered in a non-threatening way. Teachers don't have to compel the students to absorb the lesson, for they are already motivated by just the materials that have been presented to them.

In terms of the criterion *coherence*, though students can arrange their ideas, they still need help in terms of the connection of ideas between sentences. With the mean of 1.88 it could be described that the learners' English speaking proficiency in the *coherence* was *not proficient* in the pretest. After the posttest, it showed that students could already arrange their ideas, yet there were still occasional misplaced statements. Despite that, it was already a satisfactory result in which learners had learned to organize their thoughts to come up with a clear message for their audience. With a mean of 1.88, the learners' English-speaking proficiency was *not proficient* in the pretest in the area of *coherence*, while in the posttest, it was already in a *good* level of speaking proficiency.

With this result, it can be interpreted that with the assistance of the visual presentation of the lesson, students were able to grasp the process of applying the skills required of them for they can see someone posed for non-verbal cues in modeling the skill. Hence, to teach coherence to the students, specifically in speaking, the teacher had to present the visual cues and discuss how to arrange the ideas while speaking. Through this, teachers had to use visual presentation through pictures.

In public speaking, pronunciation skills are one of the most relevant abilities that a speaker should have. If the speaker had difficulty in pronunciation, it can mean misinterpretation of the message; since there were a lot of words in the English language that were quite similar in their pronunciation; if a certain word was mispronounced, it may ruin the intended purpose of the message. Hence, it may hinder the essence of communication. During the pretest in the pronunciation criterion, most of the learners tended to shun their ability to speak for they were apprehensive about the right words to utilize. On the other hand, the posttest showed that learners who were apprehensive to voice out their ideas were diminished. Though there was a bit problem with the pronunciation, it can be observed that the self-esteem of the learners had slightly increased. With a mean of 2.19 (*Good*) in the pretest and 2.47 (*Good*) in the posttest, it can be inferred that there was just a slight increase in the pronunciation skills of the learners in the control group.

This means that the respondents of the study were already good in their pronunciation skills. Based on the result, it showed that though the level of speaking proficiency of students remained at a *good* level; there was an increase in terms of their performance. This was because pictures and printouts indeed served as references for the students in positively responding to the required performance. Hence, if students were presented with visual and printed materials while learning, together with the guidance of the teacher, they could eventually acquire the required performance that was expected of them.

During the pretest in the grammar criterion, it was shown that learners can only utilize a very minimal structure of grammar and that they frequently commit grammatical errors. With a mean of 2.09 (*Good*) in the pretest and 2.35 (*Good*) in the posttest; it was evident that there was a slight increase in the students' ability to apply various grammatical structures yet they still committed few errors.

From the result, it can be interpreted that the integration of the visual presentation and printouts helped the students with their grammatical concerns. This means that student participants in the present study were diligent in the sense that they had this diligence to review the printouts that were given as references. Frequent review of the print materials, can motivate students to practice and master the grammatical rules in terms of speaking. This result is supported by the study of Qadha and Al-Wasy (2022) which revealed that when grammar is taught with visual aids, students' capacity to think outside of the classroom will grow. They can apply this knowledge every time they interact with visual pictures in various social contexts.

Meanwhile, the experimental group had also undergone pre-and post-test. Table 2 presents the mean level of English-speaking proficiency of the experimental group in the pretest and post-test.

Table 2. Mean level of english-speaking proficiency of the experimental group in the pretest and posttest

CRITERIA	PRETEST		POSTTEST	
	Mean	Description	Mean	Description
Vocabulary	2.00	Good	2.52	Good
Coherence	1.95	Not Proficient	2.35	Good
Pronunciation	2.30	Good	2.52	Good
Grammar	2.19	Good	2.35	Good
Overall	2.12	Good	2.44	Good

In the *vocabulary* criterion, all of the learners were assessed to be using limited diction which usually hinders their ability to positively respond to the expected performance. After the post-test, there was a slight increase in their mean. From a mean of 2.0 in the pretest with the description of *good* to the mean of 2.52 in the posttest with the same description of *good*. It can be gleaned that, though they can make use of their limited stock of vocabulary, they can already be understood. Despite the increase in the mean, the speaking proficiency level remains in the *good* level in speaking proficiency.

In addition, in the area of coherence, there was an increase of the learners' ability to organize ideas. Participants committed occasional mistakes in the organization of ideas. After the post-test, they could already organize their sentences, but they were sometimes observed to have misplaced sentences. From a mean of 1.95 (not proficient) in the pretest to a mean of 2.35 (good) in the post-test. Hence, it indicated that there was an improvement in the learners' ability to organize their statements after they were exposed to the YouTube integration in their lesson.

Furthermore, there was a slight increase in the ability of the learners to utter the words correctly. During the pretest, learners had difficulty in pronouncing the words, but after the implementation of the post-test, it could be observed that most of the learners' pronunciation skills increased from a mean of 2.30 (good) in the pretest to 2.52 (good) in the post-test. This suggests that the integration of the YouTube videos in the class helped the learners in terms of their pronunciation concerns; despite the increase of the mean, the level of speaking proficiency of learners remained at a *good* level.

Since students have the opportunity to see and hear the native speakers speak the language, they can have a wider chance to imitate the speaker's way of utterance. Based on the findings, the researcher believed that with the habitual exposure of students to Educational YouTube videos, their level of speaking skills can gradually increase. Similarly, during the pretest students had only used basic structures and made frequent grammatical errors. However, it showed that there was an increase of the mean from 2.19 in the pretest to 2.35 in the posttest. Still, the level of speaking proficiency in grammar criteria was *good*.

A slight change in the performance of the students in their grammatical performance shows a sign that YouTube videos integration in speaking class helped in developing the grammatical speaking ability of the students. It showed that as learners got acquainted with how the language was used in a real-life setting of the speakers in the video; it led to the realization of making the students familiar with the grammatical concepts of the language. Based on the findings, it can be implied that both the control and experimental groups positively contributed to the development of the speaking proficiency level of the students.

It has been declared by Thornbury (2007) that speaking involves the senses such as eye contact, facial expressions, gestures, tempo, pauses, voice quality changes, and variations in pitch (voice projection and vocal variety). So here, the speaker had to adhere to the proper gestures that each quality had to possess. Therefore, with the integration of these multimedia devices such as videos, prints, and pictures; students were able to acquaint themselves with the exact representation of how speaking had to be done. Eventually, they were able to absorb the necessary skills that were apt to be acquired by them.

These results can be viewed through various factors. It was found that the kind of skill that the students were expected to acquire and the period that they were exposed to the intervention were the intervening factors. Thornbury (2007) explained that oral communication skill was composed of various features such as eye contact, facial expressions, gestures, tempo, pauses, voice quality changes, and variations in pitch (voice projection and vocal variety). These characteristics had to be acquired by the students with the utmost proficiency before they could be called adept in the target language. With this fact, it can be perceived that these features had to be

embedded in the attitude of the speakers and reality showed that changing any part, such as the oral communication ability of a person indeed takes time.

In addition to this, the present study utilized a short period in exposing students to the intervention, which deviated the concept of cognitive growth based on Bruner's theory of constructivism (Clabaugh, 2004). In this theory, Bruner emphasized that students had to undergo the process to successfully acquire the desired learning outcome. Considering that oral communication was the most challenging skill (Oradee, 2013); it can be said that the skill was quite difficult to acquire; hence, it required a long time of training. Therefore; to make the intervention effective, a longer time must be allotted for the exposure of the students for them to be allowed to undergo the actual process of acquiring the necessary skills in oral communication.

3.2 Test of Significant Difference between Pretest and Posttest of Experimental Group

Table 3 displays the test of significant difference in the pretest and post-test of the experimental group.

Table 3. Test of significant difference in pretest and post-test of experimental group

CRITERIA	T	P-VALUE	DECISION	INTERPRETATION
Vocabulary	-6.72	.00	Reject Ho	Significant
Coherence	-5.28	.00	Reject Ho	Significant
Pronunciation	-2.47	.01	Reject Ho	Significant
Grammar	-2.87	.00	Reject Ho	Significant
Overall	-31548	.00	Reject Ho	Significant

Table 3 disclosed that all criteria bear the P-value lesser than .05. This can lead to the basis of the rejection of the null hypothesis. With this, it indicated that "there is a significant difference in the level of the English-speaking proficiency between the pretest and post-test of the experimental group". Therefore, the integration of YouTube videos to enhance the speaking proficiency of the learners worked well in the experimental group. This result is similar to the study of Castaneda (2011) which revealed that the integrated learning strategies employed on YouTube helped students' speaking abilities. He discovered that over 85% of the participants had made progress in speaking and understanding the meaning of various concepts. Furthermore, research suggests that YouTube encourages students to learn and communicate freely with their peers.

Another study conducted by Miller et al. (2012) investigated how YouTube improved the speaking abilities of sixth- and eighth-grade pupils in a Kuala Lumpur, Singapore school. For three months, speaking classes used YouTube as a medium. A proficiency test was administered to the students following their use of YouTube in class. According to the study, students can improve their speaking process and engage with peers in pair or group work by using YouTube, which is a useful and valuable tool. The main conclusion of the study was that students discussed their thoughts and work with classmates and engaged in self-reflection on their tasks throughout class.

3.3 Test of Significant Difference Between Posttest Results of the Control and Experimental Groups

Table 4 shows the test of significant difference in the post-test results of the control and experimental groups. The result indicates that the P-value of all the criteria presents data that was greater than .05; thus, provides the indication that the null hypothesis was accepted.

Table 4. Test of significant difference in post-tests of the control and experimental groups

CRITERIA	T	P-VALUE	DECISION	INTERPRETATION
Vocabulary	.00	1.00	Accept Ho	Not significant
Coherence	.00	1.00	Accept Ho	Not significant
Pronunciation	-.81	.42	Accept Ho	Not significant
Grammar	.00	1.00	Accept Ho	Not significant
Total	.01	.80	Accept Ho	Not significant

Therefore, there is no significant difference in the post-test of the control and experimental groups. This reveals that the teaching methods that were applied to the control and experimental groups both contributed to the improvement of the learners' speaking proficiency. This result is supported by Bruner's Constructivism theory which states that learning takes time to process the learning outcome (Overbaugh, 2004). Moreover, Luama (2004) asserted that "speaking in a foreign language is very difficult and competence in speaking takes a long time to develop" (p.1). Hence, speaking skills is a complex undertaking that requires a longer time for students to master

the necessary skills in speaking especially if it is either in ESL or EFL. Based on the timeline that the present study had utilized in applying the intervention, it was found that a few weeks of exposure to the intervention was not enough to enhance the speaking proficiency of the students.

Furthermore, oral communication was considered the most challenging skills compared to writing, reading, or listening (Oradee, 2013). This means that oral communication subjects should be given utmost attention over other communication skills; there must be a longer time that had to be allotted for speaking class. Therefore, in enhancing the speaking proficiency of students; teaching strategies do not only matter but also with length of time that students should be exposed to the target language.

3.4 Drivers and Barriers in the Implementation of the Educational YouTube videos as an Intervention

Table 5 presents the drivers and barriers to the implementation of Educational YouTube Videos as an intervention.

Table 5. Drivers and barriers in the implementation of the educational youtube videos as an intervention

VARIABLES	MEAN	DESCRIPTION
Drivers		
Imitation of the language	3.16	Occasionally
Imitation of the non-verbal cues	2.61	Occasionally
Aware of Cross-cultural communication	2.61	Occasionally
Ideas shared in class from the video	1.33	Always
Class attendance	2.09	Often
Sharing of videos (friends and family)	3.09	Occasionally
Barriers		
YouTube same as TV	1.26	Always
The quality of the video attracts interest	1.76	Always
Irritated feelings while the video was stopped in sections	2.73	Occasionally
Video's time (Video Clips)	1.50	Always
The school has sufficient facilities	2.90	Occasionally

Certain drivers served as the motivation for using YouTube videos inside the classroom. Participants *occasionally* imitated the language of the native speaker who was talking in the video. Not only this, they can *occasionally* mimic the non-verbal cues of the persons in the video. Furthermore, they *occasionally* imitated the culture of the people in the video which served as the model. Because of this, students *always* shared ideas from the YouTube videos that they had seen in the class. In addition to all of this, students were *often* motivated to attend class regularly looking forward to the YouTube videos that were presented to them. Consequently, students *occasionally* shared the videos with their friends and family. This might be because most of the learners had already owned gadgets that could download or share videos.

On the other hand, since there were drivers in using educational YouTube videos in the classroom, there were also barriers that might hinder the relevance of this teaching method. Most of the learners *always* treat the YouTube videos as plain as a regular TV show. Moreover, they were *always* looking after the quality of the video that were presented to them because more often the gadget that was utilized during the class presentation does not have the latest software that upgrades the quality of the video. Thus, it makes the quality of the video obsolete, which might not attract the attention of the learners. Moreover, they were *occasionally* irritated when the teacher would stop the video for a short discussion for it may hinder their focus in grasping the message of the video. Furthermore, they *always* prefer to watch video clips and trailers before they can contribute their ideas of a certain issue. Meanwhile, most of the participants declared that the issue of the facilities was not a hindrance to their interest in viewing videos during class since their school *occasionally* had sufficient facilities like a computer laboratory that let their teacher easily use videos in their English classes. This may be the result of the government's project of equipping public schools with computers and internet connections that allow learners to acquire 21st-century learning competencies.

4.0 Conclusion

This study concluded that enhancing oral communication skills of students is possible by providing interventions or learning materials such as YouTube videos that could motivate the students to speak using English language. In the case of the present study, it has been proven that the two teaching methods, (1) print and pictures and (2) YouTube videos, are both effective in improving the communication skills of the students. However, students had

to undergo longer time of training in oral communication to successfully attain the required skills that are expected of them. As stated by Bruner's Constructivism theory that learning takes time to process the learning outcome, hence providing more activities and drills for the students to use English language and exposing the students to environment where they are encouraged to speak English language can help them enhance their English-speaking proficiency.

Based from the findings and conclusion, it is recommended that the schools have to provide trainings and workshops for the teachers to be equipped with innovative strategies in improving the English-speaking proficiency of the students. Further, the teachers have to be creative in their teaching methods that aim to improve the communication skills of the students. The teachers have to design and tailor their teaching methods considering the varied interests and needs of the students. Further, the students have to cooperate in the activities and chances that will expose them to use and practice speaking English language.

5.0 Contributions of Authors

Maricel C. Lonon-Encoding, data gathering, data analysis, writing
Josephine Oxillo Oted- Data analysis, writing, supervising, editing

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7.0 Conflict of Interests

The author declares no conflicts of interest

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9.0 References

- Arat, H., Sarias, K., Tomarong, M., Bacatan, J. (2023). The Influence of Oral Communication on the Learning Engagement of Students. Canadian Journal of Language and Literature Studies Vol. 3(4), pp. 44-58 DOI:10.53103/cjlls.v3i4.104
- Benmouhoub, L. (2015) YouTube Videos as Pedagogical Tools to Improve EFL Learners' Oral Fluency. University of Bejaia. Ministère de l'Enseignement Supérieur et de la Recherche Scientifique. République Algérienne Démocratique et Populaire.
- Beothel, M., & Dimock, K. V. (2000). Constructing knowledge with technology. Austin, TX: Southwest Educational Development Laboratory.
- Boghossian, P. (2006). Behaviorism, constructivism, and socratic pedagogy. Educational Philosophy & Theory, 38(6), 713-722.
<http://dx.doi.org/10.1111/j.1469-5812.2006.00226.x>
- Castaneda, D. A. (2011). The effects of instruction enhanced by games on learning the distinctions of the Spanish preterit and imperfect. Foreign Language Annals, 44(4), 692 - 711
- Dewi, H. (2016). Project based learning techniques to improve speaking skill. *English Education Journal*, 7(3), 341-359.
- Djahida, L. (2017). The Role of Educational YouTube Videos in Improving EFL Learners' Speaking Skill. (The Case of Second Year LMD Students of English at Biskra University). Mohamed Kheidar University of Biskra. People's Democratic Republic of Algeria.
- Duffy, P. (2008). Engaging the Youtube googled-eyed generation: Strategies for using Web2.0 in teaching and learning. The Electronic Journal of E-Learning, 6(2), 119-130.
- Ebied, M., Kahouf, S., Rahman, S.A. (2016). Effectiveness of Using Youtube in Enhancing the Learning Of Computer In Education Skills In Najran University. International Interdisciplinary Journal of Education. Volume 5, Issue 3. DOI:10.12816/0035903
- Eralangga, R. (2016). Enhancing Students' Speaking Skills through "Kunci Inggris" Videos in Islamic Junior High School. Journal of Education and Practice. ISSN 2222-1735.ISSN 2222-288X.Vol.7, No.36. www.iiste.org
- Fulcher, G. (2003). Testing second language speaking. London: Pearson Longman.
- Jalaluddin, M. (2016). Using YouTube to Enhance Speaking Skills in ESL Classroom. Aligarh Muslim University, Aligarh. English for Specific Purposes World, ISSN 1682-3257, www.esp-world.info, Issue No.50, v.17, 2016
- Jamshidnejad, A. (2011). Developing accuracy by using oral communication strategies in EFL interactions. Journal of Language Teaching and research, 2(3), 530-536.
- Jamshidnejad, A. (2010). The construction of oral problems in an EFL context: An innovative approach. Studies in Literature and Language, 1(6), 8-22.
- June, S. et al (2014). Assessing the Use of YouTube Videos and Interactive Activities as a Critical Thinking Stimulator for Tertiary Students: An Action Research. International Education Studies; Vol. 7, No. 8; 2014 ISSN 1913-9020 E-ISSN 1913-9039.
- Harmer, J. (2001). *The Practice of English language teaching*. Harlow: Longman

- Kabooha, R. & Elyas, T. (2018). The Effects of YouTube in Multimedia Instruction for Vocabulary Learning: Perceptions of EFL Students and Teachers. *English Language Teaching*; Vol. 11, No. 2; 2018. Published by Canadian Center of Science and Education. ISSN 1916-4742 E-ISSN 1916-4750.
- Miller, L., Hafner, C. A., & Fun, C. N. K. (2012). Project-based learning in a technologically enhanced learning environment for second language learners: Students' perceptions. *E-Learning and Digital Media*, 9(2), 183 – 195.
- More, N. (2015). Student Attitudes Towards The Integration Of YouTube In Online, Hybrid, And Web-Assisted Courses: An Examination Of The Impact Of Course Modality On Perception. *MERLOT Journal of Online Learning and Teaching*. Vol. 11, No. 1, March 2015.
- Muna, M. (2011). Utilizing YouTube Videos (A Classroom Action Research at the grade XI Students of SMK Negeri 3, Surakarta). Perpustakaan.uns.ac.id.
- Muslem, A. (n.d.) The Application of Video Clips with Small Group and Individual Activities to Improve Young Learners' Speaking Performance. *English Education Study Program, Faculty of Teacher Training and Education, Syiah Kuala University, Banda Aceh*, 23111, Indonesia. *Teaching English with Technology*, 17(4), 25-37, <http://www.tewtjournal.org>
- Nguyet, N. T. M., & Mai, L. T. T. (2012). Teaching conversational strategies through video clips. *Language Education in Asia*, 3(1), 32-49.
- Ormrod, J. E. (2004). *Human learning*. Upper Saddle River, NJ: Pearson Education, Inc.
- Owens, R. & Fralinger, B. (2009). YouTube as a Learning Tool. Rowans Univeristy, USA. *Kings College University, USA. Journal of Caliese Teachins & Learning* - December 2009 Volume 6, Number 8.
- Qadha, A.M. and Al-Wasy, B. Q. (2022). The impact of implementing visual grammar on learning participle adjectives by EFL learners. *PSU Research Review*. ISSN: 2399-1747. <https://www.emerald.com/insight/content/doi/10.1108/PRR-02-2022-0017/full/html>
- Riswandi, D (2016). Use of YouTube-Based Videos to Improve Students' Speaking Skill Proceeding The 2nd International Conference On Teacher Training and Education Sebelas Maret University. Volume 2, Number 1. ISSN: 25002 – 4124
- Vural, Ö. F. (2013). The Impact of a Question-Embedded Video-based Learning Tool on E-learning. *Educational Sciences: Theory & Practice*, 13(2), 1315-1323.
- Wilson, A. (2015). *YouTube in the Classroom*. Department of Curriculum, Teaching and Learning Ontario Institute for Studies in Education of the University of Toronto.

Prime Human Resource Management Implementation, Work Performance, and Client Satisfaction in the City Government of Calamba

Jenny Rose M. Lopez

Laguna College of Business and Arts, City of Calamba, Laguna, Philippines

Author email: jennyroselopez1997@gmail.com

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Abstract. In today's government landscape, the need to possess expertise in Human Resource Management (HRM) and adhere to the ideals of meritocracy has become highly significant. PRIME-Human Resource Management plays a crucial role in optimizing staff performance through its holistic approach. It is imperative to conduct a comprehensive study on the complex connection between PRIME-HRM, performance, and customer satisfaction, especially in the specific setting of city government, as exemplified by the case of Calamba. The research investigated the relationships between the level of implementation of PRIME-HRM and the level of work performance, and how work performance, in turn, affected client satisfaction in the City Government of Calamba. Additionally, the study discussed the issues, concerns, and difficulties that hinder meeting the goals of PRIME-HRM implementation, increased work performance, client satisfaction, and retention. A researcher-made and adopted questionnaire was used to collect data from 201 randomly selected respondents. The model was analyzed using the Mean, Four-point Likert Scale, Standard Deviation, and Pearson Product-moment Correlation. The analysis revealed a significant relationship between the level of implementation of PRIME-HRM and Work Performance and no significant relationship between frontline employees' work performance and client satisfaction. Furthermore, the study proposed an action plan to develop, improve, and incorporate more techniques into the ongoing implementation of PRIME-HRM to enhance the current program and increase employee performance and client satisfaction. The strategies and activities like streamlining and establishing and oversight committee were proposed to include more techniques in the ongoing implementation of PRIME-HRM to enhance the current program and increase employee performance and client satisfaction.

Keywords: Human resource management; PRIME-HRM; Work performance; Client's satisfaction.

1.0 Introduction

In today's complex and interconnected global landscape, governments are tasked to navigate a series of challenges while striving to meet the needs and expectations of their citizens. At the heart of effective and good governance lies the efficient development and implementation of Human Resource Management (HRM) practices and policies, as local governments aim to optimize workforce performance and enhance service delivery. However, around the world, governments face a myriad of challenges in implementing HRM practices. These challenges are often rooted in the complexities of public operations, which involve strict regulations, diversity in the workforce, fiscal and budgetary constraints, and addressing ever-evolving societal needs. Moreover, globalization has increased the level of talent competition, which requires governments to develop strategies to attract and retain competent employees. Additionally, one prominent challenge is the need to balance performance or merit-based recruitment and promotion with political considerations, particularly in democratic countries.

Meanwhile, the Philippine government also faces challenges that significantly affect HRM practices, and consequently, employee performance and client satisfaction. The rapid growth of the population places a never-ending demand on societal needs, bureaucratic red tape, and regulatory hurdles impede the agility of HRM reform efforts. Additionally, inadequate funding for HRM programs and limited access to training and development opportunities limit the government's ability to cultivate a highly skilled and adaptable workforce. Moreover, cultural factors such as hierarchical organizational structures and resistance to change, present additional obstacles to HRM reform efforts and slow down the implementation of HRM innovative initiatives.

The motivation to assess these challenges originates from the need to understand their relationship and its effects on organizational outcomes. As local governments strive for efficiency and excellence, the viewpoints, strategies, and guiding concepts employed in HRM become more apparent. Additionally, in addressing the integrity aspect of good governance, HRM practices play a vital role in managing human resources and shaping the attitudes and beliefs of employees. These practices underscore openness, responsibility, and the continuous development of civil workers, aligning strategically and operationally with the core principles of good governance (Sarnthoy, 2019). These principles, strategically and operationally aligned with the core tenets of good governance, weave a tapestry that defines the ethos of effective governance.

Recognizing this imperative, the City Government of Calamba embraced strategic management, superior HRM practices, and operational efficiency through the implementation of the Program to Institutionalize Meritocracy and Excellence in Human Resource Management (PRIME-HRM) in 2015. This holistic initiative combines the Personnel Appraisal Assistance Program (PMAAP) and the CSC Agency Accreditation Program (CSCAAP), to create a robust platform for knowledge sharing and development in government agencies. PRIME-HRM is designed to enhance the capacity of the public sector in the Philippines and encompasses horizontal improvements such as networked, system-defined, integrated, and networked HRM, as outlined in Philippine CSC Memorandum Circular No. 24, 2016.

Despite the increasing adoption of HRM initiatives like PRIME-HRM and its potential influence on work performance and client satisfaction, there remains a notable gap in examining the intricate relationship between these variables, particularly within the context of a city government, as exemplified by the case of Calamba. This research gap not only impedes the understanding of the efficacy of HRM strategies in local government settings but also limits policymakers' and practitioners' ability to implement evidence-based practices that improve internal operational efficiency and client satisfaction. Thus, bridging these gaps in the literature is crucial not just for expanding understanding, but also for guiding strategic decision-making processes and generating tangible gains in service delivery and governance effectiveness in local government settings.

With all the aforementioned considerations, this thesis systematically explored the nuanced relationship of PRIME-HRM, work performance, and client satisfaction. The study sought to delve into how PRIME-HRM practices affected work performance and, reciprocally, how work performance affected client satisfaction. The research provided valuable insights and practical recommendations to improve human resource management practices, thereby enhancing employee performance and client satisfaction within the city government context. The findings were poised to make a substantial contribution to the existing knowledge on PRIME-HRM implementation in public sector organizations, informing strategic decision-making processes for the optimization of service delivery.

Ultimately, this thesis endeavored to contribute to the broader understanding of HR management's effects on organizational success and service delivery optimization. By creating and sustaining a highly qualified and motivated workforce, the city can not only satisfy but genuinely delight its clients, thus enriching the broader body of knowledge on HR management in the process.

2.0 Methodology

2.1 Research Design

This study used a quantitative research design. As cited in Mohajan (2021), Creswell stated that chemistry and physics in the physical sciences originated quantitative research. Research using this rigorous approach can find intricate patterns and connections between variables, and their conclusions can be more broadly generalized to

include a larger population (Bhandari, 2021). A quantitative study gives a scientifically sound and quantifiable technique for analysis when investigating the correlations among PRIME-HRM implementation, work performance, and client satisfaction.

Furthermore, a descriptive-correlational research methodology was used for this investigation. This strategy focused on elucidating the relationships between variables and identifying probable correlations (Creswell, 2018, as cited in Barairo, 2021). It helped the research to get data on the variables of interest without modifying any variables or altering the natural environment. The research will get more specific information regarding the City Government of Calamba's levels of PRIME-HRM implementation, job performance, and customer satisfaction. Additionally, by examining the connections between these variables, the researcher can investigate possible relationships and correlations.

2.2 Research Participants

Participants were composed of 67 frontline employees and 134 clients of the City Government of Calamba. The researcher employed stratified random sampling to select the study respondents. Including frontline employees and clients in the survey enhances its validity and comprehensiveness by providing a more holistic understanding of the research subject. Respondents were selected by meticulously assessing their departmental/office transactions and voluntary agreement to participate in the research.

2.3 Research Instrument

Validated researcher-made and adopted survey questionnaires used by Hiwatig (2023) were used in the data gathering. An extensive evaluation of the literature, studies, and similar research was conducted to ensure that the questions included in the questionnaires were relevant to the study's objectives. The first questionnaire was divided into three sections to collect data on distinct areas of the study's objectives. The first section collected demographic data. The second examined the level of PRIME-HRM implementation, and the third part was an adopted questionnaire that focused on work performance.

The second questionnaire was divided into two sections, with the first collecting demographic information and the second determining the level of client satisfaction.

Validation of the Instrument

A panel of research and statistics specialists assessed the survey questionnaire for its suitability and relevance. After thoroughly evaluating their recommendations, the questionnaire underwent revisions and assurances to enhance its comprehensibility. After modifications, the panel employed the CVR Lawshe method to validate the questionnaire's content. They also ensured a CVI average result of 1.00 to ascertain that it sufficiently embodies the measured content domain. After the questionnaire had been completed and validated, a pilot test was undertaken to evaluate its accuracy and utility in collecting data. After pilot testing, corrections and retests were made to address feedback and suggestions. The Cronbach's Alpha was 0.765, 0.824, 0.935, 0.855, 0.913, 0.894, 0.783, and 0.861 in terms of Recruitment Selection Placement, Performance Management, Learning and Development, Rewards and Recognition, Quality, Efficiency, Timeliness, and Client Satisfaction respectively.

2.4 Data Gathering Procedure

The permission to conduct the study from the City Government of Calamba was obtained by submitting an official letter to the Local Chief Executive through the City Human Resources and Management Office (CHRMO). Furthermore, the researcher requested assistance from the CHRMO in distributing the survey questionnaire. Respondents were given verified questionnaires, and instructions on how to complete them were provided. The respondents received the questionnaire in plenty of time to complete it. Data were tallied, analyzed, and interpreted after data collection.

2.5 Ethical Considerations

This research meticulously followed the ethical guidelines outlined in the LCBA Research Manual to guarantee that the research was carried out with honesty and integrity. The study observed the strictest ethical guidelines and considered each study participant's welfare. Frontline employees and external clients who took part in the survey did so voluntarily and deliberately after receiving enough information about the objectives and potential

outcomes of the study. Respondents' permission was obtained before beginning the study, and the significance of their participation in achieving its objectives was emphasized. All information and data were collected secretly, ensuring they were kept private and secure. The contributions of other experts and authors were properly acknowledged through citation and reference. Additionally, this research strictly adhered to the regulations under the Data Privacy Act of 2012, which aimed to protect the fundamental right of individuals to privacy while ensuring the free flow of information for legitimate purposes. The researcher confirmed that all information and data were used for the study and that nothing was disclosed to unauthorized individuals or groups. The researcher demonstrated outstanding professionalism, integrity, and respect for everyone in the research process.

2.6 Data Analysis

The statistical treatment used in the study were as follows:

- The four-point Likert scale, mean, and standard deviation were used to measure and summarize the variability of the level of implementation of PRIME-HRM in the City Government of Calamba.
- The four-point Likert scale, mean, and standard deviation were used to measure and summarize the variability of the City Government of Calamba employees.
- The four-point Likert scale, mean, and standard deviation were used to measure and summarize the variability of the clients' satisfaction levels at the City Government of Calamba.
- Pearson Product Moment Correlation Coefficient was utilized to test the hypothesis and determine the significant relationship between variables with probability. It also helped to decide whether to accept or reject the null hypothesis.

3.0 Results and Discussion

3.1 Frontline Employees' Assessment of the Level of Implementation of PRIME-HRM

Recruitment, Selection, and Placement

Table 1. Level of implementation of PRIME-HRM leveling in terms of recruitment, selection, and placement

	INDICATORS	MEAN	INTERPRETATION
1	Posts vacancy using appropriate publication modes (Examples: CSC bulletin of vacancies, newspaper, agency website, social networking, etc.)	3.57	FI
2	Attracts applicants regardless of gender, civil status, age, disability, ethnicity, religion, etc.	3.64	FI
3	Evaluates applicants using approved job descriptions and qualification standards (work experience, education, training, and license)	3.57	FI
4	Uses appropriate tools (trade test, paper and pencil test, and background investigation) to evaluate applicant's functions and qualifications.	3.51	FI
5	Uses responsive selection criteria processes for applicants regardless of gender, age, disability, civil status, ethnicity, religion, etc.	3.64	FI
6	Conducts orientation to newly hired employees to help them understand performance expectations, reporting relationships, and information networks needed to perform the job.	3.85	FI
OVERALL ASSESSMENT		3.63	FI

Note: 3.25-4.00 Fully Implemented (FI) 2.50-3.24 Implemented (I) 1.75-2.49 Partially Implemented (LI) 1.00-1.74 Not Implemented (NI)

Table 1 shows that recruitment, selection, and placement were fully implemented by the City Government of Calamba. The indicator "conducts orientation to newly hired employees to help them understand performance expectations, reporting relationships, and information networks needed to perform the job." yielded the highest mean score of 3.85 and was interpreted as fully implemented. On the other hand, the indicator "uses an appropriate tool (trade test, paper, and pencil test, and background investigation) to evaluate applicant's functions and qualifications" received the lowest mean score of 3.51 and was also interpreted as fully implemented.

This implies that the City Government of Calamba excels in delivering thorough onboarding procedures. The efficacy of aiding recently employed individuals in comprehending performance standards, reporting organizational structures, and information networks essential to their positions can be ascribed to meticulously designed orientation programs, clear communication, and nurturing workplace culture. However, the indicator with the lowest average score pertains to using appropriate tools (such as trade tests, paper and pencil tests, and background investigations) to assess applicants' abilities and credentials. The statement implies that the City Government of Calamba has deficiencies or shortcomings in effectively utilizing tools such as trade tests, paper

and pencil tests, and background investigations. To tackle these areas, improving assessment procedures, optimizing tool efficacy, or offering supplementary training to individuals engaged in the evaluation process may be necessary.

Research by Stephen et al. (2019) showed that successful recruitment and selection processes led to the hiring and retention of competent employees. Therefore, organizations should have prioritized hiring qualified candidates through a competitive and objective approach to improve performance. In the recruitment and selection processes, the identification, acquisition, and placement of people were crucial steps that ultimately affected the organization's success. A better recruitment and selection process improved organizational performance and raised the possibility of keeping happy personnel, particularly in fields like adult education. Any organization's recruitment procedure had to be effective if it was to be successful.

To choose the best candidates for a position, potential candidates had to be screened first to see if they satisfied the organization's needs. This selection procedure, or screening, entailed analyzing documents, data sheets, and resumes to evaluate the candidate's qualifications. Testing could also determine whether a candidate had the knowledge and skills to do the job well. According to Olulekan (2006, as cited in Haerani & Sumardi, 2020), common test types utilized in the selection process included aptitude, accomplishment, vocational interest, and personality assessments. The decision to hire a candidate who best fulfilled the organization's requirements was made during the hiring process's choice and offer of employment stage. This happened after the screening phase (Sanda & Midala, 2019).

Performance Management

Table 2. Level of implementation of PRIME-HRM leveling in terms of performance management

INDICATORS		MEAN	INTERPRETATION
1	Orients employees of the importance of performance management systems and processes.	3.67	FI
2	Helps in formulating performance targets and measures.	3.61	FI
3	Uses approved performance indicators for the individual-target setting process.	3.66	FI
4	Aligns the individual targets with the City Government's mandate, goals, and targets.	3.67	FI
5	Helps in determining where to focus effort so that high value will be obtained.	3.58	FI
6	Validate employees' self-rating individual performance review and evaluation process.	3.61	FI
7	Provides individuals and offices performance tracking tools and processes.	3.54	FI
OVERALL ASSESSMENT		3.62	FI

Note: 3.25-4.00 Fully Implemented (FI) 2.50-3.24 Implemented (I) 1.75-2.49 Partially Implemented (LI) 1.00-1.74 Not Implemented (NI)

Table 2 shows that performance management was fully implemented by the City Government of Calamba. The indicators "Orients employees of the importance of performance management systems and processes" and "Aligns the individual targets with the City Government's mandate, goals, and targets" yielded the highest mean score of 3.67 and were interpreted as Fully Implemented. On the other hand, the indicator "Provides individuals and offices performance tracking tools and processes" received the lowest mean score of responses with 3.58 and was also interpreted as Fully Implemented.

This implies that the City Government of Calamba has an exceptional focus on highlighting the importance of performance management systems and processes. The alignment between individual targets and organizational goals demonstrates a firm dedication to ensuring employees understand the framework and contribute efficiently to the city's objectives. This indicates a thorough communication plan and a direct connection between individual achievement and the organization's success. On the other hand, the lowest mean score for offering performance-tracking tools and procedures may indicate areas where improvements are needed in providing resources or tools for efficient performance monitoring. Although the current score suggests that this component is fully implemented, there is potential to enhance and broaden the range of tools, guaranteeing that individuals and offices have the best resources to monitor their performance.

In line with this, the Strategic Performance and Management System (SPMS) was implemented in the Philippine public sector to enhance the synchronization between individual performance objectives, the organization's

desired outcomes, and the national and local governments. This public sector company created a Performance Management System that followed the essential requirements of the Civil Service Commission for implementing the SPMS (Pesarillo, 2020).

The SPMS adhered to a PMS cycle consisting of four stages. The initial phase entailed performance planning and commitment, in which performance monitoring and coaching subsequently succeeded. Stage 3 involved performance reviews and evaluations, followed by performance rewards and development planning. In the initial phase, markers of success were established. Success indicators were benchmarks of performance that included performance measurements and targets (MC No. 6, s. 2012). CSC stated that performance measures should encompass one or more of the following categories: quality or effectiveness, which assessed the extent to which objectives and goals were achieved and concerns were addressed with excellence; efficiency, which evaluated the area to which objectives and goals were performed using the least amount of time and resources; and timeliness, which determined whether objectives and goals were completed within the expected timeframe.

Pulakos (2020) highlighted that a successful performance management system was characterized by a clearly defined evaluation procedure that included specific tasks and deadlines for managers and personnel. Ensuring fair treatment for all employees was essential, especially in firms where compensation and other human resources decisions were determined by performance management. Expectations for conduct and performance were also linked to the firm's corporate goals and strategic direction. When designed and executed appropriately, performance management systems encourage people to act and produce outcomes that help the organization realize its goals. According to Pulakos (2020), if enhancing customer service was found to be essential to an organization's future success, incorporating expectations and rewards for customer service into the performance management system would not only convey the significance of this aspect but also encourage improvements in the behaviors and outcomes associated with it. Similarly, if forming strong teams with strategic partners was a fundamental corporate goal, the performance management system should hold employees' successful collaboration accountable.

Learning and Development

Table 3. Level of implementation of PRIME-HRM leveling in terms of learning and development

	INDICATORS	MEAN	INTERPRETATION
1	Orients employees on the Learning and Development (L&D) systems and processes.	3.63	FI
2	Provides training and development policy applicable to all employees.	3.58	FI
3	Provides training that is relevant to the employee's line of duty.	3.55	FI
4	Uses L&D tools/processes to assess participant's learning (Examples: recap and review activities)	3.42	FI
5	Uses Learning Needs Assessment (LNA) tools and methods to identify the learning needs of employees.	3.43	FI
6	Implements training design process that aligns with the needs of targeted learners.	3.46	FI
7	Uses mixed methodologies for training programs that are learner-centered (experiential and participative)	3.34	FI
8	Develops customized learning materials and training aids to support the delivery of L&D programs.	3.42	FI
9	Facilitates and monitors participants' learning process during the training program using appropriate learning management (For example: journaling, reflection sessions, etc.)	3.49	FI
OVERALL ASSESSMENT		3.48	FI

Note: 3.25-4.00 Fully Implemented (FI) 2.50-3.24 Implemented (I) 1.75-2.49 Partially Implemented (LI) 1.00-1.74 Not Implemented (NI)

Table 3 depicts that learning and development were fully implemented. The indicator "Orients employees on the Learning and Development (L&D) systems and processes." yielded the highest mean score of 3.63 and was interpreted as Fully Implemented. On the other hand, the indicator "Uses mixed methodologies for training programs that are learner-centered (experiential and participative)" received the lowest mean score of 3.34 and was also interpreted as Fully Implemented.

This implies that the City Government of Calamba excels in orienting staff with the Learning and Development systems and procedures. This high score suggests that the organization has used successful methods of communication and engagement, which have resulted in employees being well-informed about the various learning opportunities and the importance of ongoing personal growth. On the other hand, the lowest mean rating for utilizing mixed methods in training programs suggests areas for enhancement in the development and execution of learner-centered approaches. Although now seen as fully implemented, augmenting the diversity and interactivity of training programs could potentially enhance their efficacy by accommodating a wider range of learning styles and preferences.

Learning and Development were essential since employees had to establish and adhere to learning plans aligned with the agency's priorities. This ensured they were prepared for future employment and could acquire and sustain the information, skills, and competencies necessary for their job and responsibilities. Managers and agency leaders had to ensure the punctual fulfillment of the agency's training plan, which aligned with agency priorities and the Philippine Development Plan (De Leon, 2021).

It was crucial to consider intervention development focusing on interactive learning and sharing to enhance employee learning and development competency. This should be done in partnership with external or foreign learning and development partners, as proposed by Andal (2021). Implementing inclusive, responsive, accountable, and innovative public service administration established an efficient government. This entailed the cultivation of managerial and leadership traits, as well as the acquisition of information and skills. This policy reflected the government's dedication to ensuring that a well-informed, skilled, proficient staff served the public. It advocated for the importance of establishing a solid foundation of organizational leadership through proactive management practices and continuous performance improvements.

Rewards and Recognition

Table 4. Level of implementation of PRIME-HRM leveling in terms of rewards and recognition

	INDICATORS	MEAN	INTERPRETATION
1	Orients employees on Rewards and Recognition policies, programs, and processes.	3.57	FI
2	Uses the result of the performance evaluation as inputs in the agency's Human Resource plan and rewards and incentives.	3.61	FI
3	Recognizes employee's performance accordingly.	3.55	FI
4	Develops Rewards and Recognition programs that recognize employee's innovative ideas and exemplary behavior.	3.61	FI
	OVERALL ASSESSMENT	3.59	FI

Note: 3.25-4.00 Fully Implemented (FI) 2.50-3.24 Implemented (I) 1.75-2.49 Partially Implemented (LI) 1.00-1.74 Not Implemented (NI)

Table 4 shows that rewards and recognition were fully implemented. The indicators "Uses the result of the performance evaluation as inputs in the agency's Human Resource plan and rewards and incentives." and "Develops Rewards and Recognition programs that recognize employee's innovative ideas and exemplary behavior." yielded the highest mean score of 3.61 and was interpreted as Fully Implemented. On the other hand, the statement "Recognizes employee's performance accordingly" received the lowest mean score of responses with 3.55 and was also interpreted as Fully Implemented.

This implies that the City Government of Calamba's human resource plan and awards program successfully integrates the results of performance evaluations. This signifies an intentional and calculated method of managing human resources, where the performance of employees plays a crucial role in creating the strategies and structures related to HR and incentives. Moreover, acknowledging innovative ideas and exemplary behavior demonstrated a favorable and forward-thinking organizational environment. The City Government acknowledges and incentivizes individuals for their innovation and exceptional achievements, establishing a work environment that promotes ongoing enhancement and resourcefulness. On the other hand, the lowest mean score for employee performance recognition indicates that although the implementation of performance recognition is complete, there may be room for enhancing consistency or fairness in acknowledging employees. This may suggest a requirement for clearer standards or better communication regarding performance acknowledgment.

Rewards and recognition were crucial for assessing employee performance at all levels and compensating them through tangible or intangible satisfaction. Employee rewards aim to attract and retain talented individuals to gain a competitive edge (Fajota et al., 2019). Bustamante and Llamzon (2022) asserted that the Rewards and Recognition policy aimed to assist the Agency in attaining its strategic goals and objectives by offering inventive, flexible, and meaningful rewards to outstanding male and female employees who demonstrated exceptional performance and accomplishments. These systems assisted other HR systems when they were effectively implemented and disseminated. Considering their research findings, they recommended that government agencies establish gender and development (GAD) awards and recognition initiatives to foster continuous growth and increased engagement among male and female personnel. When adopting approved methods and initiatives for awards and recognition, it was ensured that the guidelines followed international standards.

3.2 Frontline Employees' Assessment of the Level of Work Performance of PRIME-HRM Quality

Table 5. Level of work performance of PRIME-HRM in terms of quality

INDICATORS		MEAN	INTERPRETATION
1	Reflects work thorough and current knowledge/ skill of job and impact on agency activities/related resources.	3.60	VS
2	Uses opportunities to expand knowledge/skills, sharing information with staff.	3.61	VS
3	Consistently exceed expectations of work quality, quantity, customer service, and timeliness standards.	3.69	VS
4	Consistently and significantly exceeds job expectations and standards and demonstrates a high degree of initiative, customer service, and quality of work.	3.66	VS
5	Consistently promote and maintain a harmonious/productive work environment.	3.63	VS
6	Suggest innovations to improve operations or streamline procedures.	3.60	VS
OVERALL ASSESSMENT		3.60	VS

Note: 3.25-4.00 Very Satisfactory (VS) 2.50-3.24 Satisfactory (S) 1.75-2.49 Fair (F) 1.00-1.74 Poor (P)

Table 5 shows the quality of work performance of frontline employees which has an overall rating of very satisfactory. The indicator "Consistently exceed expectations of work quality, quantity, customer service, and timeliness standards." yielded the highest mean score of 3.69 and was interpreted as Very Satisfactory. On the other hand, the indicator "Define and analyze complex problems." received the lowest mean score of responses with 3.46 and was also interpreted as Very Satisfactory.

This implies that the frontline employees in the City Government of Calamba are demonstrating great performance in terms of work quality, quantity, customer service, and adherence to timeliness standards. This demonstrates a committed and highly efficient group that consistently produces results that exceed defined standards. It favors the organizational culture, employee dedication, and the efficacy of training and support systems. However, the lowest mean score for defining and analyzing complex issues remains within the Very Satisfactory category, indicating possible areas for enhancement. This suggests that although overall work performance is high, there may be room for improvement in problem conceptualization and analytical skills. To address this aspect, it may be beneficial to implement focused training programs or initiatives that enable staff to handle intricate challenges efficiently.

The roles of cultural views about what constituted acceptable work performance, the bar for performance that employers set for employees, and the emphasis placed on innovation and performance enhancement were all apparent aspects of performance management, highlighted in the study by Mero and Brownlee (2021). Nations like Switzerland, Singapore, Hong Kong, New Zealand, and South Africa prioritized high performance, valued training and development initiatives, placed a premium on results, rewarded excellent work, encouraged industry, and saw criticism as essential to progress. In contrast, Greece, Venezuela, Russia, Hungary, and Qatar were among the nations with a low-performance orientation; they placed a high value on loyalty and a sense of belonging, prioritized experience and seniority over individual performance, saw merit pay as potentially harmful, and considered economic motivation in general as inappropriate, interpreting individual evaluations and feedback as personally judgmental.

Multiple variables influenced work performance. A study by Niati et al. (2021) demonstrated a notable correlation between training and work performance. According to Elisa's (2020) study, there was a clear and meaningful correlation between work motivation and job performance, with work motivation having a favorable influence on work performance. Moreover, a study examining the effects of employee motivation and training on work performance indicated that training could enhance employee work performance, hence facilitating the employee's career progression. Regularly doing staff training programs enhanced employee work effectiveness and fostered employee motivation to achieve company objectives (Niati et al., 2021).

Efficiency

Table 6. Level of work performance of PRIME-HRM in terms of efficiency

INDICATORS		MEAN	INTERPRETATION
1	Regularly exceeds expectations.	3.49	VS
2	Implement innovative policies, and use resources, and technology to maximize productivity and service.	3.55	VS
3	Commit to and promote excellence, lead by example, and energize performance and teamwork.	3.64	VS
4	Use and encourage creative decisions and solutions.	3.66	VS
5	Act as a positive change agent.	3.51	VS
6	Play as a role model and be recognized as respectable and trusted.	3.49	VS
7	Articulately and persuasively present and solicit complex or sensitive data.	3.48	VS
8	Prevent/resolve unit/team problems.	3.49	VS
OVERALL ASSESSMENT		3.54	VS

Note: 3.25-4.00 Very Satisfactory (VS) 2.50-3.24 Satisfactory (S) 1.75-2.49 Fair (F) 1.00-1.74 Poor (P)

Table 6 shows the efficiency of work performance of frontline employees which has an overall rating of very satisfactory. The indicator "Use and encourage creative decisions and solutions." yielded the highest mean score of 3.66 and was interpreted as Very Satisfactory. On the other hand, the indicator "Articulately and persuasively present and solicit complex or sensitive data." received the lowest mean score of responses with 3.48 and was also interpreted as Very Satisfactory.

This implies that the frontline employees of the City Government of Calamba are skilled at encouraging and putting innovative methods of problem-solving into practice. This signifies a conducive environment that promotes innovation, motivates employees to think creatively, and appreciates the ability to find efficient ways to improve work operations. However, the lowest mean score for effectively expressing and convincingly delivering intricate or delicate information remains highly satisfactory, suggesting an area that might be improved with additional fine-tuning. Although the overall efficiency is excellent, there are potential areas for improvement in communication abilities, especially when conveying complex or sensitive material. To address this element, it may be necessary to implement specific training programs or projects focusing on communication.

Kuswati's (2020) study highlighted the significance of organizational culture in determining the level of performance that employees exhibited inside the Majalengka PDAM office. Organizations could observe a dramatic improvement in the effectiveness, efficiency, and overall performance of their employees if they cultivated a culture that prioritized innovation, clarity, and teamwork. Fujita and Alfanza's (2021) study emphasized the importance of an agency's suitable communication system and procedures within government agencies to promote knowledge and information sharing among employees. Employees should also clarify and provide the prerequisites for completing a specific task to appropriately direct citizens with their questions.

Timeliness

Table 7 shows the timeliness of work performance among frontline employees which has an overall rating of very satisfactory. The indicator "Response to client needs" yielded the highest mean score of 3.84 and was interpreted as Very Satisfactory. On the other hand, the indicator "Reflect work on maximum innovative use of time and resources to consistently surpass expectations and improve operations" received the lowest mean score of 3.55 and was also interpreted as Very Satisfactory.

Table 7. Level of work performance of PRIME-HRM in terms of timeliness

INDICATORS		MEAN	INTERPRETATION
1	Communicate in a clear, effective, timely, concise, and organized manner.	3.72	VS
2	Develop or implement solutions with low supervision.	3.66	VS
3	Reflect work on maximum innovative use of time and resources to consistently surpass expectations and improve operations.	3.55	VS
4	Answer queries for delivery of service.	3.70	VS
5	Response to client needs.	3.84	VS
6	Prepare monthly reports on time.	3.72	VS
OVERALL ASSESSMENT		3.69	VS

Note: 3.25-4.00 Very Satisfactory (VS) 2.50-3.24 Satisfactory (S) 1.75-2.49 Fair (F) 1.00-1.74 Poor (P)

This implies that the frontline employees in the City Government of Calamba demonstrate exceptional proficiency in swiftly addressing and fulfilling the demands of their clients. This demonstrates the agency's dedication to customer service, suggesting an employee who is prompt and sensitive to the needs and demands of clients. However, the lowest mean score for demonstrating innovative use of time and resources still falls within the Very Satisfactory category, indicating areas that could be enhanced. This suggests that although there is generally good punctuality, there may be potential to improve effectiveness by employing more creative methods of managing time and resources. To address this element, it may be necessary to investigate and apply innovative strategies to enhance operations even more.

Silan (2019) underscored the importance of improving management, guaranteeing deadlines were met, and maintaining the quality of work. Timely completion, status updates, and meeting deadlines contributed to employee organization and reputation-building. In addition, Salas et al. (2020) research supported improving frontline personnel's involvement and productivity. They suggested a strategic realignment of job definitions and objectives, promoting greater customer engagement and decreased time allocated to tasks performed in the back rooms. This recommendation acknowledged the demonstrated ability to effectively meet client expectations and suggested additional improvements in managing time and resources. Salas' focus on overseeing communication among leaders, workers, and consumers corresponded with the significance of face-to-face encounters emphasized in the evaluation.

Camara (2020) emphasized the connection between competent and committed employees who deliver outstanding customer service and achieve business prosperity. Within the City Government of Calamba, frontline personnel had to possess a high level of skill in efficiently attending to the demands of clients. Camara's claim that organizations with these characteristics surpassed competitors, even when offering equivalent services, strengthened the notion that enhancing job performance, particularly in inventive time and resource utilization, could result in a competitive advantage.

3.3 External Clients' Assessment of Satisfaction with the Services of PRIME-HRM

The external clients of the City Government of Calamba were Very Satisfied (see Table 8). The indicator "The City Government of Calamba promptly addresses my inquiries and concerns" yielded the highest mean score of 3.82 and was interpreted as Very Satisfied. On the other hand, the indicator "The City Government of Calamba delivers services as effectively and efficiently as promised" received the lowest mean score of responses with 3.71 and was also interpreted as Very Satisfied.

This implies that the clients of the City Government of Calamba are highly satisfied with the government's prompt and attentive approach to meeting their requirements. This demonstrates a dedication to providing exceptional customer service, with the government immediately addressing client requests and complaints, cultivating a favorable relationship with the community. However, the lowest mean score for delivering services as promised is still inside the Highly Satisfied level, indicating areas that may require adjustment. This implies that although clients are generally quite satisfied, there may be room for improving the effectiveness and efficiency of service delivery. To address this aspect, it may be necessary to streamline service operations, optimize resource allocation, or enhance communication around service expectations.

Table 8. Client satisfaction of the City Government of Calamba as assessed by the external clients

	INDICATORS	MEAN	INTERPRETATION
1	The City Government of Calamba promptly addresses my inquiries and concerns.	3.82	VS
2	The City Government of Calamba is proactive in addressing issues raised by clients.	3.78	VS
3	The City Government of Calamba provided timely responses when constituents reached out to them.	3.78	VS
4	The services provided by the City Government of Calamba are consistently dependable.	3.77	VS
5	The City Government of Calamba delivers services as effectively and efficiently as promised.	3.71	VS
6	The facilities provided by the City Government of Calamba are user-friendly.	3.72	VS
7	The facilities provided by the City Government of Calamba are well-maintained.	3.77	VS
8	The City Government of Calamba effectively delivers important information regarding its services.	3.79	VS
9	The City Government of Calamba provided clear and concise communication.	3.75	VS
10	The City Government of Calamba uses multiple channels like Facebook, Twitter, and other social media to keep clients informed about its services.	3.76	VS
11	The fees associated with the services provided by the City Government of Calamba are reasonable.	3.72	VS
12	The City Government of Calamba operates with transparency and honesty	3.78	VS
13	The City Government of Calamba assures the service that I availed.	3.75	VS
14	The City Government of Calamba delivers the desired results for its clients.	3.72	VS
15	The City Government of Calamba delivers services that fully satisfy its clients.	3.76	VS
16	The services provided by the City Government of Calamba can be recommended to others.	3.77	VS
17	The services offered by the City Government of Calamba can still be continuously used by the citizens.	3.81	VS
OVERALL ASSESSMENT		3.76	VS

Note: 3.25-4.00 Very Satisfactory (VS) 2.50-3.24 Satisfactory (S) 1.75-2.49 Fair (F) 1.00-1.74 Poor (P)

Based on a study by Lei et al. (2022), the relationship between service quality and customer satisfaction in express logistics suggested that service quality was the most crucial element influencing customer satisfaction. Furthermore, Qiyuan's (2022) study supported this by indicating that service quality substantially influenced customer satisfaction, with perceived quality being the most critical component based on the theoretical basis of customer satisfaction and express service. Companies that provided services relied on delivering high-quality services to attract and retain customers, gained a competitive advantage, and increased long-term profitability.

Service quality has been intensively studied for numerous years in diverse sectors, including banking, education, credit cards, and telecommunications. A study conducted by Afthanorhan et al. (2019) revealed that each aspect of service quality, including dependability, responsiveness, competence, understanding, courtesy, communication, access, security, credibility, and tangibility, played a crucial role in determining customer satisfaction.

3.4 Relationship between PRIME-HRM Implementation and Work Performance Level

As shown in Table 9, there is a significant relationship between the level of PRIME-HRM implementation and the level of Work Performance done using the Pearson Product Moment Correlation Coefficient (r) application. The computed R-values of 0.395, 0.348, 0.409, 0.446, 0.578, 0.408, 0.489, 0.487, 0.305, 0.467, 0.446, and 0.434, in terms of recruitment, performance management, learning and development and rewards and recognition, respectively and the p-value of 0.000, less than the significant level of 0.01 indicates a strong relationship between the stated variables as assessed by the frontline employees. The R-values are between 0.30 and 0.49, which was interpreted as a moderately positive correlation, while performance related to efficiency had an r-value of .578, which was interpreted as a high positive correlation. This result led to the rejection of the stated null hypothesis that there was no significant relationship between the level of implementation of PRIME-HRM and the work performance of the City Government of Calamba employees.

Table 9. Result of the test of the significant relationship between the PRIME-HRM implementation and work performance level

DIMENSIONS	WORK PERFORMANCE	R-VALUE	P-VALUE	REMARKS	DECISION
Recruitment, Selection, and Placement	Quality	.395**	0.00	Significant	Reject Ho
	Efficiency	.348**	0.00	Significant	Reject Ho
	Timeliness	.409**	0.00	Significant	Reject Ho
Performance Management	Quality	.446**	0.00	Significant	Reject Ho
	Efficiency	.578**	0.00	Significant	Reject Ho
	Timeliness	.408**	0.00	Significant	Reject Ho
Learning and Development	Quality	.489**	0.00	Significant	Reject Ho
	Efficiency	.487**	0.00	Significant	Reject Ho
	Timeliness	.305**	0.00	Significant	Reject Ho
Rewards and Recognition	Quality	.467**	0.00	Significant	Reject Ho
	Efficiency	.446**	0.00	Significant	Reject Ho
	Timeliness	.434**	0.00	Significant	Reject Ho

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

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

Essentially, these statistical findings confirm a strong and statistically significant correlation between the implementation of PRIME-HRM and the work performance of frontline employees in key areas such as recruitment, performance management, learning and development, and rewards and recognition. This highlights the effectiveness of PRIME-HRM techniques in positively impacting and strengthening the overall work performance of employees within the City Government of Calamba.

Anwar and Abdullah (2021) also found that the performance of an organization could be improved through the careful selection and implementation of HRM practices. The study aimed to identify new strategies that were applied to developing effective organizations. As it required more participation from the human resource management officer (HRMO), officials, and regular employees of the organization, PRIME-HRM offered a more progressive approach to assessment (Manaig & Olaso, 2021). One key finding of the study was that each department's goals and objectives must align with the corporate mission, goals, and strategies. Following aligning departmental and organizational goals and strategy, management and staff reviewed each job description. Every job description was customized to ensure that each employee's duties were understood and helped the department and organization achieve its goals. Employees involved in this process were better able to comprehend how their work affected the department and, ultimately, the corporation (Relativo et al., 2021).

3.5 Relationship between Clients' Satisfaction and Employees' Work Performance Level

Table 10. Result of the test of the significant relationship between the clients' satisfaction and work performance level

VARIABLES	R-VALUE	P-VALUE	REMARKS	DECISION
Quality	0.047	0.593	Not Significant	Accept Ho
Efficiency	0.107	0.219	Not Significant	Accept Ho
Timeliness	0.046	0.601	Not Significant	Accept Ho

There was no significant relationship between the level of work performance and the level of client satisfaction using the Pearson Product-Moment Coefficient of Correlation (r) application. The computed R-values of 0.047, 0.107, and 0.046, in terms of quality, efficiency, and timeliness, and p-values of 0.593, 0.219, and 0.601, which were greater than the significant level of 0.01 respectively, indicate no relationship between the level of work performance as assessed by frontline employees and client satisfaction as assessed by the client. This result led to the acceptance of the stated null hypothesis that there was no significant relationship between the level of work performance and the client satisfaction of the City Government of Calamba employees.

These statistical results essentially indicate no significant or statistically significant relationship between client satisfaction and the quality, efficiency, and timeliness of work performed as evaluated by the frontline employees. This implies that other factors beyond these dimensions of work performance might influence client satisfaction within the City Government of Calamba.

According to Tiihonen's (2019) study, the GAP and Kano models could explain customer satisfaction by identifying variables that lead to satisfaction and dissatisfaction. The GAP model identified factors that could result in client dissatisfaction at various process stages. In contrast, the Kano model suggested that customers valued the results rather than the skills of the staff. Willie's (2020) study emphasized the critical aspects of providing good customer service, including giving consumers high levels of information and updating them on benefits. The survey results indicated that clients were content with more material services. In contrast, elements of service quality that influenced customer satisfaction, such as value for money and distinctiveness of services, had lower scores but may exert influence in other circumstances.

4.0 Conclusion

Based on the salient findings of this study, the following conclusions were drawn:

- a. That the City Government of Calamba successfully integrated PRIME-HRM, including elements of HR management like recruiting, selection, placement, performance management, learning and development, and rewards and recognition. This shows the organization's exceptional commitment to HRM techniques and precise and effective workforce management.
- b. That the work performance of the City Government of Calamba has a high level of operational excellence. This interpretation reflects the diligent efforts of the workforce to consistently achieve high levels of performance, fostered by a positive and productive work environment within the organization.
- c. That clients' positive reactions validate the efficacy of services offered by the City Government of Calamba. This interpretation demonstrates how well the services are tailored to meet the needs of its clients, which shows how well their demands were met.
- d. That there's a substantial correlation between the adoption of PRIME-HRM practices and the enhanced work performance of frontline employees across various dimensions, including recruitment, performance management, learning and development, rewards and recognition, quality, efficiency, and timeliness. This underscores the effectiveness of PRIME-HRM in improving various aspects of employee performance within organizations.
- e. That various factors influence client satisfaction beyond mere work performance, including communication effectiveness, prompt resolution of inquiries, service accessibility, convenience, outcomes, cost-effectiveness, and the city government's flexibility in meeting diverse client needs. This nuanced interplay underscores the need for a holistic approach to enhance overall client satisfaction, recognizing that service quality is just one component within a broader satisfaction framework.
- f. That emphasizing the need for a comprehensive action plan to address specific development areas will be implemented. The proposed action plan incorporates strategies and activities to strengthen PRIME-HRM implementation to boost employee performance and client satisfaction. This plan is crucial for improving performance, customer satisfaction, and HRM practices' long-term viability in the growing City Government of Calamba.

The findings and conclusions of this study prompted the researcher to reflect on the following suggestions.

- a. The City Government of Calamba may establish periodic oversight committees to help strengthen and maintain the quality and effectiveness of the PRIME-HRM program. These key HR professionals and stakeholders will review the program regularly, align it with HR development trends, CSC guidelines, local government committee's activities, and strategies, and promptly make appropriate adjustments based on the committee findings.
- b. The City Government of Calamba may prioritize Performance Monitoring and Evaluation (PME). They may establish clear goals aligned with organizational priorities and implement a transparent PME system with regular assessments and feedback. They may provide constructive feedback for skill improvement and foster a culture of accountability. The City Government of Calamba can set up a feedback mechanism, such as surveys or suggestion boxes, to gather constituent input. This feedback not only aids continuous improvement but also serves as valuable input for supervisors assessing and guiding employees.
- c. The City Government of Calamba may prioritize adopting modern systems and software, ensuring seamless integration and user-friendly interfaces. They may prioritize cybersecurity measures to safeguard sensitive data and enable mobile accessibility for flexibility. Additionally, they may integrate data analytics tools to facilitate informed decision-making. This holistic approach to technology and tools will streamline processes,

reduce administrative burdens, and create an environment conducive to increased efficiency in government operations.

- d. The City Government of Calamba may emphasize specialized training programs for frontline employees to ensure they possess specific skills and attributes like communication skills, innovation, continuous improvement, technology-related skills, and complex problem-solving. Training focuses on HR recruitment, performance management, motivation, and recognition can improve employee skills and increase productivity and performance in terms of quality, efficiency, and timeliness in the long term.
- e. The City Government of Calamba may conduct in-depth client interviews and qualitative research. This knowledge can help develop strategies to improve efficiency and meet client expectations, assuring satisfaction. The City Government may implement a comprehensive Customer Engagement Strategy to improve customer satisfaction. This plan might include personal contact, community outreach, client-centered program delivery, and process streamlining. A comprehensive strategy meets all client requirements, not just performance, resulting in long-term satisfaction.
- f. Future researchers may conduct extensive longitudinal studies examining changes over time and conveying findings concerning PRIME-HRM to stakeholders and clients to obtain deeper insights into the impact of HRM practices on performance.

5.0 Contributions of Authors

The sole author initiated and completed this study.

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7.0 Conflict of Interests

The author declares no conflict of interest.

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9.0 References

- Afthanorhan, A., Awang, Z., Rashid, N., Foziah, H., & Ghazali, P. L. (2019). Assessing the effects of service quality on customer satisfaction. *Management Science Letters*, 13–24. <https://doi.org/10.5267/j.msl.2018.11.004>
- Andal, M. J. (2021). Human Resource Proficiency Indicators in Agencies. *Batangas State Journals*, 50-62.
- Anwar, G., & Abdullah, N. N. (2021). The impact of Human resource management practice on Organizational performance. *International Journal of Engineering, Business and Management*, 5(1), 35–47. <https://doi.org/10.22161/ijebm.5.1.4>
- Barairo, M. G. (2021). Implementation and Quality of Gender-Responsive services in the Municipality of Los Baños, Laguna.
- Bhandari, P. (2021). Quantitative research methods: A beginner's guide. Singapore: Springer Nature Singapore Pte Ltd.
- Bustamante, M. J., & Llamzon, A. K. (2022). Impact on retention: career development and succession to Gen Y and Millennial Generation. *Journal of Psychology Professionals*, 47-65.
- Camara, L. S. (2020). Employee assistance and human resource collaboration for improving employment. *Employee Assistance Quarterly*, 73-92.
- De Leon, B. A. (2021). The impact of employee development in ABC Company. *The college journal for government sciences*, 112-115.
- Elisa, M. (2020). The Influence of Work Motivation, Discipline, and Job Satisfaction on Employee Performance at the Population and Civil Registration Office in Batu Bara District. *Budapest International Research and Critics Institute (BIRCI-Journal) Humanities and Social Sciences*, 1-10.
- Fajota, N. E., & Bueno, D. C. (2019). Characteristics and Performance of the Department of Public Works and Highways' Employees in Zambales. *Institutional Multidisciplinary Research and Development Journal*. <https://doi.org/10.13140/RG.2.2.18003.43043>
- Fujita, H., & Alfanza, F. H. (2021). Organizational behavior and the quantity and quality of work group performance. *Journal of Management Development*, 149 – 155.
- Haerani, S. & Hakim, W. (2020). Structural Model of Developing Human Resources Performance: Empirical Study of Indonesia States Owned Enterprises. *Journal of Asian Finance, Economics and Business*, 211-221.
- Hiwatig, R. A. (2022). Productivity Enablers and Satisfaction on Job Performance among City Accounting and Internal Control office Employees of the City Government of Calamba.
- Kuswati, Y. (2020). The influence of organizational culture on employee performance. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 3(1), 296–302. <https://doi.org/10.33258/birci.v3i1.761>
- Lei, Z., Duan, H., Zhang, L., Ergu, D., & Liu, F. (2022). The main influencing factors of customer satisfaction and loyalty in city express delivery. *Frontiers in Psychology*, 13, 1044032. <https://doi.org/10.3389/fpsyg.2022.1044032>
- Manaig, E. M., & Olosa, D. (2021). Integration of PRIME-HRM to ABC Corporation. 81-90.

- Mero, N. P., Guidice, R. M., & Brownlee, A. L. (2007). Accountability in a performance appraisal context: The effect of audience and form of accounting on rater response and behavior. *Journal of Management*, 33(2), 223–252. <https://doi.org/10.1177/0149206306297633>
- Mohajan, H. K. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and People*, 9(4). <https://doi.org/10.26458/jedep.v9i4.679>
- Niati, D. R., Siregar, Z. M. E., & Prayoga, Y. (2021). The effect of training on work performance and career development: The role of motivation as intervening variable. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 4(2), 2385–2393. <https://doi.org/10.33258/birci.v4i2.1940>
- Pesarillo, M. C. (2020). Strategic Performance Management System to the City Government Employees of Laguna: Basis on an Enhanced Individual Development Plan.
- Pulakos, E. D. (2020). Performance management: A roadmap for developing, implementing and evaluating performance management systems. Society for Human Resource Management Foundation.
- Qiyuan, S. (2022). Research on the influencing factors of customer satisfaction in express delivery service. doi:10.19995/j.cnki.CN10-1617/F7.2022.01.065
- Relativo, K., Frayne, C., & Guralnik, O. (2021). Self-management training for improving job performance: A field experiment involving agencies. 129-135.
- Salas, E., Weaver, S. J., Rosen, M. A., & Smith-Jentsch, K. A. (2009). Managing team performance in complex settings: Research-based best practices. In J. W. Smither & M. London (Eds.), *Performance management: Putting research into action* (pp. 197–232). Jossey-Bass/Wiley.
- Daniel, A., Sanda, A.A., & Midala, A.S. (2014). Recruitment, Selection and Placement of Human Resource in Adult Education Organisation: Implications for the Management of Adult Education Borno State Nigeria. *Journal of Education and Practice*, 5, 64-68.
- Sarnthoy, P. (2019). The role of human resource management practices in promoting good governance in the thai civil service. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.3459359>
- Silan, L. M. (2019). Human Resource Management Practices at the Provincial Governemnt of Laguna.
- Stephen, E. G. ., Cinjel, D. N. ., Apikins, M. W. ., & Samuel, I. A. . (2019). Recruitment, Selection and Placement of Human Resource in International Civil Service Commission. *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, 48(4), 188–200. Retrieved from <https://www.gssrr.org/index.php/JournalOfBasicAndApplied/article/view/9355>
- Tiihonen, E. (2019). Is There a Correlation Between Employee Satisfaction and Customer Satisfaction? 18-19.
- Willie, M. M. (2020). Investigating factors affecting customer satisfaction and its impact on organisational performance at multinum, gauteng. <https://doi.org/10.13140/RG.2.2.35797.96488>

User Experience (UX) Components of Mobile Wallets Influencing the Post-adoption Behavior of Millennials in the National Capital Region (NCR) of the Philippines

Arielle M. Alejandrino*, Alfierie L. Baldivas, Antonio E. Etrata Jr.,

Naomi Grace L. Hipolito, Chelsea Ayesha P. Mercado

College of Commerce and Business Administration, University of Santo Tomas, Manila, Philippines

*Corresponding Author Email: ariellealejandrino@gmail.com

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Abstract. The rapid growth and development of the Internet have changed how people use technology and commerce. Although mobile wallets have become increasingly popular, there is still a lack of research regarding the future viability of the market's adoption of mobile wallets in light of potential risks and emerging alternative concepts. With this, this research investigated how millennials' post-adoption behavior is influenced by the user experience (UX) components in mobile wallet applications, focusing on Filipino millennials. This quantitative study used a descriptive correlational research design to survey 200 regional-based millennials from a population of 1,383,672 mobile wallet users. This study addressed this gap by identifying six vital UX components: aesthetic appeal, security and reliability, ease of use, convenience, information accuracy, and speed and efficiency. Data collection involved an online questionnaire on digital platforms, ensuring data reliability through rigorous testing. Advanced statistical tools, including regression analysis and Partial Least Squares Structural Equation Modeling (PLS-SEM), were utilized for analysis. Despite recognizing the positive contribution of the other components in influencing post-adoption, results have shown that only two, security and reliability and ease of use, of the six identified UX components significantly influence Millennial users' post-adoption behavior towards mobile wallet applications. This result may align with the subject's primary purpose, usage, and motivation, as well as the direct influence of the components on trust, daily utility, risk reduction, competitiveness, regulatory adherence, and user preference adaptation.

Keywords: Mobile wallet; Millennials; User Experience; Post-adoption behavior.

1.0 Introduction

The growth of e-commerce and cashless payments necessitated businesses to adapt to market changes by enhancing their business and marketing strategies through offering mobile wallet solutions (Al-Alawi et al., 2021; Walker, 2019). Millennials, identified as the most significant consumer group (Mcgrath & Rodgers, 2023), had significantly adopted mobile payment solutions (Mun et al., 2017). Mobile wallet adoption had been thoroughly studied in various fields; however, millennials' user experience and post-adoption of mobile wallets were understudied (Gupta et al., 2020). Therefore, this study gathered significant information on the UX components of local mobile wallets that greatly influenced the selected target audience's post-adoption of mobile wallet applications.

Millennials, as the "Digital Generation," had been increasing their use and number of transactions with mobile wallet applications (Parveen & Vanaja, 2019; Jain et al., 2021). This made User Experience (UX) in mobile

applications vital in assessing user behavior and satisfaction (Deng et al., 2010; Lee et al., 2015), thus making it a competitive advantage for businesses. Mobile wallets were comprised of various UX components, and prior research highlighted the importance of aesthetics, security, ease of use, convenience, information accuracy, and speed & efficiency in influencing the UX in mobile wallets (Abbasi et al., 2022; Mukhtisar et al., 2021; Aydin & Burnaz, 2016; Mew and Milan, 2021; Roozbahani et al., 2015).

This study endeavored to determine the influence of the identified UX components on millennials' post-adoption behavior. It sought to contribute to the body of knowledge surrounding mobile wallets, UX, and post-adoption behavior of millennials. The findings held significant implications for various industries, informing the optimization of mobile wallet offerings and user experiences.

2.0 Methodology

2.1 Research Design

This study used a quantitative descriptive-correlational design to examine the connection between six user experience (UX) components (independent variables) and millennial mobile wallet users' post-adoption behavior (dependent variable). This non-experimental design, as described by Salkind (2010), measures and explains relationships without manipulating variables. The quantitative approach allows for objective statistical analysis to identify potential correlations and patterns between the UX components and post-adoption behavior.

2.2 Research Locale

The study focused on millennials (born 1981-1996) living in the National Capital Region (NCR) who actively use mobile wallets. Millennials' preference for technology makes them a relevant demographic for understanding user experience (UX) in mobile wallets. Their perspective is valuable in determining the key UX component that influences continued usage and expansion of mobile wallets.

2.3 Research Participants

The study was conducted online using an online survey instrument to reach a broader audience and ensure accessibility for both researchers and participants. Purposive sampling, a non-probability technique, was used to select participants based on the study's criteria. This included Filipino millennials who currently have a verified mobile wallet account. Considering that a significant portion of Filipino millennials use mobile payments (Nielsen, 2016), the target population was estimated at 1,383,672 users of top local mobile wallet applications (PSA, 2020). Using a sample size calculator, the minimum sample size was determined to be 187 respondents. However, to ensure higher accuracy, the researchers collected data from 200 participants.

2.4 Research Instrument

The study used a closed-ended, structured online survey instrument developed based on a literature review. The survey included multi-scale items measured on a 4-point Likert scale and captured demographic data, user experience (UX) component satisfaction, customer satisfaction (CSAT), Net Promoter Score (NPS), and behavioral patterns. To ensure validity and reliability, evaluators assessed the constructs and a pilot test was conducted before distribution. Screener questions ensured participant eligibility for the target population of millennial mobile wallet users in the NCR.

2.5 Data Gathering Procedure

First, a survey was developed to target millennials in the NCR who actively use mobile wallets. The survey screened participants to ensure eligibility. Second, the survey collected relevant respondent information and data on their current mobile wallet usage behavior. Third, it used a 4-point Likert scale to evaluate UX factors influencing their post-adoption behavior. Finally, user satisfaction was measured using CSAT and NPS for additional information on millennials' post-adoption behavior.

2.6 Ethical Considerations

The study ensured ethical conduct by adhering to confidentiality and anonymity standards, addressing participant concerns, and obtaining informed consent through a non-disclosure agreement compliant with the Data Privacy Act (R.A. 10173). The survey clearly explained the study and participant rights, protecting their privacy throughout the research process.

3.0 Results and Discussion

The research results offer nuanced insights into the post-adoption behavior of employed females aged 27 to 29 within the Millennial generation, as outlined in the respondent profile. Despite the diverse academic and occupational backgrounds of these users, majority of the respondents determined that only two out of the six studied UX components, aesthetic appeal, security and reliability, ease of use, convenience, information accuracy, and speed and efficiency, of a mobile wallet to be influential in their post-adoption behaviors.

Table 1. Demographic profile of respondents

CATEGORY	FREQUENCY	PERCENTAGE
Gender		
Female	141	70.4
Male	51	25.5
Prefer not to say	8	4
Age		
27-29	144	72
30 - 32	21	10.5
33 - 35	0	0
36 - 39	19	9.5
40 - 42	16	8
Area of Residence		
Caloocan	14	7
Las Piñas	7	3.5
Makati	34	17
Malabon	5	2.5
Mandaluyong	9	4.5
Manila	0	0
Marikina	8	4
Muntinlupa	2	1
Navotas	1	0.5
Parañaque	6	3
Pasay	12	6
Pasig	17	8.5
Quezon City	51	25.2
San Juan	7	3.5
Taguig	12	6
Valenzuela	15	7.5
Occupation		
Employed	128	64
Homemaker	3	1.5
Self-employed	46	23
Unable to work	3	1.5
Underemployed	2	1
Unemployed	18	9
Field of Study/Profession		
Arts, Entertainment, Fashion, Media, Sports, & Recreation	12	6
Aviation	3	1.5
Business, Finance, and Economics	47	23.5
Civil Service, Government, & Law Enforcement	9	4.5
Construction	4	2
Education	25	12.5

Engineering & Architecture	18	9
Food and Beverage	14	7
Leisure & Hospitality	4	2
Manufacturing	4	2
Medical & Pharmaceutical	21	10.5
Not Applicable	23	11.5
Technology & Telecommunications	15	7.5
Trade, Transportation, & Utilities	1	0.5
Source of Funds		
Allowance	28	14
Bills Payment	1	0.5
Commissions	1	0.5
Income from self-employment	24	12
Investments	7	3.5
Passive Income	9	4.5
Salary of live in partner	1	0.5
Salary/Wages	91	45.5
Savings	38	19
Monthly Income		
Below Php 18, 200	83	41.5
Php 18,201 - Php 36,400	70	35
Php 36,401 - Php 63,700	31	15.5
Php 63,701 - Php 109,200	8	4
Php 109, 201 - Above	8	4

Table 2 presents the parameter estimates and outcomes for the proposed relationships SEM results revealed that only two components of User Experience (UX) of mobile wallets have significant influence to post adoption behavior. Specifically, security and reliability ($\beta = 0.207$, $p < 0.001$) with small effect size ($f^2 = 0.071$) as well as ease of use ($\beta = 0.124$, $p = 0.037$) with small effect size ($f^2 = 0.260$) also have significant influence to post adoption behavior. Other components of UX such as aesthetic, convenience, information accuracy, and speed and efficiency have no significant influence on post adoption behavior.

Components, such as security and reliability, and ease of use, resulted in being the one with a significant component that influences post-adoption behavior and, consequently, shapes a positive user experience. Results agrees with the findings by Kahar et al. (2019), Li et al. (2014). Ease of use is shown to be the component that strongly influences one's post-adoption behavior, suggesting the importance of having a simple and intuitive user interface (Abdul-Halim et al., 2021). It is essential to ensure that the mobile wallet application is intuitive, simple to navigate, and requires minimal effort to foster a positive user experience and continued use (Abdul-Halim et al., (2021); Shang & Wu, 2017); Leong, 2020). The components' security and reliability significantly impact one's user perception and post-adoption behavior. Users emphasize the importance of robust safety precautions, thoroughly discussing security procedures, and consistently operating to provide users with a sense of security. In addition, users place exceptional value on reliable and trustworthy systems that safeguard their transactions and financial data. The findings highlight the impact of a safe and dependable platform in building user confidence and how much it influences their whole mobile wallet experience. Furthermore, mobile wallet users' continued usage and expansion are significantly influenced by components like user-friendliness, as it enhances their overall experience.

Table 2. Relationship of Variables

INDEPENDENT →	DEPENDENT VARIABLES	PATH COEFFICIENT	P-VALUE	SE	EFFECT SIZE
H1	Aesthetic → Post Adoption Behavior	0.055	0.218	0.070	0.013
H2	Security & Reliability → Post Adoption Behavior	0.207	<0.001	0.068	0.071
H3	Ease of Use → Post Adoption Behavior	0.124	0.037	0.069	0.041
H4	Convenience → Post Adoption Behavior	0.048	0.248	0.070	0.015
H5	Information Accuracy → Post Adoption Behavior	0.024	0.369	0.070	0.007
H6	Speed & Efficiency → Post Adoption Behavior	0.072	0.152	0.070	0.022

Note: Cohen's effect size: 0.02 = small, 0.15 = moderate, 0.35 = large; β = path-coefficient

However, components such as aesthetics, convenience, accuracy of the information, speed, and efficiency showed a non-significant relationship with users' post-adoption behavior, suggesting that these may not be the primary component that influences the users but still contribute to the user's overall experience (Bhandari et al., 2017; Wahyudi and Pambudi, 2022; Koghut & Ai-Tabbaa, 2021; Alam et al., 2021)

4.0 Conclusion

This study significantly advances the field of mobile wallet research by shifting the focus from initial adoption to understanding user behavior after adoption. By examining how user experience (UX) components influence Filipino millennials' continued use of mobile wallets, it offers valuable insights previously lacking. The identification of six key UX components (security, ease of use, aesthetics, convenience, information accuracy, and speed) and their varying impact on post-adoption behavior provides a crucial foundation for understanding user preferences. This knowledge is particularly important for FinTech companies, developers, and investors who can leverage these findings to develop and refine mobile wallet applications that prioritize user satisfaction and retention.

The study also highlights the importance of security, reliability, and ease of use as primary drivers for millennials. This suggests that prioritizing functionality, robust security measures, and user-friendly interfaces are essential for long-term success. Additionally, the high user satisfaction observed may indicate heightened expectations, prompting the need for continuous innovation and proactive strategies to address potential concerns. This focus on user experience will be crucial for ensuring continued adoption and user engagement within the thriving FinTech ecosystem.

This research establishes a strong foundation for future studies. The identified UX components serve as a springboard for further exploration. Future research could compare user preferences across demographics or geographic regions to gain a more nuanced understanding of user behavior. Furthermore, investigating the influence of emerging technologies like blockchain on mobile wallet UX could provide valuable insights for the future of FinTech. By understanding how millennials interact with mobile wallets and how their preferences evolve, stakeholders can develop and implement effective strategies to ensure continued user satisfaction and a thriving FinTech ecosystem.

5.0 Contributions of Authors

The successful completion of this research is attributed to the distinct contributions of each author. Arielle Alejandrino demonstrably enriched the manuscript through meticulous data analysis, crafting the Results and Discussion sections, and offering insightful revisions. Alfierie L. Baldivas played a pivotal role in establishing the research framework by outlining the Methodology and crafting the Conclusion. Mr. Antonio E. Etrata Jr. Ph.S., as the thesis advisor, provided invaluable guidance and oversight throughout the research process, ensuring its successful execution. Naomi Hipolito laid the foundation for the research by establishing the context within a well-researched Introduction. Finally, Chelsea Mercado's contribution involved a comprehensive and critical review of the existing literature relevant to the chosen field of study.

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This work received no specific grant from any funding agency. This work stands as a testament to the dedication of the student researchers involved. It was conducted entirely on their own initiative, receiving no specific grant from any funding agency. Despite the lack of external financial support, the student researchers persevered. They leveraged their own resources and sought out creative solutions to overcome funding limitations. This project exemplifies the passion and resourcefulness of the student researchers, who were determined to contribute to the field of knowledge in their chosen area.

7.0 Conflict of Interests

While this research gathers information on the UX components in mobile wallets, a potential conflict of interest is not readily apparent. The research design focuses on general UX factors influencing millennial behavior, rather than advocating for a particular mobile wallet application. Additionally, there is no disclosure of financial ties between the researchers and the mobile wallet industry. Nevertheless, for enhanced transparency, a declaration outlining any potential biases would be a valuable addition to the study.

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9.0 References

- Abbasi, G. A., Sandran, T., Ganesan, Y., & Iranmanesh, M. (2022). Go cashless! determinants of continuance intention to use E-wallet apps: A hybrid approach using PLS- SEM and fsQCA. *Technology in Society*, 68, 101937. <https://doi.org/10.1016/j.techsoc.2022.101937>
- Al-Alawi, A. I., Al-Hammam, A. H., Al-Alawi, S. S., & AlAlawi, E. I. (2021). The adoption of e-wallets. *Innovative Strategies for Implementing FinTech in Banking*, 242– 262. <https://doi.org/10.4018/978-1-7998-3257-7.ch015>
- Alam, M. M., Awawdeh, A. E., & Muhamad, A. I. (2021). Using e-wallet for business process development: challenges and prospects in Malaysia. *Business Process Management Journal*, 27(4), 1142–1162. <https://doi.org/10.1108/bpmj-11-2020-0528>
- Al-Emran, M., Mezhyuev, V., & Kamaludin, A. (2020, May). Towards a conceptual model for examining the impact of knowledge management factors on mobile learning acceptance. *Technology in Society*, 61, 101247. <https://doi.org/10.1016/j.techsoc.2020.101247>
- Anubhav, M., and S. Anuja. (2020). Psychological determinants of consumer's usage, satisfaction, and word-of-mouth recommendations toward smart voice assistants. *FIP Advances in Information and Communication Technology*. https://doi.org/10.1007/978-3-030-64849-7_24.
- Aydin, G., & Burnaz, S. (2016). Adoption of mobile payment systems: A study on mobile wallets. *Pressacademia*, 5(1), 73–73. <https://doi.org/10.17261/pressacademia.2016116555>
- Chang, Y.-W., & Polonsky, M. J. (2012). The influence of multiple types of service convenience on behavioral intentions: The mediating role of consumer satisfaction in a Taiwanese leisure setting. *International Journal of Hospitality Management*, 31, 107–118. <https://doi.org/10.1016/j.ijhm.2011.05.003>
- Chen, L., & Aklilikou, A. K. (2019). Determinants of E-government adoption: Testing the mediating effects of perceived usefulness and perceived ease of use. *International Journal of Public Administration*, 43(10), 850–865. <https://doi.org/10.1080/01900692.2019.1660989>
- Deng, L., Turner, D. E., Gehling, R., & Prince, B. (2010). User experience, satisfaction, and continual usage intention of IT. *European Journal of Information Systems*, 19(1), 60– 75. <https://doi.org/10.1057/ejis.2009.50>
- Gupta, A., Yousaf, A., & Mishra, A. (2020). How pre-adoption expectancies shape post- adoption continuance intentions: An extended expectation-confirmation model. *International Journal of Information Management*, 52, 102094. <https://doi.org/10.1016/j.ijinfomgt.2020.102094>
- IxDF. (2021, November 5). What is aesthetics?. The Interaction Design Foundation. <https://www.interaction-design.org/literature/topics/aesthetics#:~:text=In%20visual%20terms%2C%20aesthetics%20includes,putting%20form%20and%20content%20together.>
- Jain, A., Joshi, N., & Mayee, A. (2021). Millennial's tide over the COVID-19 crises: buying behavior of indian millennial's post-covid 19 crises. *Jindal Journal of Business Research*. DOI: 10.1177/22786821211045196
- Kahar, A., Wardi, Y., & Patrisia, D. (2019). The influence of perceived of usefulness, perceived ease of use, and perceived security on repurchase intention at tokopedia.com. *Proceedings of the 2nd Padang International Conference on Education, Economics, Business and Accounting*. <https://doi.org/10.2991/piceeba2-18.2019.20>
- Kar, A. K. (2020). What affects usage satisfaction in mobile payments? modelling user generated content to develop the “Digital Service Usage Satisfaction Model.” *Information Systems Frontiers*, 23(5), 1341–1361. <https://doi.org/10.1007/s10796-020-10045-0>
- Kim, C., Tao, W., Shin, N., & Kim, K.-S. (2010). An empirical study of customers' perceptions of security and trust in e-payment systems. *Electronic Commerce Research and Applications*, 9(1), 84–95. <https://doi.org/10.1016/j.elerap.2009.04.014>
- Koghut, M., & Al-Tabbaa, O. (2021). Exploring consumers' discontinuance intention of remote mobile payments during post-adoption usage: An empirical study. *Administrative Sciences*, 11(1), 18. <https://doi.org/10.3390/admsci11010018>
- Kumar, R., Sachan, A., & Kumar, R. (2020). Impact of service delivery system process and moderating effect of perceived value in internet banking adoption. *Australasian Journal of Information Systems*, 24. <https://doi.org/10.3127/ajis.v24i0.1923>
- Lee, C., Tsao, C., & Chang, W. (2015). The relationship between attitude toward using and customer satisfaction with mobile application services. *Journal of Enterprise Information Management*, 28(5), 680–697. <https://doi.org/10.1108/jeim-07-2014-0077>
- Leong, L.-Y., Hew, T.-S., Ooi, K.-B., & Wei, J. (2020). Predicting mobile wallet resistance: A two-staged structural equation modeling-artificial neural network approach. *International Journal of Information Management*, 51, 102047. <https://doi.org/10.1016/j.ijinfomgt.2019.102047>
- Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz- Leiva, F. (2014). Antecedents of the adoption of the new mobile payment systems: The moderating effect of age. *Computers in Human Behavior*, 35, 464–478. <https://doi.org/10.1016/j.chb.2014.03.022>
- Liu, Z., Ben, S., & Zhang, R. (2019). Factors affecting consumers' mobile payment behavior: a meta-analysis. *Electronic Commerce Research*, 19(3), 575–601. <https://doi.org/10.1007/s10660-019-09349-4>
- Mcgrath, L., & Rodgers, C. (2023, July 13). New consumer segmentation: Meet the stand for more generation.
- Mew, J., & Millan, E. (2021). Mobile wallets: key drivers and deterrents of consumers' intention to adopt. *Research Gate*, 31(2), 182–210. <https://doi.org/10.1080/09593969.2021.1879208>

- Moghavvemi, S., Mei, T. X., Phoong, S. W., & Phoong, S. Y. (2021). Drivers and barriers of mobile payment adoption: Malaysian merchants' perspective. *Journal of Retailing and Consumer Services*, 59, 102364. <https://doi.org/10.1016/j.jretconser.2020.102364>
- Mukhtisar, M., Tarigan, I. R., & Evriyenni, E. (2021). Pengaruh EFISIENSI, Keamanan Dan Kemudahan terhadap minat nasabah bertransaksi menggunakan mobile banking (Studi Pada Nasabah Bank syariah mandiri Ulee Kareng Banda Aceh). *Jihbiz: Global Journal of Islamic Banking and Finance*, 3(1), 56. <https://doi.org/10.22373/jihbiz.v3i1.9632>
- Mun, Y. P., Khalid, H., & Nadarajah, D. (2017). Millennials' perception on Mobile Payment Services in Malaysia. *Procedia Computer Science*, 124, 397–404. <https://doi.org/10.1016/j.procs.2017.12.170>
- Nielsen. (2016). Mobile money. Nielsen Global. <https://www.nielsen.com/wp-content/uploads/sites/2/2019/04/nielsen-global-mobile-money-report-oct-2016-1.pdf>
- Nikolov, A. (2017). Design principle: Aesthetics. Medium. <https://uxdesign.cc/design-principle-aesthetics-af926f8f86fe>
- Parveen, S., & Vanaja, M. (2019). Changing the quality of teacher education with the perspective of Y-learners. *Journal of Information and Computational Science*. <https://manuu.edu.in/sites/default/files/Research-Publication/Education-Training/Y%20Learner.pdf>
- Phonthanukitithaworn, C., Sellitto, C. and Fong, M. (2015), "User intentions to adopt mobile payment services: a study of early adopters in Thailand", *Journal of Internet Banking and Commerce*, Vol. 20 No. 1, pp. 1-29. <https://vuir.vu.edu.au/31837/1/user-intentions-to-adopt-mobile-payment-services-a-study-of-early-adopters-in-thailand.pdf>
- Pikkarainen, T., Pikkarainen K., Karjaluoto, H., & Pahlila, S. (2004). Consumer acceptance of online banking: An extension of the technology acceptance model. *Internet Research*, 14(3), 224-235. <https://doi.org/10.1108/10662240410542652>
- Rahardja, U., Sigalingging, C. T., Putra, P. O., Nizar Hidayanto, A., & Phusavat, K. (2023). The impact of Mobile Payment Application Design and performance attributes on consumer emotions and continuance intention. *SAGE Open*, 13(1), 215824402311519. <https://doi.org/10.1177/21582440231151919>
- Rodrigues, C., Menon, A., Francis, J. G., & Hareesh, R. (2021). Digital Payments: India vs. China – An Empirical Study with the Help of TAM. *International Journal of Research in Engineering, Science and Management*, 4(10), 128–132. Retrieved from <https://journal.ijresm.com/index.php/ijresm/article/view/1456>
- Roobahani, F., Hojjati, S., & Azad, R. (2015, October 21). The Role of E-Payment Tools and E-Banking in Customer Satisfaction Case Study: Pasargad Bank E-Payment Company. Retrieved from *Int. J. Advanced Networking and Applications*
- Salkind, N. J. (2010). *Encyclopedia of research design* (Vols. 1 – 0). Thousand Oaks: SAGE Publications
- Shao, Z., Zhang, L., Li, X., & Guo, Y. (2019). Antecedents of trust and continuance intention in mobile payment platforms: The moderating effect of gender. *Electronic Commerce Research and Applications*, 33, 100823. <https://doi.org/10.1016/j.elerap.2018.100823>
- Sleiman, A., Juanli, L., Lei, H. Z., Rong, W., Yubo, W., Li, S., Cheng, J., & Amin, F. (2023). Factors that impacted mobile-payment adoption in China during the COVID-19 pandemic. *Heliyon*, 9(5). <https://doi.org/10.1016/j.heliyon.2023.e16197>
- Smolarczyk, A. (2018). Customer satisfaction with mobile payments (thesis). Aalto Publication Series, Espoo.
- Wahyudi R., & Pambudi D.S. (2022). Digital Zakat Payment: User Experience of Islamic Bank in Indonesia. *At-Taqaddum*, 14(2), 61–70. <https://journal.walisongo.ac.id/index.php/attaqaddum/article/view/14252/pdf>
- Walker, M. (2019, May 1). Reasons why your business should use mobile payments. *The Fintech Times*. <https://thefintechtimes.com/reasons-why-your-business-should-use-mobile-payments/>
- Weissman, A. (2012). Convenience: The third essential of a customer-centric business. Retrieved February 24, 2020, from UX Magazine website: <https://uxmag.com/articles/convenience>
- Yang, I. and Bahli, B. (2015), "Interplay of cognition and emotion in IS usage: Emotion as mediator between cognition and IS usage", *Journal of Enterprise Information Management*, Vol. 28 No. 3, pp. 363-376. <https://doi.org/10.1108/JEIM-12-2013-0092>
- Yuan, S., Liu, L., Su, B., & Zhang, H. (2020). Determining the antecedents of Mobile Payment Loyalty: Cognitive and affective perspectives. *Electronic Commerce Research and Applications*, 41, 100971. <https://doi.org/10.1016/j.elerap.2020.100971>
- Zhang, W., X.M. Leng, and S.Y. Liu. (2020). Research on mobile impulse purchase intention in the perspective of system users during COVID-19. *Personal and Ubiquitous Computing*. <https://doi.org/10.1007/s00779-020-01460-w>
- Zhou, T. (2013). An empirical examination of continuance intention of mobile payment services. *Decision Support Systems*, 54(2), 1085–1091. <https://doi.org/10.1016/j.dss.2012.10.034>

Attitude in Learning as a Mediator for Engagement and Academic Performance in Mathematics

Raymund E. Carcueva

Samal National High School, Island Garden City of Samal, Davao, Philippines

Author email: raymund.carcueva@deped.gov.ph

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Abstract. This study specifically focuses on mathematics, as it plays a crucial role in educational settings and is a fundamental subject for academic success. By examining the mediating effect of attitude on learning and its relationship with engagement, the research aims to understand how these variables contribute to academic performance in mathematics. The researcher used adapted survey questionnaires to collect information from 148 randomly selected respondents using the "Fishbowl Draw Method." Descriptive statistics, the Pearson product-moment correlation coefficient, and regression analysis were employed as statistical tools to analyze the data. These analyses indicated that students exhibited a high level of engagement, academic performance, and attitude toward learning mathematics. A significant relationship was found between student engagement and academic performance in mathematics, as well as between student engagement and attitude toward learning. However, the relationship between attitude toward learning and academic performance was not significant. Moreover, the impact of student engagement on academic performance was observed solely through its direct influence and not via an indirect effect stemming from attitudes toward learning. Accordingly, considering that attitude toward learning does not mediate the relationship between engagement and academic performance, students should focus on strengthening their classroom engagement to improve their academic performance. Future researchers are recommended to investigate other variables such as teaching methods and students' learning styles as mediators.

Keywords: Mathematics; Academic performance; Attitude in learning; Engagement.

1.0 Introduction

Poor academic performance in mathematics is a significant problem that affects students globally. It hinders their overall educational development and future opportunities. One of the key issues contributing to this problem is a lack of foundational understanding and conceptual clarity in mathematical concepts. Students may struggle to grasp fundamental principles, leading to difficulties in solving complex problems. Consequently, a negative attitude towards mathematics and fear of failure can further hinder motivation and engagement, worsening the problem of poor academic performance.

It is acknowledged that low-level academic performance is a global problem (ABD ALGANI & ESHAN, 2019). The inherent complexity of mathematics is universally recognized, and even students pursuing engineering often encounter challenges in comprehending it (Quezada, 2020). Poor academic performance contributes to low mood (Awadalla, Davies & Glazebrook, 2020). This poor performance of our learners in mathematics is not just a problem of education alone but our country as a whole (Philippine Business for Education (PBEd), 2023).

Meanwhile, in Zimbabwe, a case study presented proves that there is a low academic performance (Varaidzai Makondo & Makondo, 2020). In Kenya, a qualitative case study showed that learners generally do not perform

well in mathematics, leading to poor performance (Mabena, Mokgosi, & Ramapela, 2021). In Jordan, a survey showed that their persistent instances of below-average academic performance resulted in an unwillingness to engage in the students' learning process (Al-Zoubi, & Younes, 2015). In Thailand, despite the significant number of resources spent on education, a survey confirmed that students' learning outcomes in national examinations in mathematics are low and have not improved (Durongkaveroj, 2023). In Malaysia, Abd Rahman, Khalid, Ismail, Kamisan, Norrulashikin, and Hamdan (2022) reported in their study that the unsatisfactory results among students in mathematics have become quite a phenomenon. Moreover, in the United States, a journalist reported that students' average math scores declined by 13 points on the 2022 Program for International Student Assessment compared to those recorded before the pandemic (Modan, 2023).

Additionally, in the Philippines, according to the 2019 Trends in International Mathematics and Science Study (TIMSS), Filipino students faced difficulty in arithmetic and only 1% of Filipino learners had reached a high standard of mathematical comprehension (Bernardo, 2020). The Davao region received a lower average score than the national average of 353 points in the 2018 Programme for International Student Assessment on mathematical literacy, which puts it below level 1 on the proficiency scale (Schleicher, 2019). Consequently, Davao City's students' performance in Mathematics is very low (Galabo, Abellanosa, & Gempes, 2018).

Furthermore, there was an increase in mathematically underprepared students enrolling in undergraduate courses, leading to low pass rates in higher education (HE) institutes (Chand, Chaudhary, Prasad, & Chand, 2021). The workforce of the nation will eventually become weaker, and it will affect productivity and key source of our economic growth and competitiveness (Malipot, 2023). Furthermore, the researcher was motivated by this realization to investigate the intervening effect of attitude in learning on the relationship between academic performance and engagement in greater detail, as there hasn't been enough research done in this area. This is an urgent matter since the continuous falling results on the academic performance of students in mathematics are very widespread

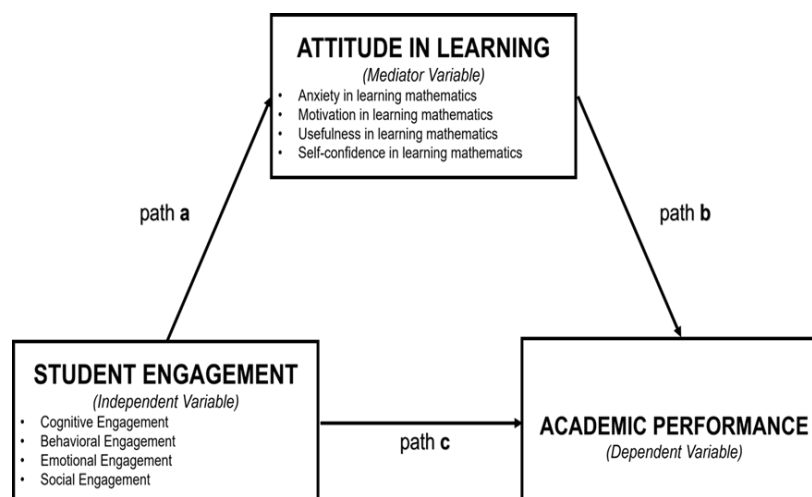


Figure 1. Conceptual framework of the study

2.0 Methodology

2.1 Research Design

The quantitative research design aimed to determine the intervening effect of attitude in learning on the correlation between engagement and academic performance by analyzing data from a wide selection of samples. Consequently, a quantitative approach was chosen. Correlational and descriptive research methods and path analysis were utilized to analyze the data further. The studied variables were student engagement as the independent variable, academic performance as the result or dependent variable, and student attitude in learning mathematics as the mediator between the two variables. Furthermore, a mediation analysis was employed to determine the effect of student attitude in learning on the relationship between student engagement and academic performance in mathematics. Mediation Analysis presumes that the independent variable impacts the mediator,

influencing the dependent variable (Abu-Bader, 2021). This study explored the relationship between the independent variable (engagement) and the outcome variable (academic performance) through the mediator variable (attitude in learning) by investigating its different effects.

2.2 Research Respondents

The study's respondents were taken from 236 students in one of the public high schools in Samal District. The sample consisted of male or female respondents, aged between 12 - 17, and enrolled as Grade 8 students during the 2022-2023 academic year. Moreover, the researcher considered the inclusion and exclusion criteria in the selection of respondents of the study. Using sample size determination to estimate the sampling size and to consider the 95% confidence levels and 5% margins of error, the researcher decided that 148 respondents are enough to acquire the required data. The researcher was aware that there may have been potential survey respondents who met the inclusion criteria yet possessed characteristics that could have been detrimental to the success of the research or increased the odds of an unfavorable outcome. This ensured that the researcher could obtain dependable and verifiable data, reduce the risk of harm to the target respondents, and protect them from being taken advantage of as vulnerable people.

2.3 Research Instruments

This study employed a three-part, adapted, and modified survey questionnaire as the primary research tool. The questionnaire included quantitative questions to gather specific responses from respondents about student engagement and attitude toward learning Mathematics. The adapted survey questionnaire comprises 25 items with four main components: anxiety, motivation, usefulness, and self-confidence about student attitudes in learning mathematics in Kasimu and Imoro's (2017) study. This adapted questionnaire is a five-point response item, ranging from 1 (Strongly disagree) to 5 (Strongly agree). This tool was designed to determine students' attitude level in learning mathematics through self-assessment.

Another adapted survey questionnaire comprises 26 items from the research questionnaire about Student Engagement conducted by Fredricks et al. (2016) with four main components: cognitive, behavioral, emotional, and social engagement. This instrument used a five-point response item ranging from 1 (Strongly disagree) to 5 (Strongly agree). This tool was designed to determine students' engagement levels through self-assessment.

The assessment of students' academic performance for the quarter was based on their grade in the fourth grading period of the academic year 2022 - 2023. The grading scale from the DepEd Order No. 8, 2015 was employed to interpret students' academic performance in Mathematics and will be interpreted from very low to very high. Furthermore, the grade, which is derived from the aggregate scores from diverse evaluations, serves as an indicator in this study (A. El Refae, Kaba & Eletter, 2021).

The survey questionnaire was validated by three (3) research experts in Mathematics and garnered a general average score of 4.67. The researcher administered the pilot test to fifteen (15) selected grade 8 students in one public school in the Island Garden City of Samal. Then, the result of the pilot test underwent reliability and validity tests administered by a data analyst. The result of the validity and reliability test of the adapted test questionnaires gave a general Cronbach's alpha internal level consistency value of 0.94, which was considered excellent (Bujang, Omar, & Baharum, 2018). There were no deleted test items in both adapted test questionnaires.

2.4 Data Gathering Procedure

The researcher distributed the survey questionnaire during the students' vacant periods. The selected classrooms provided for this purpose were adequately well-lit, well-ventilated, and furnished with enough armchairs for the respondents.

2.5 Ethical Considerations

This research study followed ethical guidelines. The respondents' participation was voluntary. They opted to dismiss themselves from answering the survey questionnaire at any point in time they felt uncomfortable. The researcher abided by the nine ethical considerations established by the Holy Cross of Davao College such as social value, informed consent and assent, risks, benefits and safety, privacy and confidentiality of information, justice, transparency, qualification of the researcher, adequacy of the facilities, and community involvement.

Furthermore, to ensure that this research is free from plagiarism from any plagiarism articles. The outcome of individual original work thus duly acknowledges all sources which the ideas and extracts have been taken in adherence to the law of Anti-Plagiarism.

2.6 Data Analysis Procedure

Mean. The mean was calculated by taking the sum of a set of integers and dividing it by the quantity of numbers in the series (Chen, 2021) to assess the level of student engagement, the level of attitude in learning, and the level of academic performance in mathematics.

Pearson's Product-Moment Correlation Coefficient. Pearson's correlation coefficient measured the strength of the relationship between two variables measured on the same interval or ratio scale (Kenton, 2022). This study utilized Pearson's product-moment correlation coefficient to investigate the relationship between student engagement and attitude in learning, attitude in learning and academic performance, and student engagement and academic performance in mathematics.

Mediation Analysis. In statistics, a mediation model was an analysis that aimed to discover the mechanism underlying an observed association between the independent and dependent variables (Baier, Kline, & Feeny, 2020). This technique was utilized to forecast the value of one variable based on the value of another. The study hypothesized that attitude in learning mediated the relationship between student engagement and academic performance. Hence, the use of mediation analysis was considered appropriate.

3.0 Results and Discussion

Table 1. Level of attitude in learning mathematics

INDICATORS	MEAN	SD	DESCRIPTIVE LEVEL
Anxiety	3.10	0.76	Moderate
Motivation	3.69	0.69	High
Usefulness	4.24	0.51	Very High
Self-Confidence	3.19	0.58	Moderate
Overall	3.55	0.36	High

Table 1 presents the level of attitude in learning in terms of anxiety, motivation, usefulness, and self-confidence among grade 8 students in Mathematics. Data revealed that the level of attitude in learning mathematics of grade 8 students is interpreted as high ($M = 3.26$, $SD = 0.36$). The results of the analysis show that the highest mean value is the indicator of usefulness ($M = 4.24$, $SD = 0.51$) measured on students' view on the importance of mathematics in their life and shows the value of mean interpretation very high and is always manifested compared to other indicators. On the contrary, the indicator of anxiety obtained the lowest mean ($M = 3.10$, $SD = 0.76$) which measured the feeling of unease, apprehension or fear that arises when a person is faced with mathematical task. In short, the high manifestation of attitude in learning mathematics of grade 8 students are affected by their usefulness, motivation, self-confidence rather than their anxiety. The mean value of all indicators is located between 3.10 and 4.24. Moreover, this positive attitude may encompass a strong interest in the subject, enthusiasm for mathematical challenges, and a willingness to engage actively in math-related activities.

This substantiates the idea of the authors, Davadas and Lay (2018), who noted that motivation, enjoyment, self-confidence, and usefulness in mathematics all contribute to developing individuals' attitudes toward the subject. This positive attitude towards mathematics dramatically influences one's ability to excel. Therefore, it is imperative to implement educational interventions to cultivate a positive attitude toward mathematics among students, as emphasized by Hwang and Son (2021). Additionally, achieving academic performance in mathematics education centers on students' perception of its usefulness, motivation, and self-confidence.

Table 2 presents the level of student engagement in terms of cognitive, behavioral, emotional, and social engagement among grade 8 students in Mathematics. Data revealed that the level of student engagement in mathematics of grade 8 students is interpreted as high ($M = 3.85$, $SD = 0.42$). The results of the analysis show that the highest mean value is the indicator of emotional ($M = 3.95$, $SD = 0.59$) measured the students' positive emotions when doing school-related activities and is interpreted as high level and is often manifested. On the contrary, the

indicator cognitive engagement mean value ($M = 3.81$, $SD = 0.44$) measured the active and meaningful mental processes that student engages in when learning mathematical concepts and the indicator behavioral engagement mean value ($M = 3.81$, $SD = 0.54$) which measures the observable expression of students' involvement in their educational activities. These indicators have the lowest mean values and are still interpreted as high. In short, the grade 8 students have a high level of engagement in learning mathematics. The mean value of student engagement is located between 3.81 and 3.95.

Table 2. Summary of the level of student engagement in learning mathematics

INDICATORS	MEAN	SD	DESCRIPTIVE LEVEL
Cognitive Engagement	3.81	0.44	High
Behavioral Engagement	3.81	0.54	High
Emotional Engagement	3.95	0.59	High
Social Engagement	3.83	0.56	High
Overall	3.85	0.42	High

This finding supports the research conducted by Delfino (2019), which established a connection between academic performance and the three aspects of student engagement, namely, behavioral, emotional, and cognitive engagement. This discovery reinforces that those students actively involved in their learning process, in terms of their behavior, emotions, and cognitive efforts, tend to perform better academically. Moreover, teacher-student interactions play a crucial role in promoting learning, and educators and educational institutions must give this dimension significant importance.

Table 3. Level of student academic performance

INDICATOR	GRADE	DESCRIPTIVE LEVEL
Level of Student Academic Performance	86.7	High

Table 3 presents the level of student academic performance in mathematics with a General Percentage Average of 86.7. Data revealed that the level of student academic performance in mathematics is high. Additionally, grade 8 students have a very satisfactory level of academic performance in learning Mathematics. It further implies that students are doing satisfactorily in mathematics. They understand math concepts and engage well in their mathematics class. This shows that they are good at math and are committed to their studies.

This finding is consistent with Urquijo and Extremera (2017), who found that more engaged students achieve good academic results. Furthermore, Garcia et al. (2016a) identified motivation and enjoyment of mathematics as solid indicators of performance in mathematics. These findings underscore the significance of creating a supportive and engaging learning environment that encourages students to actively participate and enjoy their educational journey, ultimately leading to enhanced academic performance.

Table 4. Relationship between student engagement and academic performance

	R	P-VALUE	DECISION	INTERPRETATION
Student Engagement	0.289	0.000	reject	significant

Table 4 shows the inferential analysis results on the relationship between the grade 8 students' engagement and their academic performance in learning mathematics. Based on the analysis in the said table, the r-value of 0.289 shows a low positive correlation. This positive correlation is highly significant through the p-value (0.000) and means that the higher student engagement, the higher their academic performance. It implies that their math grades increase as they perform well in class. Hence, the set null hypothesis in this study is rejected. It further implies that students actively participating in class will learn a lot and can easily remember the lesson. Since they have much learning, they can answer their task correctly, leading them to have good grades in mathematics. Utilizing effective instructional methods also plays a significant role in boosting student engagement and active participation in the classroom. Appropriate teaching strategies tailored to diverse students can improve academic performance in mathematics.

The finding substantiates the study executed by Lei et al. (2018) and Schnitzler et al. (2021) that student engagement had a low significant positive association with academic performance in mathematics. Involving

students in school and classroom activities is essential for enhancing their learning outcomes (Wang et al., 2016). Increased student involvement helps students better understand mathematical concepts (Ayub et al., 2017).

Table 5. Relationship between student engagement and attitude in learning mathematics

	R	P-VALUE	DECISION	INTERPRETATION
Student Engagement	0.629	0.000	reject	significant

Table 5 shows the inferential analysis result on the relationship between the grade 8 students' engagement and their attitude toward learning mathematics. Based on the analysis in the said table, the r-value of 0.629 shows a substantial positive correlation. This positive correlation is highly significant through the p-value (0.000) and means that the higher student engagement, the higher the attitude in learning of students in Mathematics. Hence, the set null hypothesis in this study is rejected. It signifies that when students become more actively engaged in class, their disposition toward learning also becomes more favorable. Consequently, when students actively participate in class, they become motivated and gain self-assurance in their ability to excel. This educational approach, facilitated by the teacher, fosters a constructive perspective regarding the subject matter. Encouraging student involvement in class discussions or group activities also alleviates their anxiety towards the subject and the teacher.

This finding confirms the consistency of the result of Nayir (2015) that there is a strong correlation between the engagement of students in their studies and their attitude, though he noted that outcomes may differ depending on the topic. This plays an important role in translating their attitudes into their actual academic performance (Lijie et al., 2020). Furthermore, students who had a positive attitude toward mathematics were more likely to actively participate and engage in their mathematics tasks (Gopal et al., 2018).

Table 6. Relationship between attitude in learning mathematics and academic performance

	R	P-VALUE	DECISION	INTERPRETATION
Attitude in Learning Mathematics	0.092	0.265	Accept	Not significant

Shown Table 6 is the inferential analysis result on the relationship between the grade 8 students' attitude toward learning mathematics and their academic performance in the subject. Based on the analysis in the said table, the correlation r-value obtained in the analysis is equal to 0.092, with a p-value equal to 0.265. The correlation could be a function of random sampling error. Hence, increasing the sample size could be a recommendation. Hence, the set null hypothesis is failed to reject. It implies that whether the students have a positive or negative attitude in learning mathematics does not significantly affect their grades in mathematics.

This finding does not support the study of Mazana et al. (2018), who found that improving students' attitude in learning can help them perform better academically. Asempapa (2022) also suggested that to have desirable academic performance, and teachers must adjust their teaching methods and provide support to students both academically and socially. Additionally, studies by Mazana et al. (2018) and Subia et al. (2018) showed that even if students have below-average math performance, having a positive attitude toward math can help them believe in their ability to improve and achieve higher results.

Table 7. Regression analysis result

	PATH	B-ESTIMATE	P-VALUE	DECISION	INTERPRETATION
Student Engagement→Academic Performance	c'	4.897	<.000	Reject	Significant
Student Engagement→Attitude in Learning	a	0.592	<.000	Reject	Significant
Attitude in Learning →Academic Performance	b	-2.706	0.095	Accept	Not significant
$a \times b + c'$	c	3.30	<.000	Reject	Significant

Shown in Table 7 is the regression analysis of the variables in the four criteria of the presence of a mediating effect of attitude in learning on the relationship between student engagement and academic performance. There are four steps to be met for a third variable to be acting as a mediator. In Table 7, these are categorized as follows: Step 1 is the relationship between student engagement and academic performance (estimate and test path c); Step 2 is the relationship between student engagement and attitude in learning (estimate and test path a); Step 3 is the

relationship between the attitude in learning and academic performance (estimate and test path b); and lastly, Step 4 is establishing mediating effect of the attitude in learning on the relationship between student engagement and academic performance in mathematics (path c') should be equal to zero (MacKinnon et al., 2007). In Table 7, Path C is called the total effect of student engagement on academic performance in Mathematics. Otherwise, Path c' is the effect of student engagement on academic performance that may be mediated by a process attitude in learning, and student engagement may still affect the academic performance of grade 8 students in mathematics.

In step 1, table 7 shows student engagement significantly predicts academic performance in mathematics of grade 8 students. Since the p-value of 0.000 is lower than 0.05, the alpha level of significance, which means that the relationship is significant. Hence, the null hypothesis 1 (H_{01}) is rejected. In step 2, student engagement significantly predicts the overall attitude in the learning of grade 8 students in mathematics. The data in Table 7 depicts the p-value of 0.000 for student engagement, which suggests that there is a significant effect on the overall attitude in the learning of the grade 8 students, hence the null hypothesis 2 (H_{02}) is rejected. In step 3, the overall student attitude does not significantly predict academic performance. As shown in Table 7, step 3, which has a p-value of 0.095, which is higher than 0.05 as the alpha level of significance; the relationship is not significant. Hence, the null hypothesis 3 (H_{03}) is accepted.

In the three steps (paths a, b, and c), only paths a and c are significant, and path b is not significant. Although this claim is controversial under Baron and Kenny (1986) steps because the link between the attitude in learning and academic performance is not significant, the mediating process can still proceed since there is an excellent theoretical background between their relationship (Shrout & Bolger, 2002).

To further appreciate the mediating effect of attitude in learning on the relationship between student engagement and academic performance, whether partial mediation, full mediation, or no mediation. It is crucial to determine if student engagement has a direct effect on academic performance or is having an indirect effect on academic performance through the attitude in learning using the approach of Preacher and Hayes (2008).

The Analysis reveals that student engagement has a direct significant effect on academic performance ($B = 4.90$, $p < .001$). The bootstrap confidence intervals based on 5000 samples contained zero, which is the basis of Preacher and Hayes (2008) for significance ($B = -1.60$ (95% [-3.80 to 0.21]). Hence, the indirect effect of student engagement on academic performance with the attitude in learning is not significant. This means that student engagement is not indirectly but directly related to the academic performance of grade 8 students in mathematics. Thus, attitude in learning does not mediate the relationship between student engagement and academic performance. Student engagement in mathematics directly affects academic performance even without the influence of attitude in learning of grade 8 students.

This discovery contradicts the conclusions achieved by Ngussa and Mabuti (2017) and Mazana et al. (2018), who emphasized that elements of attitude, like motivation, self-confidence, perceived usefulness, and anxiety, can positively impact students' learning and academic achievements. On the other hand, the research findings of Nayir (2015) and Lijie et al. (2020) showed consistency in this study that stresses the interconnectedness of student engagement and attitude in learning. However, they noted that outcomes may differ depending on the topic.

4.0 Conclusion

Based on the result of the study, it can be concluded that the attitude in learning does not play a mediating role in the correlation between engagement and academic performance in mathematics among grade 8 students. This means that even if students are highly engaged in their math studies, their attitude in learning does not significantly impact their academic performance in this subject. Hence, other factors may have a stronger influence on academic performance in mathematics among grade 8 students. Moreover, based on this conclusion, this study denies the theory of the multicomponent of attitude by Eagly and Chaiken (1993) since the multicomponent of attitude theory states that attitude in learning has an intervening effect on the correlation between student engagement and academic performance, which is contrary to the result of the study.

Based on the results and conclusion, it is also recommended that the school administrators and teachers plan and approve activities in which student engagement is highly prioritized to improve their academic performance.

Moreover, considering that attitude in learning does not mediate the correlation between engagement and academic performance, students should strengthen their classroom engagement to improve their academic performance. Furthermore, it is recommended for future researchers that other variables be tried out apart from attitude in learning to determine their mediating effect on the correlation between student engagement and academic performance in mathematics. Likewise, replications of this research may be undertaken using other groups of respondents and sets of data to test further the veracity of the assertion of the theory of multicomponent attitude.

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7.0 Conflict of Interests

The author declared that he has no conflicts of interest as far as this study is concerned.

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9.0 References

- Abd Algani, Y., & Eshan, J. (2019). Reasons and suggested solutions for low-level academic achievement in mathematics. *International e-Journal of Educational Studies*, 3(6), 181-190. <https://doi.org/10.31458/iej-es.604884>
- Abd Rahman, H., Khalid, Z. M., Ismail, N. M., Kamisan, N. A. B., Norulashikin, S.M., Nor, S. R. M., & Hamdan, M. F. (2022). Statistical Analysis on Students' Evaluation and Students' Final Exam Marks in Undergraduate Mathematical Courses at Universiti Teknologi Malaysia. *International Journal of Advanced Research in Future Ready Learning and Education*, 27(1), 1-8. <https://www.akademiabaru.com/submit/index.php/frle/index>
- Abu-Bader, S. (2021, March 6). Statistical Mediation Analysis Using the Sobel Test and Hayes SPSS Process Macro. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3799204
- Al-Zoubi, S. M., & Younes, M. A. B. (2015). Low academic achievement causes and results. *Theory and Practice in Language Studies*, 5(11), 2262. DOI: <http://dx.doi.org/10.17507/tpls.0511.09>
- Asempapa RS (2022) Examining practicing teachers' knowledge and attitudes toward mathematical modeling. *Int J Educ Math Sci Technol (IJEMST)* 10(2):272-292. <https://doi.org/10.46328/ijemst.2136>
- Awadalla, S., Davies, E. B., & Glazebrook, C. (2020). A longitudinal cohort study to explore the relationship between depression, anxiety and academic performance among Emirati university students. *BMC psychiatry*, 20, 1-10.
- Ayub, A. F. M., Yunus, A. S. M., Mahmud, R., Salim, N. R., & Sulaiman, T. (2017, January). Differences in students' mathematics engagement between gender and between rural and urban schools. In *AIP Conference Proceedings* (Vol. 1795, No. 1, p. 020025). AIP Publishing LLC. <https://doi.org/10.1063/1.4972169>
- A. El Refae, G., Kaba, A. & Eletter, S. (2021). The Impact of Demographic Characteristics on Academic Performance: Face-to-Face Learning Versus Distance Learning Implemented to Prevent the Spread of COVID-19. *International Review of Research in Open and Distributed Learning*, 22(1), 91-110. <https://doi.org/10.19173/irrodl.v22i1.5031>
- Baier, A. L., Kline, A. C., & Feeny, N. C. (2020). Therapeutic alliance as a mediator of change: A systematic review and evaluation of research. *Clinical psychology review*, 82, 101921. <https://www.sciencedirect.com/science/article/abs/pii/S027273582030104>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 5, 1173- 1182. <https://doi.org/10.1037//0022-3514.51.6.1173>
- Bernardo, J. (2020). PH ranks last among 58 countries in Grade 4 math, science: Study. *ABS-CBN News*. <https://lilark.com/NWBNk>
- Bujang, M. A., Omar, E. D., & Baharum, N. A. (2018). A review on sample size determination for Cronbach's alpha test: a simple guide for researchers. *The Malaysian journal of medical sciences: MJMS*, 25(6), 85. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6422571/>
- Bujang, M. A., Omar, E. D., & Baharum, N. A. (2018). A review on sample size determination for Cronbach's alpha test: a simple guide for researchers. *The Malaysian journal of medical sciences: MJMS*, 25(6), 85. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6422571/>
- Chand, S., Chaudhary, K., Prasad, A., & Chand, V. (2021). Perceived causes of students' poor performance in mathematics: A case study at Ba and Tavua secondary schools. *Frontiers in Applied Mathematics and Statistics*, 7, 614408. <https://doi.org/10.3389/fams.2021.614408>
- Chen, J. (2021). Arithmetic mean definition. *Investopedia*. Retrieved from <https://www.investopedia.com/terms/a/arithmeticmean.asp>
- Davadas, S. D., & Lay, Y. F. (2018). Factors Affecting Students' Attitude toward Mathematics: A Structural Equation Modeling Approach. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(1), 517-529. <https://doi.org/10.12973/ejmste/80356>
- Davis, J. A. (1971). *Elementary survey analysis*. Englewood Cliffs, NJ: Prentice-Hall.

- Delfino, A. P. (2019). Student engagement and academic performance of students of Partido State University. *Asian Journal of University Education*, 15(1), n1. <https://eric.ed.gov/?id=EJ1222588>
- Department of Education. (2015). Policy guidelines on classroom assessment for the k to 12 basic. education program. Retrieved from https://www.deped.gov.ph/wp-content/uploads/2015/04/DO_s2015_08.pdf
- Durongkaveroj, W. (2023). Recent Developments in Basic Education in Thailand: Issues and Challenges. *Journal of Southeast Asian Economies*, 39, S20–S33. <https://www.jstor.org/stable/27211214>
- Eagly, A. H. , & Chaiken, S. (1993). *The psychology of attitudes* (1st ed.). Fort Worth, TX: Harcourt Brace Jovanovich College. <https://doi.org/10.1111/ajpy.12149>
- Fredricks, J. A., Wang, M. T., Schall Linn, J., Hofkens, T. L., Sung, H. C., Parr, A.K., & Allerton, J. J. (2016). Using qualitative methods to develop a survey measure of math and science engagement. *Learning and Instruction*. <https://www.sciencedirect.com/science/article/abs/pii/S095947521630003>
- Galabo, N. R., Abellanos, G. G., & Gempes, G. P. (2018). The Level of Readiness in Mathematics of First Year High School Students of Cluster 6 Tugbok Secondary Schools: Basis for Intervention Program. *International Journal of Humanities, Arts & Social Sciences*, 4(1). <https://dx.doi.org/10.20469/ijhss.4.10005-1>
- García, T., Rodríguez, C., González-Castro, P., Torrance, M., and Gonzalez- Pienda, J. A. (2016a). Elementary students' metacognitive processes and postperformance calibration on mathematical problem-solving tasks. *Metacogn. Learn.* 11, 139–170. <https://link.springer.com/article/10.1007/s11409-015-9139-1>
- Gopal, K., Salim, N. R., & Ayub, A. F. M. (2018, November). Influence of self-efficacy and attitudes towards statistics on undergraduates' statistics engagement in a Malaysian public university. In *Journal of Physics: Conference Series* (Vol. 1132, No. 1, p. 012042). IOP Publishing. <https://iopscience.iop.org/article/10.1088/1742-6596/1132/1/012042/meta>
- Hwang, S., & Son, T. (2021). Students' Attitude toward Mathematics and its Relationship with Mathematics Achievement. *Journal of Education and E- Learning Research*, 8(3), 272–280. <https://doi.org/10.20448/journal.509.2021.83.272.280>
- Kasimu, O., & Imoro, M. (2017). Students' attitudes towards mathematics: the case of private and public Junior High Schools in the East Mamprusi District, Ghana. *IOSR Journal of Research & Method in Education (IOSR-JRME)*, 7(5), 38–43. <https://tinyurl.com/2anxs8aj>
- Kenton, W. (2022). What is the Pearson coefficient? Investopedia. <https://www.investopedia.com/terms/p/Pearson-coefficient.asp>
- Lijie, Z., Zongzhao, M., & Ying, Z. (2020). The influence of mathematics attitude on academic achievement: Intermediary role of mathematics learning engagement. *Jurnal Cendekia: Jurnal Pendidikan Matematika [Scholar's Journal: Journal of Mathematics Education]*, 4(2), 460–467. <https://doi.org/10.31004/cendekia.v4i2.253>
- Mabena, N., Mokgosi, P. N., & Ramapela, S. S. (2021). Factors contributing to poor learner performance in mathematics: A case of selected schools in Mpumalanga province, South Africa. *Problems of Education in the 21st Century*, 79(3), 451.
- MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation Analysis. *Annual Review of Psychology*, 58(1), 593–614. <https://doi.org/10.1146/annurev.psych.58.110405.085542>
- Malipot M. (2023). 2022 PISA results a 'clear indication' that PH education system is in 'worst state' ---PBED. <https://mb.com.ph/2023/12/5/pisa-2022-no-significant-improvements-seen-in-ph-students-performance>
- Mazana MY, Montero CS, Casmir RO (2018). Investigating students' attitude towards learning mathematics. *Int Electron J Math Educ* 14(1). <https://doi.org/10.29333/iejme/3997>
- Modan, N. (2023, December 5). PISA results show math performance declined globally amid COVID-19. K-12 Dive. <https://www.k12dive.com/news/PISA-2022-math-decline-covid>
- Nayir, K. F. (2015). The relationship between students' engagement level and their attitudes toward school. *The Anthropologist*, 20(1-2), 50–61. <https://doi.org/10.1080/09720073.2015.11891723>
- Ngussa, B. M., & Mbuti, E. E. (2017). The influence of humour on learners' attitude and mathematics achievement: A case of secondary schools in Arusha City, Tanzania. *Journal of Educational Research*, 2(3), 170–181. <https://www.ijrdo.org/index.php/er/article/view/165>
- PBED (7 December 2023). PBED Statement on the 2022 Programme for International Students Assessments (PISA) results. <https://www.pb.ed.ph/news>
- Quezada, V. D. (2020). Difficulties and Performance in Mathematics Competences: Solving Problems with Derivatives. *Int. J. Eng. Pedagogy*, 10(4), 35–53.
- Preacher, K. J. & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*. Vol. 40, (3): p. 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Schleicher, A. (2019). PISA 2018: Insights and Interpretations. OECD Publishing. <https://eric.ed.gov/?id=ED601150>
- Schnitzler, K., Holzberger, D., & Seidel, T. (2021). All better than being disengaged: Student engagement patterns and their relations to academic self-concept and achievement. *European Journal of Psychology of Education*, 36, 627–652. <https://doi.org/10.1007/s10212-020-00500-6>
- Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological methods*, 7(4), 422. <https://psycnet.apa.org/record/2002-11349-006>
- Subia, G. S., Salangsang, L. G., & Medrano, H. B. (2018). Attitude and performance in mathematics I of bachelor of elementary education students: A correlational analysis. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*, 39(1), 206–213. <https://core.ac.uk/download/pdf/235050513.pdf>
- Urquijo, I., & Extremera, N. (2017). Academic satisfaction at university: The relationship between emotional intelligence and academic engagement. *Electronic Journal of Research in Educational Psychology*, 15(3), 553–573. doi:10.14204/ejrep.43.16064
- Varaidzai Makondo, P., & Makondo, D. (2020). Causes of poor academic performance in mathematics at ordinary level: A case of Mavuzani High School, Zimbabwe. *International Journal of Humanities and Social Science Invention (IJHSSI)*, 9(1), 10–18.
- Wang, M. T., Fredricks, J. A., Ye, F., Hofkens, T. L., & Linn, J. S. (2016). The math and science engagement scales: Scale development, validation, and psychometric properties. *Learning and Instruction*, 43, 16–26. <https://www.sciencedirect.com/science/article/abs/pii/S0959475216300081>

Organizational Commitment Among Employees of Pag-Ibig Fund Zamboanga Branch: An Assessment

Mary Jane J. Futralan

Sulu State College, Jolo, Sulu, Philippines

Author email: sscgspub@sulustatecollege.edu.ph

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Abstract. This study investigated the employees' level of commitment to the organization of the Pag-IBIG Fund Zamboanga Branch during the Fiscal Year 2023. The study utilized a non-probability sampling method called purposive sampling, with 100 employee respondents. The weighted mean, standard deviation, One-way ANOVA, t-test for independent samples, and Pearson's r were used to examine the data. The findings of the study are as follows: 1) Out of the 100 employee respondents, the majority were female, single, aged between 27-42 years old, had a bachelor's degree, and were employed on a contractual basis; 2) On average, the employees of the Pag-IBIG Fund Zamboanga Branch showed a high level of organizational commitment to their agency; 3) Generally, variables such as age, civil status, educational attainment, and employment status significantly influenced how employees assessed the level of organizational commitment at the Pag-IBIG Fund Zamboanga Branch, except for gender; 4) It can be inferred that the same group of employee respondents who assessed the level of organizational commitment in terms of Continuance Commitment as Agree or with a High Level also assessed the Affective Commitment and Continuance Commitment, respectively; and 5) The Three Component Model of Organizational Commitment proposed by Meyer and Allen, which holds that an employee's choice to continue their membership in an organization and their feelings toward it are influenced by three separate psychological states, is supported by the results of this study.

Keywords: Affective commitment; Continuance commitment; Normative commitment; Organizational commitment; PAG-IBIG Fund.

1.0 Introduction

One of the biggest challenges faced by the Pag-IBIG Fund Office - Zamboanga Branch is the significant decline in employees' organizational commitment. High organizational commitment is often associated with lower turnover rates, as dedicated workers are more likely to stay with their employer, resulting in cost savings in terms of hiring and training new employees. This study provides an opportunity for HR professionals to customize retention programs, training initiatives, and other HR practices to better meeting the needs and expectations of workforce. By using the Meyer and Allen Theory, the employer of the Pag-IBIG Fund can identify the level of organizational commitment among its employees and analyze any differences based on their demographic profile.

The Three Component Model of Commitment includes: 1) Affective Commitment; 2) Normative Commitment; and 3) Continuance Commitment. Therefore, this study aims to evaluate the commitment level of employees at Pag-IBIG Fund Zamboanga Branch, with the following hypotheses: a. The degree of organizational commitment does not significantly vary among the employees of Pag-IBIG Fund Zamboanga Branch when data is categorized according to their demographic profile in terms of age, gender, civil status, educational attainment, and

employment status; and b. The subcategories that contribute to the employees' organizational commitment level at Pag-IBIG Fund Zamboanga Branch do not significantly correlate with each other.

Through this study, the employer of the Pag-IBIG Fund - Zamboanga Branch can assess key factors that may influence employees' organizational commitment and implement corrective measures to enhance commitment levels. This, in turn, can lead to employees being more motivated in their work, more proactive on offering support, and potentially achieving higher levels of productivity.

2.0 Methodology

2.1 Research Design

The type of research used by the researcher in achieving the objectives of this study was a descriptive-quantitative research. The researcher collected data from the 100 participants, as the sample size, through survey questionnaire. Descriptive survey involves collecting data from a sample of individuals in order to test hypothesis or to answer questions concerning the current status of the subject of the study (Gay, 1992; Check and Schutt, 292, P.160).

2.2 Research Participants

The researcher conducted a survey through a research questionnaire to the Pag-IBIG Fund Zamboanga Branch employees, with a total population of 100 employees with the following employment status: permanent and contractual. A non-probability sampling design through purposive sampling method was employed in this study. A total representative sample of one hundred (100) was purposively chosen based on the availability of employees of Pag-IBIG Fund Zamboanga Branch. The use of purposive sampling in this study ensured the proper representation of age, gender, civil status, educational attainment and status of employment.

2.3 Research Instrument

The tools used by the researcher to execute the process was through survey questionnaires, adapted from the study of Ma. Antonietta et al. (2015). Using the 5-Point-Likert's Scale for agreement such as strongly agree, agree, neutral, disagree and strongly disagree. The adoption and construction of the instrument were made with one of the Three-Model of Commitment being the foundation. However, to suit its applicability to the present study and its local settings, the questionnaire was subjected for perusal of at least two experts from among the faculty members of the Graduate Studies of Sulu State College.

2.4 Data Gathering Procedure

Firstly, the researcher secured a letter from the Office of the Dean of Graduate Studies, a letter was also to the head of Pag-IBIG Fund Zamboanga Branch for approval to the personnel concern. Secondly, the researcher launched and administered the questionnaire personally. Lastly, after the retrieval of the instrument, the researcher endorsed it to the statistician for statistical instrument and analysis.

2.5 Data Analysis

The data gathered through survey method was arranged and organized using the table and calculated using the relevant statistical tools to derive with a reliable result. Frequency and percentage were used to determine the demographic profile of the employees of Pag-IBIG Fund-Zamboanga Branch in terms of age, gender, civil status, educational attainment, and status of employment. Mean and standard deviation assessed the level of organizational commitment of employees of Pag-IBIG Fund-Zamboanga in the context of affective commitment, normative commitment, and continuance commitment. T-test for independent samples and one-way analysis of variance (ANOVA) were used if there is a significant difference in the level of organizational commitment of the employees of Pag-IBIG Fund Zamboanga Branch when the data are categorized according to their demographic profile in terms of age, gender, civil status, educational attainment, and status of employment. Lastly, Pearson Product - Moment Correlation was used to examine if there is a significant correlation among the sub-categories subsumed under the level of organizational commitment of the employees.

3.0 Results and Discussion

3.1 Demographic Profile of Employees

The demographic profile of the Pag-IBIG Fund - Zamboanga Branch staff is shown in Table 1. This table shows that, of 100 employee responders, 11 (11.0%) are between the ages of 26 and under, 55 (55.0%) are between the

ages of 27 and 42, 31 (31.0%) are between the ages of 43-58 and above, and 3 (3.0%) are between the ages of 59 and higher. This shows that more than half of the employees at the Pag-IBIG Fund-Zamboanga Branch are middle-aged, which suggests that they are gregarious and engaged. For the gender profile, it indicates that, of the 100 employee responders, 43 (43.1%) are men and 57 (57.0%) are women. This suggests that the Pag-IBIG Fund - Zamboanga Branch employs a slightly higher proportion of female employees than male employees—more than 50%, or the majority. This result indicates that the majority of the workforce for the Pag-IBIG Fund - Zamboanga Branch in Fiscal Year 2023 consists of female employees.

Table 1. Demographic profile of the employees in terms of age

Age	FREQUENCY	PERCENTAGE
26 years old & below	11	11.0%
27-42 years old	55	55.0%
43-58 years old	31	31.0%
59 years old & above	3	3.0%
Gender		
Male	43	43.0%
Female	57	57.0%
Civil Status		
Single	57	57.0%
Married	43	43.0%
Separated/Widowed	0	0
Educational Attainment		
Bachelor's degree	41	41.0%
With master's units	24	24.0%
Master's degree	34	34.0%
With doctoral units	1	1.0%
Doctorate degree	0	0
Length of Service		
Contractual	50	50.0%
Permanent/Plantilla	50	50.0%

For the civil status profile, it indicates that of the 100 employee responses, 57 (57.0%) are single, 43 (44.0%) are married, and none of them are widowed, according to the statistics shown in this table. This suggests that more than half of the Pag-IBIG Fund - Zamboanga Branch employees who participated in the study are single, giving them more time to devote to their work and the advancement of their careers. For the educational attainment profile, it indicates that out of the 100 employee-respondents, 41 (41.0%) held a bachelor's degree, 24 (24.0%) had a bachelor's degree plus master's units, 34 (34.0%) held a master's degree, 1 (1.0%) held a master's degree plus doctorate units, and none held a PhD. This indicates that almost 50% of the workers at the Pag-IBIG Fund - Zamboanga Branch hold bachelor's degrees, which is the required minimum to work for a government agency. Moreover, for the status of employment profile, it indicates that of the 100 employee responses, it reveals that 50 (50.0%) have contractual status and 50 (50.0%) have permanent/plantilla items. This indicates that the Pag-IBIG Fund - Zamboanga Branch employees are fairly represented in this survey with regard to their job status.

3.2 Organizational Commitment of Employees

Affective Commitment

Table 2. Level of organizational commitment of employees in the context of Affective Commitment

INDICATORS	MEAN	SD	RATING
1. I feel a strong emotional attachment to the Pag-IBIG Office.	3.9800	.75183	Agree
2. I take pride in being a part of the Pag-IBIG Office.	4.2200	.67540	Agree
3. I often think about the long-term future of Pag-IBIG Office.	3.9900	.83479	Agree
4. I have a deep sense of belonging to the Pag-IBIG Office.	3.9600	.85185	Agree
5. I would be upset if I had to leave the Pag-IBIG Office.	3.8500	.82112	Agree
6. I am genuinely committed to the values and goals of the Pag-IBIG Office.	4.1300	.73382	Agree
7. I have a strong emotional bond with my colleagues at the Pag-IBIG Office.	4.2600	.77355	Agree
8. I enjoy discussing the Pag-IBIG Office with others.	3.9900	.78490	Agree
9. I am proud of the Pag-IBIG Office's achievements.	4.2600	.69078	Agree
10. I am excited about the prospects of my long-term career at the Pag-IBIG Office.	4.0300	.83430	Agree
Total Weighted Mean	4.0670	.58189	Agree

Legend: (5) 4.50-5.0=Strongly (SA); (4) 3.50 - 4.49=Agree (A); (3) 2.50 - 3.49=Neutral (N); (2) 1.50 - 2.49=Disagree (D); (1) 1.00 - 1.49=Strongly Disagree (SD)

Table 2 presents the organizational commitment level of the Pag-IBIG Fund - Zamboanga staff with connection to emotional commitment. According to the table, this subcategory received an Agree or High-Level score, with a weighted mean score of 4.0670 overall and a standard deviation of .58189. Employee feedback consistently indicated that employees at the Pag-IBIG Fund - Zamboanga had a high level of affective commitment and organizational connection. In other words, there was a great sense of emotional connection, affiliation, and devotion among this agency's staff members to the business. These employees also have a strong feeling of community at work and are willing to exert a significant amount of effort to further the goals of the business.

Lok and Crawford (2001) in Nguyen et al., (2020) found relationship between Participative Decision making (PDM) and affective commitment. They proposed that affective commitment can be predicted by leadership that includes the participation and centralization in decision-making and awareness of employees about working conditions and also as beliefs about the supervision, participation in work and leadership styles.

Normative Commitment

Table 3. Level of organizational commitment of employees in the context of Normative Commitment

INDICATORS	MEAN	SD	RATING
1. I feel a sense of moral obligation to remain with the Pag-IBIG Office.	3.8600	.75237	Agree
2. Leaving the Pag-IBIG Office would be ethically wrong due to the support it has provided me.	3.3400	.86713	Neutral
3. I believe it is my duty to stay loyal to the Pag-IBIG Office.	3.8200	.99879	Agree
4. Leaving the Pag-IBIG Office would be a breach of my ethical commitments.	3.2100	.91337	Neutral
5. I stay with Pag-IBIG Office because I feel a strong sense of obligation.	3.4600	.90364	Neutral
6. My commitment to Pag-IBIG Office is based on moral principles.	3.6900	.78746	Agree
7. I would feel guilty if I left the Pag-IBIG Office.	3.1400	.85304	Neutral
8. I have a strong belief in honoring my commitments to the Pag-IBIG Office.	3.6900	.72048	Agree
9. Leaving the Pag-IBIG Office would be a betrayal of trust.	3.0300	.97913	Neutral
10. I stay with the Pag-IBIG Office because it's the right thing to do.	3.4600	.83388	Agree
Total Weighted Mean	3.4700	.66172	Neutral

Employees at the Pag-IBIG Fund - Zamboanga's organizational commitment level is shown in Table 3 in relation to normative commitment. According to the table, this subcategory had a weighted mean score of 3.4700 with a standard deviation of .66172 and was rated as Neutral or with Moderate Level. Employee responses agreed that the Pag-IBIG Fund - Zamboanga employees have a moderate level of organizational connection in terms of normative commitment. That is to say, employees at this organization showed a modest level of dedication to staying put because they believed they owed the Pag-IBIG Fund - Zamboanga a moral or ethical obligation.

Mayer and Parfyonova (2009) argued that normative commitment has a dual nature and that it manifests itself differently depending on the strength of other components in an employee's commitment profile. Normative commitment can be experienced either as a moral duty or a sense of indebtedness, each having different implications for work behavior.

Continuance Commitment

Table 4. Level of organizational commitment of employees in the context of Continuance Commitment

INDICATORS	MEAN	SD	RATING
1. I remain with the Pag-IBIG Office because the cost of leaving is too high.	3.4400	.82045	Neutral
2. Leaving the Pag-IBIG Office would result in significant financial loss for me.	3.5200	.81004	Agree
3. I feel locked into my job at the Pag-IBIG Office due to financial constraints.	3.2400	.75371	Neutral
4. The benefits of staying at the Pag-IBIG Office outweigh the costs of leaving.	3.3200	.72307	Neutral
5. I am aware of the sacrifices I would have to make if I left the Pag-IBIG Office.	3.5000	.71774	Agree
6. Leaving the Pag-IBIG Office would require a significant personal sacrifice.	3.3400	.74155	Neutral
7. I don't have many viable job alternatives outside of the Pag-IBIG Office.	3.1200	.93506	Neutral
8. I remain with the Pag-IBIG Office because the thought of finding another job is daunting.	2.9600	.88671	Neutral
9. The financial implications of leaving the Pag-IBIG Office are a significant factor in my decision to stay.	3.2000	.82878	Neutral
10. I don't have many other job prospects that would match the benefits I receive from the Pag-IBIG Office.	3.3100	.89550	Neutral
Total Weighted Mean	3.2950	.54926	Neutral

In the context of continuity commitment, Table 4 displays the amount of organizational commitment exhibited by Pag-IBIG Fund - Zamboanga staff members. This subcategory was assessed as Neutral or with Moderate Level based on its overall weighted mean score of 3.2950 with a standard deviation of .54926, as this table reveals. Employee responses concurred that, in terms of normative commitment, Pag-IBIG Fund - Zamboanga staff members have a modest level of organizational connection. In simpler terms, agency staff members exhibited a modest level of commitment when it came to staying with the company owing to the anticipated expenses of quitting or being willing to go on with the organization.

Chigeda (2022) in her study on "Continuance in organizational commitment: The role of emotional intelligence, work-life balance support, and work-related stress" reported that emotional intelligence significantly moderated the effect of work-related stress on organizational continuance commitment. Results of her study highlight the importance of factors including work-related stress, work-life balance, and emotional intelligence in efforts to help inadequately resourced entities retain employees.

3.3 Difference in Organizational Commitment

Table 5. Difference in level of organizational commitment grouping data by age

SOURCES OF VARIATION		SS	DF	MEAN SQUARE	F	SIG.	DESCRIPTION
Affective Commitment	Between Groups	11.974	3	3.991	17.782*	.000	Significant
	Within Groups	21.547	96	.224			
	Total	33.521	99				
Normative commitment	Between Groups	4.405	3	1.468	3.619*	.016	Significant
	Within Groups	38.945	96	.406			
	Total	43.350	99				
Continuance Commitment	Between Groups	.502	3	.167	.547	.651	Not Significant
	Within Groups	29.365	96	.306			
	Total	29.867	99				

*Significant alpha .05

Table 5 displays the differences in the employees' level of organizational commitment when the data are categorized according to the age distribution of the Pag - IBIG Fund Zamboanga Branch staff. Except for "Continuance Commitment," this table demonstrates that all other subcategories included in the organizational commitment level of Pag-IBIG Fund Zamboanga Branch staff showed significant F-ratios and P-values at alpha.05. This suggests that despite the age differences among the employee respondents, there are differences in their assessments of the level of organizational commitment demonstrated by the Pag-IBIG Fund Zamboanga Branch staff.

Table 6. Post hoc analysis result

DEPENDENT VARIABLES	(I) GROUPING BY AGE	(J) GROUPING BY AGE	MEAN DIFFERENCE (I-J)	STD. ERROR	SIG.
Affective Commitment	26 years old & below	27-42 years old	-.26000	.15648	.350
		43-58 years old	-.91349*	.16627	.000
		59 years old & above	-1.05758*	.30858	.005
Normative Commitment	26 years old & below	27-42 years old	-.28000	.21037	.546
		43-58 years old	-.64839*	.22353	.024
		59 years old & above	-.50000	.41486	.625

*The mean difference is significant at the 0.05 level.

A Post Hoc Analysis using the Tukey Test is used when data are categorized based on the age demographic profile to determine which age-classified groups have different levels of means in areas covered by the organizational commitment level of the Pag - IBIG Fund Zamboanga Branch employees. The analysis's conclusion, which is presented in Table 6, indicates that the means of affective and normative commitment differ in the lower group

mean less the higher group mean. For the Affective Commitment, it shows that the group of employee-respondents between 43-58 years old obtained a mean difference of -.91349* with a Standard Error of .16627 and p-value of .000 which is significant at $\alpha=.05$ over the group of employee-respondents within 26 years old & below. So, under this sub-category, no other group of employee-respondents are supposed to have better ways of assessing the level of organizational commitment of the employees of Pag - IBIG Fund Zamboanga Branch in terms of Affective Commitment than those employee-respondents within the age range of 43-58 years old.

For the Normative Commitment, it shows that the group of employee-respondents between 43-58 years old obtained the mean difference of -.64839* with a Standard Error of .22353 and p-value of .024 which is significant at $\alpha=.05$ over the group of employee-respondents within 26 years old & below. So, within this specific sub-category, no other group of employee-respondents should have superior methods for evaluating the level of organizational commitment of the employees of Pag - IBIG Fund Zamboanga Branch in terms of Normative Commitment than those employee-respondents within the age range of 43-58 years old.

Table 7. Difference in level of organizational commitment grouping data by gender

VARIABLES	GROUPING	MEAN	S. D.	MEAN DIFFERENCE	T	SIG.	DESCRIPTION
Affective Commitment	Male	3.9442	.65622	-.21546	-1.856	.067	Not Significant
	Female	4.1596	.50528				
Normative Commitment	Male	3.3581	.72907	-.19625	-1.477	.143	Not Significant
	Female	3.5544	.59883				
Continuance Commitment	Male	3.1326	.60424	-.28499*	-2.645	.010	Significant
	Female	3.4175	.47326				

*Significant at alpha 0.05

Table 7 shows the differences in the level of organizational commitment among the Pag - IBIG Fund Zamboanga Branch employees when data are categorized according to their gender demographic profile. According to this table, the Pag-IBIG Fund Zamboanga Branch employees' level of organizational commitment does not significantly differ across any of the other subcategories at $\alpha.05$. This is accurate, with the exception of "Continuance Commitment," which shows that opinions regarding the level of organizational commitment displayed by Pag-IBIG Fund Zamboanga Branch staff members are the same for male and female employees. The implication of this study is that a male employee-respondent's perspective on evaluating the degree of employees' organizational commitment of Pag-IBIG Fund Zamboanga Branch.

As a result, it is reasonable to conclude that respondents who are workers of Pag-IBIG Fund Zamboanga Branch did not significantly differ in their assessments of the employees' organizational commitment. Thus, the hypothesis that reads, "When data are grouped according to their demographic profile in terms of gender, there is no significant difference in the level of organizational commitment of the employees of Pag - IBIG Fund Zamboanga Branch" is accepted.

Table 8. Difference in level of organizational commitment grouping data by civil status

VARIABLES	GROUPING	MEAN	S. D.	MEAN DIFFERENCE	T	SIG.	DESCRIPTION
Affective Commitment	Single	3.8105	.52019	-.59645	-5.870	.000	Significant
	Married	4.4070	.47928				
Normative Commitment	Single	3.2228	.68583	-.57487	-4.745	.000	Significant
	Married	3.7977	.46058				
Continuance Commitment	Single	3.2649	.59085	-.06997	-.629	.531	Not Significant
	Married	3.3349	.49275				

*Significant alpha .05

When data are grouped based on the civil status of the employees, Table 8 shows the variations in the level of organizational commitment of the Pag - IBIG Fund Zamboanga Branch employees. This table shows that, with the exception of "Continuance Commitment," the P-values and mean differences of all other subcategories that are included in the measurement of the organizational commitment of Pag-IBIG Fund Zamboanga Branch personnel

are not significant at alpha.05. This indicates that although the respondents who are teachers have different civil statuses, they do have different perspectives on how committed the staff members of the Pag-IBIG Fund Zamboanga Branch are to the organization. According to this conclusion, an employee-respondent who is married will likely have an advantage over single respondents when it comes to evaluating the degree of organizational commitment displayed by Pag-IBIG Fund Zamboanga Branch staff members, or vice versa.

However, it is reasonable to conclude that the variable civil status did have a substantial mediating role in the manner in which employee respondents evaluated the organizational commitment of Pag-IBIG Fund Zamboanga Branch personnel. As a result, the hypothesis that "When data are grouped according to their demographic profile in terms of civil status, there is no significant difference in the level of organizational commitment of the employees of Pag – IBIG Fund Zamboanga Branch" is rejected.

Table 9. Difference in level of organizational commitment grouping data by educational attainment

VARIABLES	GROUPING	MEAN	S. D.	MEAN DIFFERENCE	T	SIG.	DESCRIPTION
Affective Commitment	Between Groups	16.566	3	5.522	31.264*	.000	Significant
	Within Groups	16.956	96	.177			
	Total	33.521	99				
Normative Commitment	Between Groups	8.369	3	2.790	7.656*	.000	Significant
	Within Groups	34.981	96	.364			
	Total	43.350	99				
Continuance Commitment	Between Groups	.482	3	.161	.525	.666	Not Significant
	Within Groups	29.385	96	.306			
	Total	29.867	99				

*Significant alpha .05

Table 9 presents the differences in the level of organizational commitment among the staff of Pag-IBIG Fund Zamboanga Branch, categorized by their educational attainment and demographic profile. Except "Continuance Commitment," all other subcategories in the organizational commitment level of the staff showed significant F-ratios and P-values at alpha.05. This indicates that the opinions on organizational commitment vary among the employee respondents, despite their different educational backgrounds. Specifically, those with a master's degree and doctoral units may have a better perspective when evaluating the organizational commitment of the branch employees compared to those with a bachelor's degree, master's units, or just a master's degree.

However, it is important to note that the extent to which the employee respondents assessed the organizational commitment of the branch personnel was significantly influenced by their educational attainment. Consequently, the hypothesis stating that there is no significant difference in the level of organizational commitment among the employees of Pag-IBIG Fund Zamboanga Branch, when categorized by their demographic profile in terms of educational attainment, is rejected. Furthermore, it is worth mentioning that when the data are categorized based on the demographic profile in terms of educational attainment, specifically for affective commitment and normative commitment, a post hoc analysis is conducted. This analysis helps identify which groups, based on educational attainment, have different mean levels in the areas encompassed by the organizational commitment of the branch employees. This is necessary because one of the groups, namely those with a master's degree and doctoral units, has a sample size of less than two cases.

Table 10 shows the differences in the organizational commitment of the Pag - IBIG Fund Zamboanga Branch staff when data is based on their work title and demographic profile. According to this table, all of the subcategories that make up the organizational commitment level of the staff at the Pag-IBIG Fund Zamboanga Branch have mean differences and P-values that are significant at alpha.05. The Pag-IBIG Fund Zamboanga Branch staff members' replies vary regarding their job status, but they also range when it comes to their level of commitment to the organization, as evidenced by the data on "Continuance Commitment." This finding suggests that having a permanent job status may provide an employee-respondent an advantage over those with a contractual status when it comes to evaluating the organizational commitment of Pag – IBIG Fund Zamboanga Branch personnel, or vice versa.

Table 10. Difference in level of organizational commitment grouping data by status of empolymnet

VARIABLES	GROUPING	MEAN	S. D.	MEAN DIFFERENCE	T	SIG.	DESCRIPTION
Affective Commitment	Cont'l	3.7060	.46791	-.72200	-7.895	.000	Significant
	Perm	4.4280	.44632				
Normative Commitment	Cont'l	3.1140	.64429	-.71200	-6.363	.000	Significant
	Perm	3.8260	.45929				
Continuance Commitment	Cont'l	3.2780	.55191	-.03400	-.308	.759	Not Significant
	Perm	3.3120	.55167				

*Significant alpha .05

However, it is reasonable to conclude that the manner teacher respondents evaluated the degree of organizational commitment exhibited by Pag - IBIG Fund Zamboanga Branch employees was significantly mediated by the employees' changing job position. Thus, the hypothesis that "When data are grouped according to their demographic profile in terms of status of employment, there is no significant difference in the employees' level of organizational commitment of Pag - IBIG Fund Zamboanga Branch" is rejected.

Table 11. Correlation among the sub-categories subsumed under the level of organizational commitment of the employees

Variables		Pearson <i>r</i>	Sig	N	Description
Dependent	Independent				
Continuance Commitment	Affective Commitment	.198**	.048	100	Low
	Normative Commitment	.422**	.000	100	Moderate

*Correlation Coefficient is significant at alpha .05

Table 11 presents the relationship between the affective, normative, and continuity commitment subcategories that make up the organizational commitment level of employees at the Pag-IBIG Fund Zamboanga Branch. The table shows that the estimated Pearson Correlation Coefficients (Pearson *r*) for these variables are statistically significant at alpha 0.05. Specifically, the degrees of correlation between Sulu State College faculty members and the subcategories included in the outcome-based teaching approach's efficacy are as follows: a) There is a low positive correlation between Continuance Commitment and Affective Commitment, and b) There is a moderate positive correlation between Continuance Commitment and Normative Commitment.

Based on these findings, it can be inferred that the group of employee respondents who rated the organizational commitment of Pag-IBIG Fund Zamboanga Branch employees as Agree or with a High Level is likely the same group that rated the employees' affective and continuity commitments. Therefore, it is reasonable to conclude that there is a moderate correlation between the subcategories of organizational commitment (affective, normative, and continuity commitment) among employees at the Pag-IBIG Fund Zamboanga Branch. As a result, the hypothesis suggests that there is no significant association between these subcategories is rejected. Empirical evidence shows that organizational commitment is related to important work outcomes such as employee well-being (Harnes & Cameron, 2005; Seu, 2002), organizational citizenship behaviors (Meyer et al., 2002), contextual performance (Scotter, 2000), and withdrawal cognitions (Tett, 2005).

4.0 Conclusion

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

- Pag-IBIG Fund's Zamboanga Branch employee-respondents are properly represented in terms of age, gender, marital status, degree of education, and employment position.
- Generally, workers at the Zamboanga Branch of the Pag-IBIG Fund expressed a strong sense of organizational loyalty.
- Aside from gender, major influences on employees' evaluations of the degree of organizational commitment among staff members at the Pag-IBIG Fund's Zamboanga Branch were age, marital status, educational attainment, and appointment status.
- Conversely, it is probable that the same group of employee respondents who assessed the organizational commitment of the employees at the Zamboanga Branch of the Pag-IBIG Fund as Agree or with a High Level also scored the employees' affective and continuing commitments.

e) This study appears to support the Meyer and Allen's Three Component Model of Organizational Commitment, which defines commitment as a psychological state with three distinct components that influence employees' decision to remain with the organization, reflect their attitudes about the company they work for, and characterize their relationship with the company.

The study's results and conclusions lead to the following suggestions being made:

- a) The administrators of Pag-IBIG Fund Zamboanga Branch should consider incorporating the findings of this study into their programs and policies to enhance employee commitment to the agency.
- b) Employees of Pag-IBIG Fund Zamboanga Branch should utilize the results of this study to improve their work performance.
- c) The top management of the Pag-IBIG Fund Zamboanga Branch should apply the results of this study to enhance the workplace environment for their employees.
- d) Public administration students who are interested in conducting similar studies are urged to do so in various contexts, taking into account additional factors including worker involvement, the atmosphere at work, and stress and anxiety at work.

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The author solely written this article. Thus, there are no co-authors for this study.

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The author declared that he has no conflicts of interest as far as this study is concerned.

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9.0 References

- Abdullah, A., & Ramay, I. (2012). Antecedents of organizational commitment of banking sector employees in Pakistan. *Serbian Journal of Management*, 7(1), 89-102. <https://doi.org/10.5937/sjm1201089a>
- Bulawit, J. (2023). Psychological Contract and Organizational Commitment: A Study on Non- Tenure Local Government Unit Employees in General Tinio, Philippines
- Choong, Y.-O. (2011). Intrinsic Motivation and Organizational Commitment in the Malaysian Private Higher Education Institutions: An Empirical Study. *International Refereed Research Journal*.
- Gamble, J. (2009). Chapter Organizational commitment of Chinese employees in foreign-invested firms. Taylor & Francis Group. <https://doi.org/10.4324/9781315876627-8>
- Kim, J. S., & Ryu, S. (2017). Employee Satisfaction With Work-life Balance Policies And Organizational Commitment: A Philippine Study. *Public Administration and Development*, 37(4), 260-276. <https://doi.org/10.1002/pad.1794>
- Ko, J.-W., Price, J. L., & Mueller, C. W. (1997). Assessment of Meyer and Allen's three-component model of organizational commitment in South Korea. *Journal of Applied Psychology*, 82(6), 961-973. <https://doi.org/10.1037/0021-9010.82.6.961>
- Kokubon, K. (2019). Organizational commitment, rewards and education in the Philippines [Review of Organizational commitment, rewards and education in the Philippines].
- Labrague, L. J., McEnroe - Petite, D. M., Tsaras, K., Cruz, J. P., Colet, P. C., & Gloe, D. S. (2018). Organizational commitment and turnover intention among rural nurses in the Philippines: Implications for nursing management. *International Journal of Nursing Sciences*, 5(4), 403-408. <https://doi.org/10.1016/j.ijnss.2018.09.001>
- Nitafan, R. P. (2020). Employee Silence, Organizational Commitment, and Job Burnout of Regular Employees in Local Government Units in the Cotabato Province, Philippines: A Keystone for Intervention. *International Journal of English Literature and Social Sciences (IJELS)*, 5(6).<https://journalrepository.theshillonga.com/index.php/ijels/article/view/2743>
- Presbitero, A., Newman, A., Le, H., Jiang, Z., & Zheng, C. (2018). Organizational commitment in the context of multinational corporations: a critical review and directions for future research. *The International Journal of Human Resource Management*, 30(1), 188-218. <https://doi.org/10.1080/09585192.2018.1511614>
- Shaw, J. D., Delery, J. E., & Abdulla, M. H. A. (2003). Organizational commitment and performance among guest workers and citizens of an Arab country. *Journal of Business Research*, 56(12), 1021-1030. [https://doi.org/10.1016/s0148-2963\(01\)00316-2](https://doi.org/10.1016/s0148-2963(01)00316-2)
- Wang, Y. (2005b). Observations on the organizational commitment of Chinese employees: comparative studies of state-owned enterprises and foreign-invested enterprises. <https://www.taylorfrancis.com/chapters/edit/10.4324/9781003060390-3/observations-organizational-commitment-chinese-employees-comparative-studies-state-owned-enterprises-foreign-invested-enterprises-yingyan-wang>

Extent of Demonstration Method on Mathematics Teaching Approaches Among Senior High School Students of Mindanao State University-Sulu

Jainalyn S. Annong-Aksan
Sulu State College, Jolo, Sulu, Philippines

Author email: sscgspub@sulustatecollege.edu.ph

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Abstract. The demonstration method is a vital teaching tool that helps students improve their procedural knowledge through observation, imitation, and technique adaptation in solving math problems. Employing this method with different approaches can enhance students' active learning, making it even more effective for mathematics teachers to address the issue of students' low academic performance in Mathematics. This study assessed the extent of the demonstration method on mathematics teaching approaches among senior high school students of Mindanao State University-Sulu. It employed a descriptive-correlational research design with 190 student respondents selected through a stratified random sampling method. The study reveals that, among the 190 student-respondents, mainly female and aged 17-18 in grade 11, with parents having a high school education, the demonstration method is viewed positively in math teaching. While the sample represents typical senior high school students, the lack of diversity in parental education may limit generalizability. Student perceptions vary by age and grade level, with older students preferring the teacher-centered approach, and grade 12 students showing overall positive views. The study highlights the consistent effectiveness of the demonstration method across teaching approaches, underscoring the importance of efficient implementation for student perceptions. The study recommends that school heads support teachers with resources, training, and feedback, monitor the method's effectiveness on student performance, and encourage the use of the demonstration method in mathematics teaching. Parents should be informed and involved in their children's learning, while students should actively engage in the demonstration method. Future research should explore the impact of parental education on student performance and investigate the effectiveness of the demonstration method in mathematics teaching.

Keywords: Demonstration approach; Mathematics demonstrative teaching style; Parental education; Mathematics performance; Effectiveness of teaching approaches.

1.0 Introduction

The shift of the mode of delivery brought forth several difficulties. Teachers in general, and math teachers in particular, were also greatly affected by this. Not just for that but for the students as well. This referred to what happened to them as "Learning Loss." In the field of education, people were familiar with the term. It mostly referred to the opportunities for learning that were lost when there was less connection between students and teachers during in-person instruction (Wahyudi, 2021). The phrase was problematic since it placed the blame for the loss on the students (Bennett, 2023). Since learning loss typically affects the younger generation, which is the country's and state's future, it is extremely harmful, especially in the long run.

To ensure that students do not fall behind in the ASEAN countries' educational advancement, the Philippine education system might adapt its curriculum and implement creative teaching techniques in response to this issue.

As a result, math teachers ought to provide their students with creative teaching and learning strategies. For this problem, they ought to use the demonstrative approach. The math teacher did more than merely discuss the material; instead, they actively participated in a learning exercise (Labarosa, 2013). Furthermore, when students struggle to make the connection between theories and real-world applications, a demonstrative approach to teaching and learning is taken (Dr. Khan, 2020). This approach to teaching involves using real-world examples and imitations of solutions to illustrate certain processes and situations (Bahfen et al., 2020).

According to Janvic Mateo's post from 2022, the data from 2019 indicated that 90.9% of Filipino students were not able to read and comprehend a simple text. A spokesperson for the Department of Education, Michael Poa, once stated that hundreds of millions of children worldwide and their societies faced terrible consequences if they failed to learn the fundamentals of literacy, numeracy, and other subjects. These losses ran the risk of leaving a generation of students with less favorable future economic prospects (Molato-Gayares et al., 2022). Molato-Gayares et al. (2022) added that future productivity, both individually and nationally, is expected to decline. The approach of the demonstration was suitable for this circumstance. Because it made complex concepts easier for students to understand, this was an excellent teaching method (Yousafzai, 2022). Students gain mathematical skills and abilities by using this strategy.

The goal of the demonstrative teaching style was to get students interested in interacting with one another and potentially change their view of how tough the subject was. The majority of students perceived that mathematics was a strict, non-recreative science and that it was boring. Learning mathematics was one of the subjects that could be frightening (Mariyanto et al., 2023). This belief was reinforced when students' involvement in the subject was minimal, which led to low comprehension and poor performance (Mariyanto et al., 2023; Alhassan Bigson & Yussif, 2022). However, teachers should make an effort to inspire their students to study because it was their responsibility to support their critical thinking and acquisition of knowledge (Lessani et al., 2016).

With the use of the demonstration method, math teachers would be motivated, committed, and dedicated to handling the student's complexity (Haque & Sudhan Rao, 2018). Every teacher was aware that teaching mathematics presents unique challenges for them (Haser, Dogan, & Erhan, 2021). To convey content to students who are engaged in learning, math teachers must be skilled at utilizing the right learning strategies (Ayuwanti et al., 2021) that were demonstration methods as teaching approaches for them to raise their students' levels and conquer the obstacles that come with learning (Khalil, 2022).

According to Bennett (2023), students fell behind by more than .75 points in each grade level, particularly in mathematics. To tackle these issues, math teachers might help students strengthen their basic reading and numeracy skills (Angrist et al., 2021). Instead of memorization, math students need to improve their ability to follow directions from the teacher, participate actively, build on past information, and make sense of it (Emanet & Kezer, 2021). Students could increase their level of thinking and encourage involvement by using the math teacher's way as an example (Drs. Isa et al., 2020). Not only that but using this approach would make math lessons interesting (Thahir et al., 2019). Additionally, this approach helped students by enhancing their comprehension, holding their attention, and fostering lifelong learning. It could address students' learning loss by utilizing the six teaching techniques – planning, preparation, introduction, demonstration, and evaluation – that were appropriate for students of all ages (Yousafzai, 2022).

After the pandemic, many of the students are distracted by the gadgets. The students who have been addicted in using Android during previous online learning instead they abuse their devices to tend to play games, social media, and all kinds of other entertainment (Hamidi et al., 2023). This caused them a lot. According to observations, they cannot pass basic math, and forget basic calculation, and its processes to the point they do not know what to do with the math problems given by their math teachers because they fail to remember the basic or prior knowledge, they have no attention at all due to the distractions. That's why they achieve low grades. This is due to a lack of interest, motivation to learn, and courage to solve math. And sometimes it is because of the teacher's inappropriate methods and approaches to apply in the classroom. This study aims to establish that if the teachers use the demonstration method in teaching mathematics implemented properly in Mindanao State University-Sulu Senior High School there will be an improvement in the level of performance of the students.

This study also is to give answers specifically to the following research questions: What is the demographic profile of students in Mindanao State University-Sulu Senior High School Department in terms of gender, age, grade level, and parents' educational attainment?; What is the extent of impact of the demonstration method on mathematics teaching approaches among Senior High School students of Mindanao State University-Sulu in the context of subject-centered, students-centered, and teacher-centered?; Is there a significant difference in the extent of impact of demonstration method on mathematics teaching approaches among the students of Mindanao State University-Sulu when the data are grouped according to the demographic profile of the students in terms of gender, age, grade level, and parents educational attainment?; Is there a significant correlation between the extent of impact of the demonstration method on addressing learning loss among the students of Mindanao State University-Sulu in the context of subject-centered, students-centered, and teacher-centered?

2.0 Methodology

2.1 Research Design

The research design used in this investigation was the descriptive-correlational research design. According to Sirisilla (2023), researchers and scientists could obtain valuable insights into a certain group or phenomenon by utilizing the descriptive-correlational study design. This kind of study offered a thorough and precise image of the traits and actions of a specific group or subject. Jones (2021) stated in her post that descriptive-correlational research entailed gathering accurate and pertinent data on a phenomenon to pinpoint important variables and make reliable generalizations – all without intervening, affecting, or exercising control over the event. The survey research was specifically used in this study. Surveys were a subset of descriptive-correlational research in which information was gathered via questionnaires that were either self-administered or administered by interviewers (Sirisilla, 2023). Moreover, they could be conducted online, by mail, or in person, and they could gather both quantitative and qualitative data.

2.2 Research Participants

The research was conducted within the Senior High School Department situated on the campus of Mindanao State University-Sulu. Located approximately two kilometers from the center of Jolo, Mindanao State University-Sulu is positioned at Capitol Hills, Jolo, Sulu, in close proximity to the Provincial Office of Sulu. The participants in this study constituted 10% of the total student population, amounting to 191 out of 1,909 students enrolled in Grades 11 to 12 in the STEM and GAS strands during the 2023–2024 academic year. The selection of this 10% subset from the population was based on the guidance provided by Dr. Hill (1998), wherein he stipulated that for descriptive research, the sample size should be 10% of the population. In this study, the researcher employed stratified random sampling, a technique utilized when the population is classified into groups, from which respondents are chosen randomly for inclusion in the research sample. Furthermore, the selection process for this sampling method was designed to ensure impartiality, without favoring any particular student within the MSU-Sulu Senior High School department.

2.3 Research Instrument

The instruments utilized in this study were adapted from the research of Hamzah (2014), Ahmed et al. (2022), and McLain (2022), with modifications made to suit the specific context of this investigation. Subsequently, the questionnaire underwent rigorous review by a panel of two specialists, both faculty members of Sulu State College's Graduate Studies, to ensure its relevance and appropriateness to the present study and its local contexts. The questionnaire comprised two distinct sections. The first section delineated the demographic profile of the students, encompassing variables such as gender, age, grade level, and parental educational attainment. The second section investigated the impact of the demonstration method on students' mathematical teaching approaches, delineating three modalities: subject-centered, student-centered, and teacher-centered.

2.4 Data Gathering Procedure

The researcher administered the survey questionnaire onsite. The researcher provided a consent form to each adviser before administering the questionnaire attached therein was the consent form for the respondents.

2.5 Data Analysis

To analyze the data, various statistical instruments were employed for each research problem. Firstly, to address the initial research problem, the study utilized frequency distribution and percentage analysis. Secondly, in

response to the second research problem, the mean and standard deviation were calculated. Thirdly, to investigate potential differences based on gender and grade level, an independent samples t-test was conducted, while Analysis of Variance (ANOVA) was employed for the remaining profiles. Lastly, to explore correlations between variables, the researcher utilized the Pearson Product Moment Correlation. These statistical tools facilitated a comprehensive examination of the data, enabling the researcher to draw meaningful conclusions regarding the study's objectives.

3.0 Results and Discussion

3.1 Demographic Profile

Table 1 presents the demographic profile of the student-respondents in the MSU-Sulu Senior High School Department in terms of gender. The table indicates that out of 190 student-respondents, it is slightly skewed toward females who make up 52.1% (99), while males account for 47.9% (91). This implies that there is a relatively equal representation of both genders among students and that there is no preference based on gender in the admission process.

Table 1. Student-respondents' demographic profile in terms of gender

GENDER	FREQUENCY	PERCENTAGE
Male	91	47.9%
Female	99	52.1%

Table 2 presents the demographic profile of the student-respondents in the MSU-Sulu Senior High School Department in terms of age. The table indicates that out of 190 student-respondents, it is highly concentrated in the 17-18 years old group which makes up 70.5% (134), while 16 years old and below, and 19 years old and above account for 13.7% (26) and 15.8% (40), respectively. This implies that most of the students are in the typical age range for senior high school and that there are fewer students who are younger or older than the average.

Table 2. Student-respondents' demographic profile in terms of age

AGE	FREQUENCY	PERCENTAGE
16 years old and below	26	13.7%
17-18 years old	134	70.5%
19 years old and above	30	15.8%

Table 3 presents the demographic profile of the student-respondents in the MSU-Sulu Senior High School Department in terms of grade level. The table indicates that it is uneven with more students in grade 11 than in grade 12. Out of 190 student-respondents, there are 105 students in grade 11 making up 55.3%, and 85 students in grade 12 accounting for 44.7%. This implies that many of the students in the MSU-Sulu, SHS department involved in this study are in grade 11.

Table 3. Student-respondents' demographic profile in terms of grade level

GRADE LEVEL	FREQUENCY	PERCENTAGE
11	105	55.3%
12	85	44.7%

Table 4 presents the demographic profile of the student-respondents in the MSU-Sulu Senior High School Department in terms of parents' educational attainment. The table indicates that out of 190 student-respondents, 40.5% (77) are high school graduates, followed by 30% (57) who hold a bachelor's degree. Parents with elementary education, master's, and Ph.D. degrees indicate fewer responses, accounting for 14.7% (28), 10% (19) and 4.7% (9), respectively. This implies that most of the students come from families where the parents have at least a high school education and could potentially influence their academic performance.

Table 4. Student-respondents' demographic profile in terms of parents' educational attainment

PARENTS' EDUCATIONAL ATTAINMENT	FREQUENCY	PERCENTAGE
Elementary graduate	28	14.7%
High school graduate	77	40.5%
Bachelor's degree holder	57	30%
Master's degree holder	19	10%
Ph.D. degree holder	9	4.7%

3.2 Extent of Demonstration Method on Mathematics Teaching Approaches *Subject-Centered*

Table 5. Extent of demonstration method on Mathematics teaching approaches in the context of subject-centered

STATEMENTS	MEAN	SD	RATING
1. My math teacher explains the mathematics lesson clearly.	4.15	.792	Agree
2. My math teacher effectively teaches the students the problem-solving process.	4.12	.903	Agree
3. My math teacher consistently checks if the students understand the topic.	4.05	.831	Agree
4. My math teacher demonstrates strong communication skills in math problem-solving.	3.87	.864	Agree
5. The lessons are well-prepared and well-organized during the demonstration.	3.93	.842	Agree
6. My math teacher's explanations and demonstrations are easily understood.	3.82	.898	Agree
7. My math teacher allows sufficient time for student responses to engage everyone.	3.77	.840	Agree
8. At the start of the lesson, my math teacher clarifies the learning objectives.	3.89	.954	Agree
9. My math teacher prepares examples that are easily understood.	3.97	.945	Agree
10. My math teacher gives an overview of the content being demonstrated.	3.86	.938	Agree
11. I prefer that my math teacher put a lot of emphasis and the analysis of content.	3.82	.931	Agree
12. I understand better if my teacher gives lots of examples.	4.19	.963	Agree
13. My math teacher emphasizes to us how/what the lesson comes out in reality.	3.95	.910	Agree
14. My math teacher explains the content of the lesson better.	4.17	.869	Agree
15. Visual resources are used to enhance math problem-solving processes.	3.92	.812	Agree
TOTAL	3.97	0.663	AGREE

Legend: 4.50-5.00 = Strongly Agree (SA), 3.50-4.49 = Agree (A), 2.50-3.49 = Moderately Agree (MA), 1.50-2.49 = Disagree (D), 1.00-1.49 = Strongly Disagree (SD)

Table 5 shows the extent of demonstration methods in mathematics teaching approaches among senior high school students of Mindanao State University-Sulu in the context of subject-centered. The results indicated that student-respondents agree that the subject-centered influences the demonstration method in mathematics teaching approaches with a total weighted mean score of 3.97 and a standard deviation of 0.663. This means that the teaching approach is favorable and consistent.

The table suggests that the teacher's methods are well-received by the students. The students agree that the teacher explains the math lessons clearly, effectively teaches the problem-solving process, consistently checks their understanding, demonstrates strong communication skills, prepares and organizes the lessons well, uses visual resources, allows sufficient time for student responses, clarifies the learning objectives, prepares examples that are easily understood, gives an overview of the content being demonstrated, puts a lot of emphasis on the analysis of the content, and gives lots of examples. The highest mean score is 4.19, which corresponds to the statement "I understand better if my math teacher gives lots of examples." This implies that the students appreciate the use of examples as a way of demonstrating the math concepts and skills. The lowest mean score is 3.77, which corresponds to the statement "My math teacher allows sufficient time for student responses to engage everyone." This implies that the students may feel that the teacher could give more time for them to participate and interact during the lesson.

According to Abanador et al., (2014) research, teachers frequently employ a teacher-centered approach, but students seem to prefer a subject-centered approach. Based on the study's findings, an enrichment program was created to help students learn effectively by enabling them to adapt to different teaching modalities. Naturally, having a solid understanding of their subject was essential for an effective teacher in the context of subject-centered learning (Morrison-Saunders & Hobson, 2013).

Student-Centered

Table 6 shows the extent of demonstration methods in mathematics teaching approaches among senior high school students of Mindanao State University-Sulu in the context of student-centered. The results indicated that student-respondents agree that the student-centered influences the demonstration method in mathematics teaching approaches with a total weighted mean score of 3.92 and a standard deviation of 0.633. This means that the teaching approach is favorable and consistent.

The table suggests that the teacher's methods are well-received by the students. The students agree that the teacher serves as a facilitator, encourages peer-to-peer interaction and collaboration, engages students actively, encourages independent practice, gives interesting group activities, and develops students' problem-solving skills. They also agree that they effectively demonstrate what they understand from the teacher, explain the math

teacher's demonstration to their peers, clearly understand simple explanations, assist each of them when they are having difficulty with the activities, are actively involved, and learn with their own, and acquire basic knowledge and practical skills from the demonstration during this approach.

Table 6. Extent of demonstration method on Mathematics teaching approaches in the context of student-centered

STATEMENTS	MEAN	SD	RATING
1. My math teacher serves as a facilitator.	3.92	.875	Agree
2. Peer-to-peer interactions are encouraged by our teacher.	3.81	.860	Agree
3. We actively engage during the lesson proper.	3.84	.952	Agree
4. Independent practice is encouraged by our math teacher.	3.87	.872	Agree
5. After the demonstration, we effectively demonstrate what we understand from our math teacher.	3.92	.967	Agree
6. We can explain the math teacher's demonstration to our peers.	3.82	.937	Agree
7. We collaborate to explore math problems.	3.90	.894	Agree
8. We clearly understand simple explanations because we listen carefully to the demonstration of the lesson.	4.06	.852	Agree
9. My math teacher gives an interesting activity.	4.01	.908	Agree
10. My math teacher encourages us to develop our problem-solving skills.	3.95	.922	Agree
11. We assist each of us when we are having difficulty with the activities given by our math teacher after demonstrating on how to solve it.	4.09	.849	Agree
12. We are actively involved and learn on our own.	3.87	.951	Agree
13. During this lesson, the classroom is often noisy and busy. Teacher-student collaboration is encouraged.	3.79	.923	Agree
14. My math teacher often gives us a group activity that we are enjoying actively participated, discussed, and shared our output to the class.	3.98	.965	Agree
15. We acquire basic knowledge and practical skills from the demonstration of this approach.	3.97	.908	Agree
TOTAL	3.92	0.633	AGREE

The highest mean score is 4.09, which corresponds to the statement "We assist each of us when we are having difficulty with the activities given by our math teacher after demonstrating how to solve it." This implies that the students have a high level of peer support and cooperation in learning math activities. The lowest mean score is 3.79, which corresponds to the statement "During this lesson, the classroom is often noisy and busy. Teacher-student collaboration is encouraged." This implies that the students have a moderate level of engagement and interaction in the lesson because some students may find the classroom environment too noisy or busy or that the teacher-student collaboration is not well-structured or balanced.

According to Ehiwario et al., (2019), the student-centered demonstration method improved the effectiveness of mathematics instruction and learning. Students learning of skills in schools was impacted by teachers' adoption of student-centered techniques (Andiema, 2016). To help students fully grasp and learn successfully about their job choices, teachers preferred to use a variety of teaching approaches rather than keeping to just one (Abanador et al., 2014). It could be concluded that the student-centered methods were more effective in terms of math achievement than the teacher-centered ones (Emanet & Kezer, 2021).

Teacher-Centered

Table 7 shows the extent of demonstration methods in mathematics teaching approaches among senior high school students of Mindanao State University-Sulu in the context of student-centered. The results indicated that student-respondents agree that the teacher-centered influences the demonstration method in mathematics teaching approaches with a total weighted mean score of 3.94 and a standard deviation of 0.679. This means that the teaching approach is favorable and consistent.

The table suggests that the teacher's methods are well-received by the students. The students agree that the teacher enforces discipline, plays an active role in the learning process, monitors students' progress by providing feedback on the assessments to evaluate them if they listen and understand the concepts, willingly explains concepts again when needed, elaborates on rules and problem-solving processes and provides clear explanations, encourages students to construct solutions following what is taught to them dependently from the teacher, practices effective classroom management, supervises and moves around to support and check during activities, and does not interact with the students during discussion of the lessons. The highest mean score is 4.09, which corresponds to

the statement “My math teacher willingly explains concepts again when needed.” This implies that the math teacher is responsive, patient, and supportive of students’ learning needs.

Table 7. Extent of demonstration method on Mathematics teaching approaches in the context of teacher-centered

STATEMENTS	MEAN	SD	RATING
1. Discipline is enforced by our teacher.	3.98	.888	Agree
2. My math teacher plays an active role in the learning process.	3.96	.942	Agree
3. My math teacher provides feedback on activities, quizzes, and assignments.	4.03	.934	Agree
4. My math teacher willingly explains concepts again when needed.	4.09	.941	Agree
5. My math teacher elaborates on rules and problem-solving processes.	3.99	.920	Agree
6. My math teacher encourages us to construct our solutions following what is taught to us.	4.03	.934	Agree
7. Effective classroom management is practiced because no one will try to disturb our math teacher during the discussions.	3.94	.833	Agree
8. My math teacher provides clear explanations.	4.04	.994	Agree
9. We are encouraged to become dependent on our math teacher.	3.78	.851	Agree
10. We become a passive learner at this time.	3.89	.893	Agree
11. My math teacher frequently supervises us during activities.	3.84	.937	Agree
12. We have no interactions with our math teacher during discussions of the lesson.	3.63	1.104	Agree
13. My math teacher monitors our progress.	3.88	.855	Agree
14. After discussion and demonstration of the lesson of our math teacher, assessment is being followed to evaluate us when we listen and understand the concepts.	4.00	.842	Agree
15. My math teacher moves around to support and check our activities.	4.07	.998	Agree
TOTAL	3.94	0.679	AGREE

The lowest mean score is 3.63, which corresponds to the statement “We have no interactions with our math teacher during discussions of the lesson.” This implies that the math teacher is not very interactive or engaging during the lesson. In China, teacher-centered instruction appears to be a successful method for teaching mathematics (Zhao, Valcke, Desoete, Sang, & Zhu, 2014). When taught using the teacher-centered approach, students from lower socioeconomic backgrounds demonstrated improved achievement (Camac, 2018). According to Ahmed et al. (2022), the teacher-centered approach has a positive effect on students' learning, and students' attitudes were supportive of it at the university level. Fortunately, the most efficient strategy for instructing students was to combine teacher-centered and student-centered teaching approaches (Ganyaupfu, 2013).

3.3 Difference in the Extent of Demonstration Method on Mathematics Teaching Approaches

Table 8 presents the difference in the extent of demonstration methods on mathematics teaching approaches among the students of Mindanao State University–Sulu when data are grouped according to gender. The table shows that the mean difference and probability values for each approach are not significant at alpha 0.05. This means that the extent of the demonstration method on mathematics teaching approaches has no difference on the perceptions of male and female student-respondents. This implies that the student-respondents perceive the extent of the demonstration method on mathematics teaching approaches in the same way regardless of their gender. Therefore, the hypothesis which states that “There is no significant difference in the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University–Sulu when data are grouped according to gender” is accepted.

Table 8. Difference in the extent of demonstration method on mathematics teaching approaches when data are grouped according to gender

VARIABLES	GROUPING	MEAN	SD	MEAN DIFFERENCE	T	SIG.	DESCRIPTION
Subject-centered	Male	3.9678	.6111	.00278	.029	.977	Not Significant
	Female	3.9650	.7096				
Student-centered	Male	3.9502	.6387	.05725	.622	.534	Not Significant
	Female	3.8929	.6294				
Teacher-centered	Male	3.9839	.6166	.08018	.818	.414	Not Significant
	Female	3.9037	.7331				

*Significant at alpha 0.05

Regardless of gender, the demonstration method increased students' interest in and performance in mathematics (Ehiwario et al., 2019). Using the proper techniques, approaches, and media, it was essential to actively include students in the learning process (Mariyanto et al., 2023). According to studies by Samosir & Nanda (2022) and Ehiwario et al., (2019), there was no difference in the academic achievement of male and female students. Teachers could be included in learning activities to improve student learning outcomes and create an active learning

atmosphere. In Onyeka et al., study (2023) discovered that there was no discernible variation in students' memory for the application of the demonstration teaching approach based on gender.

Table 9. Difference in the extent of demonstration method on mathematics teaching approaches when data are grouped according to age

SOURCES OF VARIATION		SUM OF SQUARES	DF	MEAN SQUARE	F	SIG.	DESCRIPTION
Subject-centered	Between Groups	.313	2	.156	.354	.702	Not Significant
	Within Groups	82.645	187	.442			
	Total	82.958	189				
Student-centered	Between Groups	.449	2	.224	.557	.574	Not Significant
	Within Groups	75.248	187	.402			
	Total	75.697	189				
Teacher-centered	Between Groups	3.176	2	1.588	3.535*	.031	Significant
	Within Groups	84.014	187	.449			
	Total	87.190	189				

Table 9 presents the difference in the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University–Sulu when data are grouped according to age. The table shows that except for the teacher-centered approach, the F-values and probability values for each approach are not significant at alpha 0.05. This means that the perceptions of 16 years old and below student-respondents on the extent of demonstration method in the subject-centered and student-centered mathematics teaching approaches have no difference from those of 17 to 18 years old and 19 years old and above, or vice versa, but 16 years old and below, and 17 to 18 years old differ in teacher-centered approach, as shown in table 3.2.1. This implies that the student-respondents perceive the extent of demonstration method in the subject-centered and student-centered mathematics teaching approaches in the same way regardless of their age. However, they perceive differently when it comes to the teacher-centered approach. Therefore, the hypothesis which states that, “There is no significant difference in the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University–Sulu when data are grouped according to age” is accepted.

Table 10. Multiple comparisons of demonstration methods on mathematics teaching approaches by age

DEPENDENT VARIABLE	(I) GROUPING BY AGE	(J) GROUPING AGE	MEAN DIFFERENCE (I - J)	STD. ERROR	SIG.
Teacher-centered	16 years old and below	17-18 years old	-.37811*	.14364	.025
		19 years old and above	-.26667	.17960	.301

*The mean difference is significant at the 0.05 level

A Post Hoc Analysis using Tukey test (Table 10) was conducted to identify which among groups classified according to age have different levels of mean in the extent of teacher-centered approach when data are grouped according to students-respondents' demographic profile in terms of age. It shows that 16 years old and below students-respondents obtained the mean difference of -.37811* with Standard Error of .14364 and p-value of .025 which is significant at alpha 0.05 over 19 years old and above students-respondents.

Table 11. Difference in the extent of demonstration method on mathematics teaching approaches according to grade level

VARIABLES	GROUPING	MEAN	SD	MEAN DIFFERENCE	T	SIG.	DESCRIPTION
Subject-centered	Grade 11	3.8203	.6793	-.3264	-3.47*	.001	Significant
	Grade 12	4.1467	.5973				
Student-centered	Grade 11	3.8470	.6350	-.1640	-1.79	.076	Not Significant
	Grade 12	4.0110	.6220				
Teacher-centered	Grade 11	3.8178	.6876	-.2779	-2.86*	.005	Significant
	Grade 12	4.0957	.6399				

*Significant at alpha 0.05

Table 11 presents the difference in the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University–Sulu when data are grouped according to grade level. The table shows that except for student-centered approach, the mean difference and probability values for each approach are significant at alpha 0.05. This means that the extent of demonstration method in the subject-centered and teacher-centered mathematics teaching approaches has difference on the perceptions of grade 11 and grade 12 student-respondents, but they do not differ in student-centered approach. This implies that the student-respondents perceive the extent of demonstration method in the subject-centered and teacher-centered mathematics teaching approaches in different ways regardless of their grade level. However, they don't perceive

differently when it comes to the student-centered approach. Therefore, the hypothesis which states that, “There is no significant difference in the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University–Sulu when data are grouped according to grade level” is rejected.

Based on research by Basheer et al., (2017), the demonstrations were a useful tool for improving students' comprehension of certain concepts as well as their motivation and enthusiasm in learning mathematics. When students were actively working to solve problems during class activities, they more effectively develop a deeper comprehension of the key concepts (Ganyaupfu, 2013). According to studies by Umoru & Haruna (2018) and Isa et al., (2022), most teaching strategies, particularly the demonstration technique, had a significant favorable impact on students' academic achievement. This approach to learning mathematics could enhance student performance at all grade levels (Mariyanto, Tembang, Betaubun, & Niatun, 2023).

Table 12. Difference in the extent of demonstration method on mathematics teaching approaches according to parents' educational attainment

SOURCES OF VARIATION		SUM OF SQUARES	DF	MEAN SQUARE	F	SIG.	DESCRIPTION
Subject-centered	Between Groups	.427	4	.107	.239	.916	Not Significant
	Within Groups	82.530	185	.446			
	Total	82.958	189				
Student-centered	Between Groups	1.574	4	.393	.982	.419	Not Significant
	Within Groups	74.123	185	.401			
	Total	75.697	189				
Teacher-centered	Between Groups	.343	4	.086	.183	.031	Not Significant
	Within Groups	86.847	185	.469			
	Total	87.190	189				

*Significant at alpha 0.05

Table 12 presents the difference in the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University–Sulu when data are grouped according to age. The table shows that the F-values and probability values for each approach are not significant at alpha 0.05. This means that the perceptions of student-respondents, whose parents' educational attainment is elementary, on the extent of demonstration method in mathematics teaching approaches have no difference from those whose parents' educational attainment is high school graduate, bachelor's degree holder, master's degree holder, and Ph.D. degree holder, or vice versa. This implies that the student-respondents perceive the extent of demonstration method in mathematics teaching approaches in the same way regardless of their parents' educational attainment. Therefore, the hypothesis which states that, “There is no significant difference in the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University–Sulu when data are grouped according to age” is accepted. Based on the study of Camac's (2018) that the teacher-centered approach yielded higher academic achievement for students with disabilities and with at-risk students, within all social classes and races.

3.4 Relationship Among Variables

Table 13 presents the correlation among the sub-categories subsumed under the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University–Sulu. The table shows that the computed Pearson correlation Coefficients (Pearson *r*) between these variables are all significant at alpha 0.05.

Table 13. Correlation among the sub-categories subsumed under the extent of demonstration method on mathematics teaching approaches

VARIABLES		PEARSON R	SIG.	N	DESCRIPTION
Dependent	Independent				
Subject-centered	Student-centered	.841*	.000	190	Very High
	Teacher-centered	.840*	.000	190	Very High
Student-centered	Teacher-centered	.861*	.000	190	Very High

*Correlation coefficient is significant at alpha .05

The table shows that there is a very high positive degree of correlation among the sub-categories subsumed under the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University–Sulu. This means that the higher the extent of demonstration method for one teaching approach, the higher the extent of demonstration method for another teaching approach. This implies that if the subject-centered approach has a high extent of demonstration method, then the student-centered and teacher-centered approaches

also have a high extent of demonstration method. Therefore, the hypothesis which states that, “There is no significant correlation among the sub-categories subsumed under the extent of demonstration method on mathematics teaching approaches among the students of Mindanao State University-Sulu” is rejected. In the study of Azizah and Kumala's (2023) research, there was a correlation between the demonstration method used in the classroom and students' comprehension of mathematical topics. Following the use of the demonstration approach, there was an improvement in the cognitive growth of number recognition (Bahfen et al., 2020). Students who were instructed using this technique of instruction maintained it (Onyeka et al., 2023).

4.0 Conclusion

The study concludes that:

- a) Student-respondents are mostly female, aged 17-18 years old, in grade 11, and have parents with high school education. These findings suggest that the sample is representative of the typical senior high school students in the MSU-Sulu, SHS department. However, the profile also indicates that there is a lack of diversity in terms of parents' educational attainment as most of the students have parents who are high school graduates or bachelor's degree holders. This may limit the generalizability of the study to other populations with different parental educational backgrounds.
- b) Student-respondents of Mindanao State University-Sulu have a positive perception of the demonstration method in mathematics teaching approaches in different contexts. The mean scores of the three contexts (subject-centered, student-centered, and teacher-centered) rated as agreeable among the student-respondents. The standard deviations of the three contexts are also relatively low suggesting that the responses are consistent and have a low degree of variation.
- c) The demonstration method in mathematics teaching has varying effects on the perceptions of student-respondents of Mindanao State University-Sulu depending on their demographic profile. The student-respondents have consistent perceptions of the demonstration method regardless of their gender or parents' educational attainment, but they have different perceptions depending on their age or grade level. The teacher-centered approach seems to be more appealing to older students, while the subject-centered and student-centered approaches are equally preferred by all age groups. The student-respondents in grade 12 tend to have more favorable perceptions of the demonstration method than those in grade 11, except when the method is student-centered.
- d) The results of the correlation analysis indicate that the extent of the demonstration method for the subject-centered, student-centered, and teacher-centered approaches among the student-respondents of Mindanao State University-Sulu are all positively and significantly correlated with each other. This means that the students' perceptions of the demonstration method are not affected by the type of approach, but rather by how well and how efficiently the method is implemented.

This study recommends the following:

- a) School heads should support and encourage the teachers by providing them with adequate resources, training, and feedback, and also monitor and evaluate the effectiveness of the method in improving the students' academic performance and attitude towards mathematics.
- b) Mathematics teachers should use the demonstration method in mathematics teaching as it is perceived positively by the students consider the differences among their students, and adjust the pace, depth, and scope of the demonstration accordingly.
- c) Parents should not only be aware of the benefits of the demonstration method in mathematics teaching but also support their children's learning by communicating with the teachers and the school heads about their children's progress and challenges in mathematics.
- d) Students should actively participate in the demonstration method in mathematics teaching by observing, asking questions, and practicing the skills and concepts taught.
- e) Future studies may consider including more students with parents who have lower or higher educational attainment to explore the possible effects of parental education on students' academic performance and attitudes.
- f) Future researchers should also investigate the impact of the demonstration method on the students' academic performance and learning outcomes in mathematics. This would help to evaluate the effectiveness and efficiency of the demonstration method in mathematics teaching and learning.

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The author solely written this article. Thus, there are no co-authors for this study.

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The author declared that he has no conflicts of interest as far as this study is concerned.

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9.0 References

- Abanador, J. R., Buesa, G. D., Remo, G. L., & Mañibo, J. (2014). Teaching Methods and Learning Preferences in the Engineering Department of an Asian University. *International Journal of Academic Research in Progressive Education and Development*, 3(1), 1–15. <https://doi.org/10.6007/ijarped/v3-i1/499>
- Ahmed, D., Sultan, D., Kousar, M., Basit, H., Zaid, D., & Bano, S. (2022). Effectiveness Of Teacher's Centered Approach On Student's Learning At University Level. *Journal of Positive School Psychology*, Vol. 6, No. 10, 415-428, <http://journalppw.com>. Retrieved from Journal of Positive School Psychology.
- Aisah, A. (2021, October). The Effect Of Using The Demonstration Method On Students' Skills In Practicing Wudhu. Retrieved from *Interdisciplinary Social Studies*: <https://iss.internationaljournallabs.com/index.php/iss>. <https://doi.org/10.55324/iss.v1i1.2>
- Alhassan Bigson, M., & Yussif, Z. (2022). Enhancing Students' Performance in Senior High School Mathematics through the Learner-centered Approach: A Case in T. I. Ahmadiyya Senior High School, WA, Ghana. *International Journal of Research and Innovation in Social Science (IJRISS)*, ISSN 2454-6186, 6(1), 508-523. <https://doi.org/10.47772/ijriss.2022.6129>
- Altun, M. (2023). The Ongoing Debate over Teacher Centered Education and Student Centered Education. *International Journal of Social Sciences & Educational Studies*, 10(1), 106-110. <https://doi.org/10.23918/ijsses.v10i1p106>
- Andiema, N. C. (2016). Effect of Child Centred Methods on Teaching and Learning of Science Activities in Pre-Schools in Kenya. *Journal of Education and Practice*, Vol.7, No.27, pp. 1-9.
- Angrist, N., de Barros, A., Bhula, R., Chakera, S., Cumiskey, C., DeS tefano, J., . . . Stem, J. (2021, May 3). Building back better to avert a learning catastrophe: Estimating learning loss from COVID-19 school shutdowns in Africa and facilitating short-term and long-term learning recovery. Retrieved from *International Journal of Educational Development*: <https://doi.org/10.1016/j.ijedudev.2021.102397>
- Ardington, C., Wills, G., & Kotze, J. (2021, August 6). COVID-19 learning losses: Early grade reading in South Africa. Retrieved from *International Journal of Educational Development*: <https://doi.org/10.1016/j.ijedudev.2021.102480>
- Astuti, R., & Katoningsih, S. (2021). Implementation Of Demonstration Methods In Early Children's Akhlak Education. *Early Childhood Research Journal (ECRJ)*, 4(2), 38-45, <http://journals.ums.ac.id/index.php/ecrj>. <https://doi.org/10.23917/ecrj.v4i2.12105>
- Ayuwanti, L., Marsigit, & Siswoyo, D. (2021). Teacher-student interaction in mathematics learning. *International Journal of Evaluation and Research in Education (IJERE)*, 10(2), 660–667, ISSN: 2252-8822, DOI: 10.11591/ijere.v10i2.21184. <https://doi.org/10.11591/ijere.v10i2.21184>
- Azizah, A., & Kumala, F. (2023). The Influence of the Demonstration Method with the Help of Geogebra Software on the Ability to Understand Mathematical Concepts. *AlphaMath: Journal of Mathematics Education*, 9(1), 77-87, <http://jurnal.nasional.ump.ac.id/index.php/alphamath/>.
- Bahfen, M., Khaerunnisa, Hadi, M., Madyawati, L., & Sulistyaningtyas, R. (2020). Improving Number Ability Through Demonstration Method in Children Aged 4-5 Years. *Advances in Social Science, Education and Humanities Research*, volume 436, 1099-1101, <http://creativecommons.org/licenses/by-nc/4.0/>. <https://doi.org/10.2991/assehr.k.200529.230>
- Basheer, A., Hugerat, M., Kortam, N., & Hofstein, A. (2017). The Effectiveness of Teachers' Use of Demonstrations for Enhancing Students' Understanding of and Attitudes to Learning the Oxidation-Reduction Concept. *ResearchGate: EURASIA Journal of Mathematics Science and Technology Education*, 13(3), 555-570, DOI 10.12973/eurasia.2017.00632a.
- Bature, I. (2020). The Mathematics Teachers Shift from the Traditional Teacher-Centred Classroom to a More Constructivist Student-Centred Epistemology. *Open Access Library Journal*, 7: e6389, <https://doi.org/10.4236/oalib.1106389>.
- Bennett, B. (2023). How to tackle unfinished learning in math instruction in your district. Khan Academy. <https://blog.khanacademy.org/unfinished-learning-math-instruction-kad/>
- Butawan, J. S., Egenias, R. N., & Sebastian, J. D. (2021). Instruction on Philippine History Class in developing Higher Order Thinking Skills (HOTS). *Interdisciplinary Journal of Applied and Basic Subjects*, 1(2), 69-75.
- Camac, K. (2018). Student-Centered Approach Vs. Teacher-Centered Approach: Which Is More Effective. (Doctoral dissertation). Retrieved from <https://scholarcommons.sc.edu/etd/4834>
- Cherry, K. (2023, March 12). B.F. Skinner's Life, Theories, and Influence on Psychology. Retrieved from verywell mind: <https://www.verywellmind.com/b-f-skinner-biography-1904-1904-1990-2795543#:~:text=Skinner's%20Theory%20of%20Learning%3A%20Operant,environment%20and%20leads%20to%20consequences>.
- Daluba, N. E. (2013). Effect of Demonstration Method of Teaching on Students' Achievement in Agricultural Science. *World Journal of Education*, ISSN 1925-0746 E-ISSN 1925-0754, 3(6), www.sciedu.ca/wje. <https://doi.org/10.5430/wje.v3n6p1>
- Dr. Alam, M. (2023). From Teacher-Centered To Student-Centered Learning: The Role Of Constructivism And Connectivism In Pedagogical Transformation. *Conflux: Journal Of Education*, 11(2), <https://cjoe.nasublishers.com>.
- Dr Hill, R. (1998). WHAT SAMPLE SIZE IS "ENOUGH" in INTERNET SURVEY RESEARCH? *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century. (IPCT: AECT)*, vol. 6, No. 3-4
- Dr. Isa, S. G., Dr. Mammam, M. A., Badar, Y., & Bala, T. (2020). The Impact Of Teaching Methods On Academic Performance Of Secondary School Students In Nigeria. *International Journal of Development Research*, 10(7), 37382-37385, <https://doi.org/10.37118/ijdr.18223.07.2020>.
- Dr. Khan, S. (2020, February 5). Demonstration method. Retrieved from Education: Education Awareness and Research: <https://research-education-edu.blogspot.com/2020/02/demonstration-method.html?m=1>
- Dr. Kumar Shah, R. (2020). Similarities and Difference between LCT and TCT. *International Journal of Creative Research Thoughts (IJCRT)*, 8(7), 5694-5719.
- Dr. Kurt, S. (2021, February 21). Constructivist Learning Theory. Retrieved from Educational Technology: <https://educationaltechnology.net/constructivist-learning-theory/>
- Dr. Sebulen, M. T., & MALIT, L. S. (2023). Unlocking Academic Excellence- Evaluating the Impact of Learner-Centered Teaching on BSED GEN SCI Students of Baguio Central University. *Iconic Research And Engineering Journals*, 6(12), 545-549.
- Ehiwario, J., Aghamie, S., & Azagbaekwue, A. (2019). The Effect Of Demonstration Method On The Teaching And Learning Of Mathematics In Secondary Schools In Ika South Local Govt. pp. 37- 49. <https://www.man-nigeria.org.ng/issues/ABA-EDU-2019-6.pdf>
- Emanet, E., & Kezer, F. (2021, April 1). The effects of student-centered teaching methods used in mathematics courses on mathematics achievement, attitude, and anxiety: a meta-analysis study. Retrieved from *Participatory Educational Research (PER)*: Vol. 8(2), pp. 240-259, <http://dx.doi.org/10.17275/per.21.38.8.2>. <https://doi.org/10.17275/per.21.38.8.2>
- Ganyaupfu, E. (2013). Teaching Methods and Students' Academic Performance. *International Journal of Humanities and Social Science Invention*, 2(9), 29-35. https://www.researchgate.net/publication/264124430_Teaching_Methods_and_Students'_Academic_Performance
- Garcia, R., Dr. Tan, R., Dr. Florendo, J., & Dr. Santos, N. (2020). Student-Centered Learning In General Education In A Private University In Manila: An Analysis. *Globus An International Journal of Art & Higher Education*, 9(2), 16-21.
- Hamidi, A., Jumadi, J., Nurohman, S., & Febrian, A. (2023). Teacher and Parent Perceptions of Student's Learning Loss in Post-Pandemic Science Learning. Retrieved from *Jurnal Penelitian Pendidikan IPA*: 9(8), 6439-6444. <https://doi.org/10.29303/jppipa.v9i8.3603>
- Hamzah, F. (2014). Effectiveness of Student Centered Approach to Improve Mathematics Achievement among Primary 4 Students. https://www.academia.edu/32400377/Effectiveness_of_Student_Centered_Approach_to_Improve_Mathematics_Achievement_among_Primary_4_Students_Melor_at_Fatihah_binti_Hamzah
- Haque, M., & Sudhan Rao, M. (2018). Implications for Curriculum, Materials, Teaching and Testing Strategies in a Saudi Arabian University. *The Turkish Online Journal of Educational Technology (TOJET)*, volume 17, issue 3, pp. 54-64.
- Haser, C., Dogan, O., & Erhan, G. (2021, December 7). Tracing students' mathematics learning loss during school closures in teachers' self-reported practices. Retrieved from *International Journal of Educational Development*: <https://doi.org/10.1016/j.ijedudev.2021.102536>
- Hassan, M. U., & Akbar, R. A. (2020). Tracing the Effects of Teachers' Centered Teaching Methods on Students' Achievement Scores: Secondary Level Study. *Bulletin of Education and Research*, Vol. 42, No. 1 pp. 29-43.

- Isa, S. G., Mammam, M. A., Bala, Y. A., & Badar, Y. (2022). The Impact of Teaching Methods on Academic Performance of Secondary School Students in Nigeria. ResearchGate. DOI:10.37118/ijdr.18223.07.2020. <https://doi.org/10.37118/ijdr.18223.07.2020>
- Jones, E. (2021). A Guide To Descriptive Research Design: Definition & Types. Retrieved from My Assignment Help: <https://myassignmenthelp.com/blog/descriptive-research/>
- Kassem, H. M. (2019). The Impact of Student-Centered Instruction on EFL Learners' Affect and Achievement. *English Language Teaching*, Vol. 12, No. 1, pp. 134-153. <https://doi.org/10.5539/elt.v12n1p134>
- Katz, D. A. (2022). The Art Of Effective Demonstrations. Retrieved from <http://www.chymist.com/THE%20ART%20OF%20EFFECTIVE%20DEMONSTRATIONS.pdf>
- Khadka, J., Joshi, D., Adhikari, K., & Khanal, B. (2022). Learner-Centered Instruction: Teachers' Practice in Online Class of Mathematics During Covid-19 Pandemic in Nepal. *International Journal of Instruction*, 15(3), 831-852. <https://doi.org/10.29333/iji.2022.15345a>
- Khalil, I. A. (2022, August 06). How is learning loss treated in mathematics classrooms at the intermediate stage? A mixed methods study. Retrieved from *Education 3-13 International Journal of Primary, Elementary and Early Years Education*: <https://doi.org/10.1080/03004279.2022.2108873>
- Kim, S. (2018). Technological, Pedagogical, and Content Knowledge (TPACK) and Beliefs of Preservice Secondary Mathematics Teachers: Examining the Relationships. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(10), em1590. <https://doi.org/10.29333/ejmste/93179>
- Labarosa, J.-v. (2013, November 26). Approaches teaching mathematics. Retrieved from slideshare: a Scribd company: <https://www.slideshare.net/janvylabarosa/approaches-in-teaching-mathematics>
- Lathan, J. (2023). Complete Guide to Student-Centered vs. Teacher-Centered Learning. Retrieved from University of San Diego. <https://onlinedegrees.sandiego.edu/teacher-centered-vs-student-centered-learning/>
- Lessani, A. (2017). Comparison Of New Mathematics Teaching Methods With Traditional Method. *PEOPLE: International Journal of Social Sciences*, ISSN 2454-5899, 3(2), 1285-1297. <https://dx.doi.org/10.20319/pijss.2017.32.12851297>
- Lessani, A., Md. Yunus, A., Abu Bakar, K., & Khameneh, A. (2016). Comparison of Learning Theories in Mathematics Teaching Methods. Fourth 21st CAF Conference in Harvard, ISSN: 2330-1236, Vol. 9(1), 165-174.
- Loiser, P., & Endne, W. (2022). Effect of demonstration method on learning success. Retrieved from *International Journal of Curriculum Development, Teaching and Learning Innovation*: <https://trigin.pelrus.ac.id/index.php/Curriculum/index>. <https://doi.org/10.35335/curriculum.v1i1.51>
- Main, P. (2022, October 24). Social Learning Theory-Bandura. Retrieved from *Structural Learning*: [https://www.structural-learning.com/post/social-learning-theory-bandura#:~:text=Albert%20Bandura%20\(1901%E2%80%931994\),process%20is%20called%20observational%20learning](https://www.structural-learning.com/post/social-learning-theory-bandura#:~:text=Albert%20Bandura%20(1901%E2%80%931994),process%20is%20called%20observational%20learning)
- Main, P. (2023, March 28). Skinner's Theories. Retrieved from *Structural Learning*: <https://www.structural-learning.com/post/skinners-theories#:~:text=The%20Behavioral%20Psychologist%20B.%20F.%20Skinner's,to%20the%20human%20behavior%20conditioning>
- Makiyah, S. (2021). Increasing Teaching Ability Teachers With Demonstration Method In Class 3 Students of Elementary School. Workshop Penguatan Kompetensi Guru 2021, SHIES: Conference Series 4 (5), 335- 344. <https://doi.org/10.20961/shes.v4i5.66020>
- Mariyanto, W., Tembang, Y., Betaubun, M., & Niatun, A. (2023). Demonstration Method: An Effective Alternative in Improving Student Mathematics Learning Outcomes in Elementary School. *Edumaspul - Jurnal Pendidikan*, 7(1), 1413-1424. <https://doi.org/10.33487/edumaspul.v7i1.6096>
- McLain, M. (2022). Developing perspectives on 'the demonstration' as a signature pedagogy in design and technology education. Retrieved from *International Journal of Technology and Design Education*: <https://doi.org/10.1007/s10798-019-09545-1>
- Molato-Gayares, R., Park, A., Raitzer, D., Suryadarma, D., Thomas, M., & Vandenberg, P. (2022, July). How to Recover Learning Losses from COVID-19 School Closures in Asia and the Pacific. Retrieved from *ABD BRIEFS*. <https://doi.org/10.22617/brief220301-2>
- Morrison-Saunders, A., & Hobson, J. (2013). Being subject-centred: A philosophy of teaching and implications for higher education. *Issues in Educational Research*, 23(2), 212-226. <https://www.iier.org.au/iier23/morrison-saunders.pdf>
- Oko, J. (2022). Teaching methods that influence Grade 12 students' mathematics results in Port Moresby, Papua New Guinea. *Journal of Applied Learning & Teaching*, ISSN : 2591-801X, 5(2), 132-142. <http://journals.sfu.ca/jalt/index.php/jalt/index>. <https://doi.org/10.37074/jalt.2022.5.2.9>
- Okotubu, J. (2020). Effect of Demonstration Teaching Method on Students' Academic Achievement and Retention in Auto Mechanics Trade in Technical Colleges in Delta State. *International Journal of Education and Evaluation*, 6(5), www.iiardpub.org.
- Onyeka, E. C., & Okoye, G. N. (2023). Effectiveness Of Demonstration Teaching Method On Students' Academic Achievement In Mathematics In Rivers State Nigeria. ResearchGate: *African Journal of Educational Management, Teaching and Entrepreneurship Studies (AJEMATES)*, 8 (2), 32-42. <https://ajemates.org>
- Onyeka, E. C., Dr. Eze, F. B., & K., O. O. (2023). Upgrading Students' Academic Retention In Mathematics Using Demonstration Teaching Method In Rivers State Nigeria. *Advance Journal of Education and Social Sciences*, ISSN: 2237 - 1470, 8(3), <https://aspjournals.org/ajess>.
- Pulungan, S. (2021). Application Of Demonstration Method To Improve Mathematics Learning Achievement Of Class 1 Students SD 0511 Batang Tegal JAS T.P 2020/2021. *Indonesian Journal of Basic Education*, 4(2), 247 - 254.
- Samosir, A., & Nanda, F. (2022). The Influence of Demonstration Methods with Media on Mathematics Learning Outcomes SDN 091546 Unong Manik, Simalungun Regency. *International Journal of Educational Research Excellence (IJERE)*, e-ISSN: 2830-7933, 1(2), 245-247. <https://ejournal.ipinternasional.com/index.php/ijere>. <https://doi.org/10.55299/ijere.v1i2.342>
- Samuelsson, J. (2010). The Impact of Teaching Approaches on Students' Mathematical Proficiency in Sweden. *International Electronic Journal of Mathematics Education - IEMJES*, Vol.5, No.2, pp. 61-78. <https://doi.org/10.29333/iejme/250>
- Schreurs, J., & Dumbaveanu, R. (2014). A Shift From Teacher Centered To Learner Centered Approach. *ijEP - Volume 4, Issue 3, 2014*, 4(3), 36-41. <http://dx.doi.org/10.3991/ijep.v4i3.3395>
- Serin, H. (2018). A Comparison of Teacher-Centered and Student-Centered Approaches in Educational Settings. ResearchGate: *International Journal of Social Sciences & Educational Studies*, ISSN 2520-0968 (Online), ISSN 2409-1294 (Print), 5(1), 164-167. <https://www.researchgate.net/publication/328429101>. <https://doi.org/10.23918/ijsses.v5i1p164>
- Sirisilla, S. (2023, February 20). Bridging the Gap: Overcome these 7 laws in descriptive research design. Retrieved from <https://www.enago.com/academy/descriptive-research-design/#:~:text=Descriptive%20research%20design%20is%20a,a%20particular%20population%20or%20subject>
- Soe, M., & Nyunt, S. (2018). A Study Of The Effectiveness Of Demonstration Method On Grade Nine Students' Achievement In Physics. *J. Myanmar Acad. Arts Sci.* 2018 Vol. XVI. No.9A, Vol. 16(9A), 361-383.
- Storey, N., & Zhang, Q. (2021). A Meta-analysis of COVID Learning Loss. DOI:10.35542/osf.io/qekw2. https://www.researchgate.net/publication/354515783_A_Meta-analysis_of_COVID_Learning_Loss
- Suhulah, G., Ibrahim, M., Tabroni, I., Nurhadi, S., & Suhartini. (2022). Demonstration Method: Concrete Innovation Increases Student Learning Motivation. *International Journal of Integrative Sciences (IJIS)*, Vol.1(1), 33-44.
- Sunzuma, G., & Luneta, K. (2023). Zimbabwean mathematics pre-service teachers' implementation of the learner-centered curriculum during teaching practice. *EURASIA Journal of Mathematics, Science and Technology Education*, 19(5), em2258. <https://doi.org/10.29333/ejmste/13131>
- Tang, K. (2023). Student-centered Approach in Teaching and Learning: What Does It Really Mean? *Acta Pedagogica Asiana*, 2(2), 72-83. <https://doi.org/10.53623/apga.v2i2.218>
- Thahir, A., Mawarni, A., & Palupi, R. (2019). The Effectiveness of Demonstration Methods Assisting Multiplication Board Tools for Understanding Mathematical Concept in Bandar Lampung. *Journal for the Education of Gifted Young Scientists*, 7(2), 353-362. <https://doi.org/10.17478/jegys.512260>
- Thomas, M. (2013). Teachers' Beliefs about Classroom Teaching - Teachers' Knowledge and Teaching Approaches. *Procedia - Social and Behavioral Sciences*, 31 - 39. <https://doi.org/10.1016/j.sbspro.2013.08.805>
- Toker, T. (2022). Detecting Possible Learning Losses due to COVID-19 Pandemic: An Application of Curriculum-Based Assessment. *International Journal of Contemporary Educational Research*, Volume 9, Number 1, Page 78-86. <https://doi.org/10.33200/ijcer.985992>
- Wahyudi, A. (2021). Learning Loss During Covid-19 Pandemic In Indonesia And The Strategies To Minimize It. *Journal Of English Education And Linguistics*, pp. 18-25. <https://doi.org/10.56874/jeel.v2i2.579>
- Zhao, N., Valcke, M., Desoete, A., Sang, G., & Zhu, C. (2014). Does teacher-centered teaching contribute to students' performance in primary school? A video analysis in Mainland China. ResearchGate: *International Journal of Research Studies in Education*, DOI: 10.5861/ijrse.2014.729. <https://doi.org/10.5861/ijrse.2014.729>
- Zulkifli, Z., Kristiawan, M., & Sasongko, R. (2022). Improving Students' Active Learning Through Demonstration Method. *Al-Ishlah: Jurnal Pendidikan*, 14(4), 6539-6550, ISSN: 2087-9490 EISSN: 2597-940X, DOI: 10.35445/alishlah.v14i4.2313. <https://doi.org/10.35445/alishlah.v14i4.2313>

Cultivating Early Literacy: Impact on Grade One Academic Achievement

Wilma C. Casido

Foundation University, Dumaguete City, Negros Oriental, Philippines

Author email: wilma.cimafranca@foundationu.com

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Abstract. Teaching pupils to read requires patience, creativity, and a deep understanding of their learning styles. By fostering a supportive and engaging environment, educators can instill a lifelong love for reading in young learners. This study aimed to assess the Grade 1 pupils' foundational literacy skills with their academic performance. It was conducted among the Grade 1 pupils of Zamboanguita District 2, Division of Negros Oriental, for the school year 2021–2022. The study utilized the descriptive-correlational research design and employed a standardized questionnaire provided by the Division Office. The statistical tools used are percentage, mean, mean percentage score, Pearson product-moment coefficient of correlation, and t-test for independent data. The study revealed that the Grade 1 pupils' foundational literacy skills in listening comprehension, letter-sound identification, initial sound discrimination, and familiar word reading are just around the borderline of passing. It was also revealed that their academic performance based on their grades is satisfactory. Moreover, pupils' foundational literacy skills are determinants of their' academic performance.

Keywords: Reading; Grade 1 pupils; Academic performance; Foundational literacy skill; Descriptive correlational.

1.0 Introduction

According to future teachers, motivating pupils to read and understand what they are reading on varying levels is one of the most relevant tasks of the schools. Gao et al. (2018) said that it is best to address the reading challenges at the early stage to decrease tendencies of developmental delays which can affect pupils' performance over the long term. Indeed, it is of utmost importance that schools and teachers work together to promote students' reading abilities including comprehension, and to expose them to use a variety of reading strategies deliberately and appropriately, thereby giving them better conditions to meet the demands of the society (Aldibs & Khalil, 2022). Sadly, however, difficulty in reading is a major concern among primary school teachers in Ghana since the majority of their pupils do not know how to read (Oduro et al., 2021). In addition, the study by Gilmore (2022) indicates that children who do not know how to read at the end of Grade 3 usually struggle and remain behind their classmates as they progress in school.

Based on the 2020 report by Education EF (EF), an international education company, the Philippines ranked at the 27th spot in the English Proficiency Index, indicating a 7-spot drop. This proves that the country has been experiencing a declining rank over the past years: in 2016 at the 13th place, in 2017 at the 15th place, in 2018 at the 14th place, and in 2019 at the 20th place. Moreover, it was also disclosed that most Filipino students are struggling to handle questions that require higher cognitive skills, including both situational and contextual questions (ABS-CBN News). According to the Department of Education (DepEd), in Bicol, more than 70,000 elementary pupils are non-readers in both English and Filipino, citing primary findings from research in 2019. Most of the "non-readers" came from Grades 1 and 2. These pre-test results were gathered by administering the Philippine Informal

Reading Inventory (Phil-IRI) between July and August 2019 (Jaucian, 2020). Moreover, poor reading performance among the pupils in Grade 1 is one of the common problems of the teachers in the public schools of Valencia District and even in other districts in the Division of Negros Oriental (Saberón, 2020). The findings are proof that the Filipino students ranking last in reading comprehension out of 79 countries in the 2018 Program for International Student Assessment (PISA) is not a coincidence (Roperó, 2019).

In this regard, the researcher saw the importance of looking into the reading level of pupils in Grade 1 because this area has been less explored in literature. Moreover, other studies focused mostly on students' reading and listening comprehension wherein the respondents are already in College, High School, and Intermediate Elementary. To address the problems faced by Filipino learners, the researcher being an elementary teacher would like to contribute to the solutions of problems related to emergent readers.

Thus, the researcher decided to assess the Grade 1 pupils' foundational literacy skills, where the foundation in reading is vital because they will have difficulty studying at a higher level if they miss this chance. Exploring this aspect would shed light for the school administrators to provide programs and projects that will enhance pupils' foundational literacy skills. Consequently, implementing these projects will result in improved reading performance among pupils at the earliest time possible. As such, it will be a basis for an action plan to improve the academic performance of the Grade 1 pupils.

This study was designed to assess the Grade 1 pupils' foundational literacy skills and their academic performance. Specifically, the study sought to answer the following questions:

- a. What is the level of the Grade 1 pupils' foundational literacy skills in terms of the following: Listening comprehension; Letter-sound identification; Initial sound discrimination; and Familiar word reading?
- b. What is the academic performance of the pupils based on their grades?
- c. Is there a significant relationship between the foundational literacy skills of the pupils and their academic performance?

2.0 Methodology

2.1 Research Design

The descriptive-correlational research design by Creswell was used. It is descriptive since it assesses pupils' foundational literacy skills. It is correlational since their relationship was identified.

2.2 Research Participants

The study was conducted in the different Public Elementary Schools in Zamboanguita District 2. One hundred ninety (190) pupils from the aforementioned seven elementary schools were the respondents of the study. The participants were selected using the systematic sampling technique.

2.3 Research Instrument

A standardized questionnaire that was crafted and quality-assured by the Department of Education to gather the data needed for the study was employed. Documentary analysis using the School Form 5 (Report on Promotion and Learning Progress and Achievement) was utilized for the pupils' academic performance. Part I shows the disclosure statement, where the teachers are giving consent to the researcher to gather data/information provided that confidentiality of data will be observed. It also contains the purpose of the conduct of the study. Part II consists of the pupils' profiles. Part III is the EGRA tool used to gather the data on the pupils' foundational literacy skills.

2.4 Data Gathering Procedure

Beginning the data-gathering procedure included complying with all of the panel members' corrections and recommendations. Then, a letter request was sent to the Schools Division of Negros Oriental to conduct the study upon the dean's endorsement of the graduate school of Foundation University. After which, permission was likewise sought from the school principals or school heads and the teacher-adviser of the pupils. Furthermore, the assistance of the Grade 1 teachers to facilitate the administration of the test was asked. The administration was done orally and individually by the Grade 1 teachers to determine the foundational literacy skills. The accomplished questionnaires were retrieved after all pupils were assessed. The results were scored and tabulated using MS Excel and were analyzed and interpreted.

2.5 Ethical Considerations

When the study was conducted, the guidelines of Foundation University's Ethics Committee were followed. Upon the committee's approval, permission from the Schools Division Superintendent to conduct the study through writing was asked. Help was also sought from the school heads in the conduct of the study. Confidentiality of the result was also assured by keeping their identity as individual participants.

2.6 Data Analysis

The tools used by the researcher in analyzing the data were the following:

Percent. This was utilized to demonstrate how a part is related to a whole. It was used in presenting the academic performance of the Grade 1 pupils.

Mean. This was used to get the level of academic performance of the pupils and their foundational literacy skills.

Pearson Product Moment Coefficient of Correlation. This was used to determine the relationship between the foundational literacy skills of pupils and their academic performance. This was utilized since both variables are measured in ratio scale.

3.0 Results and Discussion

3.1 Foundational Literacy Skills of Grade 1 Pupils in terms of Listening Comprehension

Table 1. Foundational literacy skills of grade 1 pupils in terms of listening comprehension (n=190)

Scores	Number of Pupils		%	Mean	MPS	Overall Level
	Failing	Passing				
1	9		4.74			
2		18	9.47			
3		39	20.53	3.98	79.60%	Passing
4		21	11.05			Level
5		103	54.21			
TOTAL	9	181				
OVERALL PERCENTAGE	4.74%	75.26%	100%			

Table 1 shows the foundational literacy skills of Grade 1 pupils in terms of listening comprehension. Based on the results, of the 190 pupils, 9 or 4.74% fall on the failing level with a score of 1. On the other hand, 181, or 75.26% fall on the passing level wherein 18 pupils got 2; 39 pupils got 3; 21 pupils got 4; and the majority comprising 103 pupils got a perfect score of 5. Summing up, pupils' listening comprehension falls on the passing level as reflected in the mean score of 3.98 or a mean percentage score (MPS) of 79.60%. Though it is categorized on the passing level, it still needs improvement as a significant number are still on the borderline of passing.

As cited in the study of Mealings (2023), primary school learners must have sufficient listening comprehension abilities to succeed in the future. Children must be able to listen to and understand what their teachers and classmates are saying to succeed in school. Similarly, Nisa, Izzah, and Hadi (2022) stressed that listening comprehension involves different processes that are essential in understanding. These include speech recognition, identifying the meaning of words, and learning the sentence structure. It increases the compatibility of learners' linguistic comprehension. In other words, to lead us in understanding the pure meaning of the information, we need to listen.

3.2 Foundational Literacy Skills of Grade 1 Pupils in terms of Letter-Sound Identification

Table 2 shows the foundational literacy skills of Grade 1 pupils in terms of letter-sound identification. The results reveal that of the 190 pupils, 69 or 36.32% are on the failing level wherein 3 pupils got below 10; 8 obtained a score within the range of 10–19; 14 acquired a score within the score bracket of 20–29; 17 earned a score within the scale of 30–39; and 27 gained a score within the scope of 40–49. On the other hand, 121, or 63.68% fall on the passing level wherein 53 got 50–59; 25 obtained within the range of 60–69; 23 gained within the scope of 70–79; 15 earned within the bracket 80–89; and 5 acquired within the bracket of 90–100. On average, the pupils have a mean score of 52.92 or a mean percentage score of 52.92% which still needs improvement as it is just a little bit more of the passing level.

Table 2. Foundational literacy skills of grade 1 pupils in terms of letter-sound identification (n = 190)

Scores	Number of Pupils		%	Mean	MPS	Overall Level
	Failing	Passing				
Below 10	3		1.58			
10-19	8		4.21			
20-29	14		7.37			
30-39	17		8.95			
40-49	27		44.21	52.92	52.92%	Passing Level
50-59		53	27.90			
60-69		25	13.16			
70-79		23	12.10			
80-89		15	7.89			
90-100		5	2.63			
TOTAL	69	121				
OVERALL PERCENTAGE	36.32%	63.68%	100%			

The result of the current study, though in general pupils fall on the passing level, is quite alarming as a significant number comprising 69 or a third of the total number of pupils are failing in terms of letter-sound identification. According to the study of Vetsch-Larson (2023), a prerequisite for students to successfully become fluent and comprehend texts is having a mastery of the alphabetic principle and phonological awareness. Hence, it should be noted that students who have mastered phonemic awareness have a strong foundation to become fluent readers. Moreover, Henriksen et al. (2023) argued that acquiring of phoneme awareness and letter-sound knowledge is crucial in early literacy learning, which are proven to be excellent indicators of later reading and spelling proficiencies. When learning to read, children should develop and retain letter-sound knowledge, which is the understanding of the relationship between the phonemes of spoken words and the graphemes of written words.

3.3 Foundational Literacy Skills of Grade 1 Pupils in Terms of Initial Sound Discrimination

Table 3. Foundational literacy skills of grade 1 pupils in terms of initial sound discrimination (n=190)

Scores	Number of Pupils		%	Mean	MPS	Overall Level
	Failing	Passing				
1	3		1.58			
2	2		1.05			
3	5		2.63			
4		7	3.68			
5		3	1.58	7.91	79.1%	Passing Level
6		25	13.16			
7		32	16.84			
8		23	12.11			
9		20	10.53			
10		70	36.84			
TOTAL	10	180				
OVERALL PERCENTAGE	5.26%	94.74%	100%			

Table 3 presents the foundational literacy skills of Grade 1 pupils in terms of initial sound discrimination. As seen from the table, of the 190 pupils, 10 or 5.26% of pupils fall on the failing level wherein 3 pupils got 1; 2 pupils earned 2; and 5 pupils garnered 3. On the other side, 180 or 94.74% fall on the passing level in which 7 pupils achieved 4; 3 pupils obtained 5; 25 pupils got 6; 32 pupils acquired 7; 23 pupils earned 8; 20 pupils had 9; and 70 pupils scored 10. The mean score as a whole is 7.91 and the mean percentage score is 79.1%. This implies that more than 75% of the pupils were able to reach the 75% mastery level.

In the study of Vetsch-Larson (2023), in reading instruction, phonemic awareness has been a priority, and it is currently an important part most of classrooms. Teachers have been made aware of the essence of phonological awareness and language proficiency, and how these could affect the students' reading development. Moreover, Fritsch, Silva, and Sanchez (2021) emphasized that direct instruction in phonemes enables students to accurately comprehend sound and lay the groundwork for the development of their reading abilities. Phonemic awareness has been described as a necessary skill for the child to learn to read and write. It is necessary to have the ability to identify and isolate the phonemes to represent them as letters.

In addition, Li et al. (2023) acknowledged that phoneme discrimination is the ability to detect subtle similarities and differences between phonemes. Phoneme discrimination is a strong predictor of reading development, and poor phoneme discrimination may predict reading disabilities. Classroom instruction should include repeated exposure to differentiating phonemes with known high-frequency words and minimal pairs to develop a strong foundation for discerning phonetic features.

3.4 Foundational Literacy Skills of Grade 1 Pupils in Terms of Familiar Word Reading

Table 4. Foundational literacy skills of grade 1 pupils in terms of familiar word reading (n=190)

Scores	Number of Pupils		%	Mean	MPS	Overall Level
	Failing	Passing				
Below 5	9		4.74			
5-9	7		3.68			
10-14	13		6.84			
15-19	18		9.47			
20-24	32		16.84	25.33	50.66%	Passing Level
25-29		49	25.79			
30-34		23	12.11			
35-39		20	10.53			
40-44		8	4.21			
45-50		11	5.79			
TOTAL	79	111				
OVERALL PERCENTAGE	41.58%	58.42%	100%			

Table 4 presents the foundational literacy skills of Grade 1 pupils in terms of familiar word reading. Based on the results, of the 190 pupils, 79 or 41.58% fall on the failing level in which 9 pupils got below 5; 7 pupils gained a score within the range of 5-9; 13 pupils earned a score within a bracket of 10-14; 18 pupils had a score within the scope of 15-19; and 32 pupils obtained a score within the range of 20-24. There are 111 or 58.42% pupils in the passing level wherein 49 pupils got a score within the range of 25-29; 23 pupils garnered a score within the scope of 30-34; 20 pupils achieved a score within the bracket of 35-39; 8 pupils acquired a score within the scale of 40-44; and 11 pupils gained a score within the span of 45-50. As a whole, 25.33 is the mean score, and the mean percentage score is 50.66%. The result implies that the foundational literacy skill of the pupils in terms of familiar word reading is just around the borderline of passing.

According to the study of Sangthong and Jiamsanguanwong (2021), familiar words refer to words that most people have seen or encountered and heard through reading or listening. According to the previous study, the subjects took a longer time to read non-familiar words than familiar words. Furthermore, recent research shows the value of good vocabulary knowledge: to have better outcomes in education, individuals must have an improved vocabulary to accomplish better on reading comprehension tests (Hulme & Rodd, 2021).

3.5 Summary Table of Grade 1 Pupils' Foundational Literacy Skills

Table 5. Summary table of grade 1 pupils' foundational literacy skills (n=190)

Table 3: Summary table of grade 1 pupils' foundational literacy skills (n = 176)							
Foundational Literacy Skills	$\bar{x}$	MPS	Number of Pupils				Overall Level
			Failing Level		Passing Level		
			F	%	f	%	
Listening Comprehension	3.98	79.60	9	4.74	181	95.26	Passing
Letter-Sound Identification	52.92	52.92	69	36.32	121	63.88	Passing
Initial Sound Discrimination	7.91	79.10	10	5.26	180	94.74	Passing
Familiar Word Reading	25.33	50.66	79	41.58	111	58.42	Passing

Table 5 reveals the summary table of Grade 1 pupils' foundational literacy skills. It can be seen from the table that the pupils fall on the passing level in listening comprehension, letter-sound identification, initial sound discrimination, and familiar word reading. The mean score of listening comprehension (3.98), letter-sound identification (52.92), initial sound discrimination (7.91), and familiar word reading (25.33) shows that it is just

around the borderline of passing; therefore, it needs further advancement because the majority were not able to reach the 75% mastery level. This finding is in accordance with the findings of the study of Modesto and Ferreira (as cited in Librea et al., 2023) which stated that decoding deficit, poor vocabulary, lack of attention, poor language processing skills, lack of knowledge foundation, poor memory, and others are some of the many factors that influence students' ability to read.

Meanwhile, Oluoch-Suleh and Ombara (2023) acknowledged that the ability to read at a basic level is essential for success in other curriculum-related subjects. The ultimate purpose of teaching language in many schools across the world is to help students acquire literacy skills, which are essential for communication and have a significant impact on the mastery of other academic subjects. Different curricula and approaches are used to achieve this goal. Thus, students must have a solid foundation in language understanding, expression, writing, comprehension, and spelling.

3.6 Pupils' Performance Profile Based on Grades

Table 6. Pupils performance profile based on grades (n = 190)

Performance	Descriptive Rating	Frequency	Percentage
90-100	Outstanding	7	3.69
85-89	Very Satisfactory	37	19.47
80-84	Satisfactory	94	49.47
75-79	Fairly Satisfactory	49	25.79
Below 75	Did Not Meet Expectations	3	1.58
TOTAL		190	100.00

Mean Grade: 81.805

Table 6 reveals the pupils' performance profile based on grades. Data reveal that the academic performance of the pupils is satisfactory having an average grade of 81.805. Based on the table shown, there are 44 pupils, or 23.16% who got the best academic performance, while the remaining 146 pupils, or 76.84% need to improve their performance to achieve a very satisfactory or even outstanding academic performance. This implies that pupils need to enhance their foundational literacy skills to improve their performance.

This finding is somewhat related to the study of Gao et al. (2018) that the academic achievement of students throughout their educational careers is influenced enormously by the development of sufficient reading skills at an early age. Moreover, the investment of cognitive capacities and the contextual stimulation provided by, for instance, educational environments, result in academic success. It is believed that these serve as the foundation for the growth of academic achievement (Peng & Kievit, 2020).

3.7 Test on Significant Relationship Between Pupils' Foundational Literacy Skills and their Academic Performance

Table 7. Test on significant relationship between pupils' foundational literacy skills and their academic performance (n=190)

Variables	R	Decision Rule	Remarks
Foundational Literacy Skills & Performance			
Listening Comprehension	0.500762	Reject H_0	Significant
Letter Sound Identification	0.568018	Reject H_0	Significant
Initial Sound Discrimination	0.648571	Reject H_0	Significant
Familiar Word Reading	0.352638	Reject H_0	Significant
OVERALL	0.553798	Reject H_0	Significant

r significant level at 0.05, 188 df = 0.1946

Table 7 reveals the test on the significant relationship between the pupils' foundational literacy skills and their academic performance. Data show that pupils' foundational literacy skills can account for the relationship of their academic performance as manifested in the r values of listening comprehension (0.500762), letter-sound

identification (0.568018), initial sound discrimination (0.648571), and familiar word reading (0.352638), values of which are greater compared to its tabular value of 0.1946 at 0.05 level of significance with 188 degrees of freedom.

Pupils' foundational literacy skills are significantly related to their academic performance as signified by the obtained overall r value of 0.553798 at 0.05 level of significance with 188 degrees of freedom. Hence, the null hypothesis is rejected. Pupils' foundational literacy skills are determinants of pupils' academic performance. This finding is in accordance with the study of Oluoch-Suleh and Ombara (2023) which concluded that the ability to read at a basic level is essential for success in other curriculum-related subjects. Thus, students must have a solid foundation in language understanding, expression, writing, comprehension, and spelling which are essential for communication and have a significant impact on the mastery of other academic subjects. In the same vein, Oduro et al., (2021) discovered that learners who perform well academically are skillful in reading as compared to those with less skill. Furthermore, Spiegel et al., (2021) emphasized that the academic achievement of pupils throughout their educational careers is influenced enormously by the development of sufficient reading skills at an early age.

4.0 Conclusion

This research has confirmed the importance of Grade 1 pupils' foundational literacy skills to be developed at an early age. Likewise, the data gathered in this research highlight also the critical roles of teachers. The result of this study which shows that the pupil-respondents are only at the "passing level" on their foundational literacy skills, namely: listening comprehension, letter-sound identification, initial sound discrimination, and familiar word reading, is not at all surprising considering that the nationwide profile of pupils in their pre-test results administered by DepEd in 2019 from Grades 1 to 2 pupils using the Phil-IRI showed many non-readers (Jaucian, 2020). The level of these pupil-respondents on their foundational literacy skills is also validated by their performance profile based on their grades. Hence, it is safe to conclude that the foundational literacy skills of early graders dictate their success in their academic performance. Furthermore, since teachers play a huge role in cultivating early literacy skills, interventions and educational program focusing on foundational literacy skills at early age are vital.

Based on the findings and conclusions drawn, the following are hereby recommended:

- a. School administrators should take the lead in designing Learning Action Cell (LAC) sessions prioritizing on teaching the foundational literacy skills using technology.
- b. Teachers should design activities to motivate learners to highly engage them in the development of their foundational literacy skills.
- c. Home learning facilitators should collaborate with teachers on possible materials to be used in letting learner appreciate the value of reading.
- d. Future researchers should venture on longitudinal studies to investigate the long-term effects of specific literacy interventions on Grade 1 pupils' academic achievement beyond their immediate grade 1 year. They should also do comparative studies to assess the impact of traditional teaching methods versus innovative approaches, such as phonics-based instruction or multisensory learning techniques.

5.0 Contributions of Authors

This study was authored by a single individual and underwent thorough review and approval by her method specialist before completion.

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7.0 Conflict of Interests

The author affirms the absence of any conflicts of interest related to the study.

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9.0 References

- ABS-CBN News, & Roper, G. (2019). Why Pinoy Students Ranked Last in the Reading Comprehension Survey. ABS-CBN News. <https://news.abs-cbn.com/news/12/05/19/why-pinoy-students-ranked-last-in-reading-comprehension-survey>.
- Aldibs, A., & Khalil, A. (2022). Ways to Good Reading Comprehension: A Qualitative Study of Teachers' Views of the Teaching of Reading Comprehension and Reading Strategies. <https://urn.kb.se/resolve?urn=urn:nbn:se:mau:diva-49822>
- Fritsch, A. V., Silva, N. S. M., & Sanchez, M. L. (2021). Early Screening of Reading and Writing Difficulties in the First Grade: A Pilot Study. *Revista CEFAC*, 23. <https://doi.org/10.1590/1982-0216/20212339820>
- Gao, Q., Wang, H., Mo, D., Shi, Y., Kenny, K., & Rozelle, S. (2018). Can Reading Programs Improve Reading Skills and Academic Performance in Rural China? *China Economic Review*, 52, 111-125. <https://doi.org/10.1016/j.chieco.2018.07.001>
- Gilmore, D. (2022) Reading at Grade Level by Third Grade: A Multi-Level Life Course Framework. *Curr Tr Clin & Med Sci* 3 (1): 2022. CTCMS. MS. ID, 555. DOI: 10.33552/CTCMS.2022.03.000555
- Henriksen, A. H., Topor, M. K., Hansen, R. A., Damsgaard, L., Nielsen, A. M. V., Wulff-Abramsson, A., & Wienecke, J. (2023). Virtual Reality and Embodied Learning for Improving Letter-Sound Knowledge and Attentional Control in Preschool Children: A Study Protocol. *Computers & Education: X Reality*, 2, 100019 <https://doi.org/10.1016/j.cexr.2023.100019>
- Hulme, R. C., & Rodd, J. M. (2021). Learning New Word Meanings from Story Reading: The Benefit of Immediate Testing. *PeerJ*, 9, e11693. DOI 10.7717/peerj.11693
- Jaucian, M. B. (2020). 70,000 Bicol Pupils Can't Read-DepEd. *Philippine Daily Inquirer*. <https://www.deped.gov.ph/2020/02/17/deped-non-readers-figure-in-bicol-premature/>
- Li, M., Jerasa, S., Frijters, J. C., & Geva, E. (2023). Using Phoneme Discrimination to Help Emergent Bilinguals With Reading Disabilities Acquire New Sounds. *TEACHING Exceptional Children*, 00400599231173685. <https://doi.org/10.1177/00400599231173685>
- Librea, N. K., Luciano, A. M., Sacamay, M. L., Libres, M. D., & Cabanilla Jr, A. (2023). Low Reading Literacy Skills of Elementary Pupils in the Philippines: Systematic Review. *International Journal for Research in Applied Science and Engineering Technology (IJRASET)*, 11(4), 1978-1985. <https://doi.org/10.22214/ijraset.2023.49480>
- Mealings, K. (2023). A Scoping Review of the Effect of Classroom Acoustic Conditions on Primary School Children's Numeracy Performance and Listening Comprehension. *Acoustics Australia*, 51(1), 129-158 <https://doi.org/10.1007/s40857-022-00284-3>
- Nisa, H. F., Izzah, L., & Hadi, M. S. (2022). The Use of Podcast to Improve Students' Listening Comprehension. *Eltin Journal: Journal of English Language Teaching in Indonesia*, 10(1), 45-54. <https://doi.org/10.22460/eltin.v10i1.p45-54>
- Odoro, P., Mensah, F. A., Quansah, F., Lawer, R. A., & Ankoma-Sey, V. R. (2021). Understanding Primary School Teachers' Remediation Strategies in Assisting Pupils with Reading (Phonic) Difficulties. *International Journal of Social Sciences & Educational Studies*, 8(4), 189. Doi: 10.23918/ijsses.v8i4p189
- Oluoch-Suleh, E., & Ombara, J. (2023). Application and Relevance of the Orton Gillingham Structured Literacy Teaching Approach to Pupils with Specific Learning Disabilities in Kenyan Public Primary Schools. *Sch Int J Linguist Lit*, 6(8), 343-350. DOI: 10.36348/sijll.2023.v06i08.001
- Peng, P., & Kievit, R. A. (2020). The development of academic achievement and cognitive abilities: A bidirectional perspective. *Child Development Perspectives*, 14(1), 15-20. <https://doi.org/10.1111/cdep.12352>
- Saberon, M. A. (2020). School-Based Factors Affecting the Reading Performance of the Grade 1 Non-Reader Pupils in Valencia District. *Negros Oriental State University*
- Sangthong, S., & Jiamsanguanwong, A. (2021). Estimating the reading time of Familiar and Non-Familiar words. *IEOM Society International*, 1366-1374
- Spiegel, J. A., Goodrich, J. M., Morris, B. M., Osborne, C. M., & Lonigan, C. J. (2021). Relations between executive functions and academic outcomes in elementary school children: A meta-analysis. *Psychological bulletin*, 147(4), 329. <https://doi.org/10.1037/bul0000322>
- Vetsch-Larson, M. (2022). Effects of Phonemic Awareness and Oral Reading Fluency. *Dissertations, Theses, and Projects*, 616. <https://red.mnstate.edu/thesis/616>

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