TECHNOLOGY INTEGRATION IN MATHEMATICS AND TEACHERS' EFFECTIVENESS

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ABSTRACT

This study aimed to determine the significant influence of technology integration and teacher effectiveness within the educational sector, focusing on the challenges and enablers of these elements. Conducted in the context of the Philippines, where numerous barriers hinder the effective integration of technology in classrooms, the research highlights issues such as inadequate infrastructure, limited access to digital tools, and insufficient teacher training. Using a quantitative approach utilizing an adapted survey questionnaire of universally selected mathematics teachers, data was collected from various educational institutions to assess the current state of technology integration and its impact on teacher effectiveness. Results indicate that while institutional leadership shows some support for technology integration, the lack of a clear vision and comprehensive strategy hampers significant progress. Teacher effectiveness was evaluated through indicators such as professional development, pedagogical knowledge, and the adoption of technology in teaching practices. The findings suggest that despite moderate levels of teacher readiness and competence in using technology, there is a critical need for targeted interventions to address the barriers identified. The study concludes that enhancing technology integration requires a multifaceted approach, including improving infrastructure, providing ongoing professional development, and fostering a supportive policy environment. Recommendations emphasize the importance of developing strategic plans for technology adoption, investing in resources, and encouraging a culture of continuous learning and innovation among educators. This research contributes to the understanding of technology integration in education and provides actionable insights for policymakers and educators aiming to enhance the effectiveness of teaching through the integration of digital tools.

Keywords: *discipline, education, professional development, barriers, technology integration, infrastructure, leadership, strategy, teacher effectiveness, quantitative approach*

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1. INTRODUCTION

Technology integration in education is increasingly recognized as vital for improving teaching and learning outcomes. However, numerous barriers hinder the effective integration of technology in classrooms. These challenges include inadequate infrastructure, limited access to devices and reliable internet, insufficient teacher training and professional development, and financial constraints. Moreover, cultural and institutional factors exacerbate these issues, such as resistance to change and a lack of strategic vision for technology adoption. Understanding and addressing these barriers is essential for harnessing the potential of educational technology to enhance student learning and teacher effectiveness (Gesta et al., 2023).

In Turkey, Hamutoglu and Basarmak (2020) proposed a model addressing both internal and external barriers to technology adoption, emphasizing the importance of school-level support and resources. Extensive research has been conducted to identify and address barriers to technology integration in education. Studies have highlighted common challenges such as funding constraints, lack of access to technology, and inadequate professional development. These studies underscore the complexity of technology integration and the need for comprehensive strategies to overcome these barriers.

Several studies in the Philippines have explored the barriers to technology integration specific to the local context. Research has shown that Filipino teachers often face significant obstacles, including limited access to digital tools and insufficient technical support. Specifically, in Surigao del Norte State University conducted by Gesta et al. (2023) and others, they highlighted the critical role of professional development in improving teachers' readiness and competence in using technology. Furthermore, local research has pointed out that cultural attitudes toward technology and education significantly influence the adoption and effective use of digital tools in classrooms. These studies provide valuable insights into the unique challenges faced by educators in the Philippines and suggest targeted interventions to support technology integration (Gesta et al., 2023).

The researcher observed significant challenges at her affiliated higher education institution, particularly noting that many freshmen struggle with fundamental mathematical skills that should have been mastered during secondary education. This discrepancy could stem from students' academic trajectories not aligning closely with their chosen college courses. Additionally, the study aims to tackle the issue of teaching effectiveness in mathematics. In today's era, technology captivates youth; while this can pose distractions, it also presents an opportunity. Teachers can harness technology to enhance mathematical instruction and streamline their work processes, thereby boosting efficiency. Integrating technology into education could bridge gaps in understanding and engagement, transforming potential distractions into valuable educational tools. However, the perception of barriers to this integration—such as access to technology, teacher training, and concerns about over-reliance on devices—must also be addressed for effective implementation.

2. METHODOLOGY

2.1. Research Design

This study utilized a quantitative correlational non-experimental causal research design. Correlation is used to determine to what degree and if there is a relationship between two or more variables and how best is the relationship between the predictor variables (Ruggiers, 2013). Furthermore, as cited by Warner et al., (2013) they defined correlation as the statistical association or relationship between variables. Correlation design predicts the variance of another variable(s).

This research design was useful and appropriate because the study will focus on statistical association or relationship between variables and this is because it tests the relationship and will try to determine which domain of Technology Integration greatly affects Teachers' Effectiveness in public secondary schools in the 4 municipalities of Agusan del Sur.

2.2. Research Locale

This research was a provincial-wide study, which included all the secondary public school Mathematics Teachers in five (5) Municipalities of Agusan del Sur. The five Municipalities that were included were Bunawan, Rosario, San Francisco, Santa Josefa, and Trento, there were 3 schools in the Municipality of Bunawan namely; Bunawan National High School, Libertad National High School, and West Bunawan National High School. There were 3 schools in the Municipality of Rosario namely; Bayugan 3 National High School, Datu Lipus Makapandong National High School, and Sta Cruz National High School. There is 1 school in the Municipality of San Francisco which is Agusan del Sur National High School. There were 3 schools in the Municipality of Santa Josefa namely; Aurora National High School, Sayon National High School, and Sta Josefa National High School. There were 6 schools in the Municipality of Trento namely; Kapatungan National High School, Manat National High School, Pulang-lupa National High School, Salvacion National High School, Sta Maria National High School, and Trento National High School.

2.3. Research Respondents

This study employed a Universal Sampling Technique. The universal sampling technique was used in statistics and sampling methods to select a representative sample from a population. In universal sampling, every member of the population has an equal chance of being selected for the sample.

The target respondents included all the public secondary school Mathematics teachers from the five municipalities of Agusan del Sur: Bunawan, Rosario, San Francisco, Santa Josefa, and Trento. These teachers, represent a total of 16 public secondary schools across these municipalities which were Agusan National High School, Aurora National High School, Bayugan 3 National High School, Bunawan National High School, Datu Lipus Makapandong National High School, Kapatungan National High School, Libertad National High School, Manat National High School, Pulanglupa National High School, Sta Cruz National High School, Sta Josefa National High School, Sta Maria National High School, Sayon National High School, Salvacion National High School, Trento National High School, and West Bunawan National High School, were selected to provide valuable insights into the integration of digital tools in mathematics education. By focusing on educators from different locales, the study aims to capture a diverse range of practices, challenges, and attitudes toward technology use in teaching mathematics.

2.4. Research Instruments

To obtain the needed information, this study utilized an adapted questionnaire with both independent and dependent variables. The independent variable is the Technology Integration from the study of Hamutoglu and Basarmak (2023) from Turkey. It has thirteen (13) indicators: Beliefs towards Learning-Teaching Activities, Beliefs towards Expert Support, Infrastructure, Content, Assessment, Technological Self-Efficacy Beliefs, Pedagogical Self-Efficacy Beliefs, Belief toward Change, lack of Vision, Lack of Leadership, Lack of Money, Family Resistance, and Lack of Training. The questionnaire consists of 51 statements: 4 statements for Beliefs towards Learning-Teaching Activities, 9 statements for Beliefs towards Expert Support, 4 statements for Infrastructure, 6 statements for Content, 3 statements for Assessment, 4 statements for Technological Self-Efficacy Beliefs, 5 statements for Pedagogical Self-Efficacy Beliefs, 2 statements for Belief toward Change, 3 statements for Lack of Vision, 2 statements for Lack of Leadership, 2 statements for Lack of Money, 5 statements for Family Resistance, and 2 statements for Lack of Training. The dependent variable is the Effective Teacher from the study of Prakash et al. (2020). It has 5 indicators: Preparation for Teaching and Planning, Classroom Management, Knowledge of Subject Matter, Teacher Characteristics, and Interpersonal Relations. The questionnaire consists of 25 statements; 5 statements for Preparation for Teaching and Planning, 7 statements for Classroom Management, 2 statements for Knowledge of Subject Matter, 8 statements for Teacher Characteristics, and 3 statements for Interpersonal Relations A four-point Likert scale will be used to answer each of the items given. The manifestation of each of the indicators is described as follows:

A. Likert Scale on Perceived Barriers to Technology Integration Questionnaire

Range of Mean	Descriptive Equivalent	Descriptive Interpretation
3.5 – 4.00	Very High	This means that the teachers **strongly agree** on the Technology Integration
2.5 – 3.49	High	This means that teachers **agree** on the Technology Integration.
1.5 – 2.49	Low	This means that teachers **disagree** on Technology Integration.
1.00 – 1.49	Very Low	This means that teachers **strongly disagree** on Technology Integration.

B. Likert Scale on Effective Teacher Questionnaire

Range of Mean	Descriptive Equivalent	Descriptive Interpretation
3.5 – 4.00	Very High	This means that the Teacher's Effectiveness is **always evident.**
2.5 – 3.49	High	This means that the Teacher's Effectiveness is **evident.**
1.5 – 2.49	Low	This means that the Teacher's Effectiveness is **sometimes evident.**
1.00 – 1.49	Very Low	This means that the Teacher's Effectiveness is **not evident at all.**

2.5. Data Collection Procedure

The researcher followed the proper protocol of the study before the collection of data started.

Permission to Conduct the Study. An endorsement letter from the Dean of the Graduate School together with the letter of intent to conduct the study was prepared and submitted to the Schools Division Superintendent (SDS) for acknowledgment and approval. Upon the issuance of permission from the SDS, the researcher presented this letter to the sixteen school principals of the participating schools to give the researcher the go signal to conduct the study. The nature of the study was explained to the respondents, more specifically the school principals since they were the subject of the study.

Administration and Retrieval of Questionnaire. To start the study, it was explained to the teachers that the goal of the study and the confidentiality of their responses would be taken into consideration. To ensure that the respondents would become more responsible in answering each item, the researcher administered, retrieved, and encoded all their responses on her personal computer.

Analysis and Interpretation. The researcher applied the most appropriate statistical tools to aid her in the interpretation and analysis of the data. To have a systematic presentation of the data, the researcher followed the statement of the problem. Different tables were presented together with the analyses and interpretations.

2.6. Statistical Treatment of Data Collection

The statistical treatment that was used in this study to ensure the accuracy of the analyses and interpretations of the findings will be the following:

Frequency Counting and Percentage. This was used to attain objective 1, which was to determine the demographic profile of the respondents.

Mean. This was used to attain objectives 2 and 3, which were to determine the level of Technology Integration and Teacher Effectiveness.

Independent T-test. This was used to attain objective 4, which was to determine the significant difference when grouped according to Sex and Highest Educational Attainment.

ANOVA. This was used to attain objective 4, which was to determine the significant difference when grouped according to Age and Teaching Experience.

Spearman Rho. This was used to attain objective 5, determining the relationship between Technology Integration and Teacher Effectiveness.

Multiple Regression. This was used to attain objective 6, which was to determine which indicators in Technology Integration greatly affect Teacher Effectiveness.

3. RESULTS

This chapter deals with the presentation, analysis, and interpretation of the data collected. The study's results were presented and discussed based on the presentation of the problems.

Demographic Profile of the Respondents

Table 1. Age of the Respondents

Table 1
Age

AGE	FREQUENCY	PERCENTAGE
21-30 Years Old	38	34.2
31-40 Years Old	43	38.7
41-50 Years Old	25	22.5
51 and Above Years Old	5	4.5
Total	**111**	**100.0**

Table 1 shows the distribution of age of 111 respondents. Most respondents fall within the age groups of 21-30 years (34.2%) and 31-40 years (38.7%). This suggests that a significant portion of the teaching workforce is relatively young, which could influence their familiarity and comfort with integrating technology into their teaching practices.

Table 2. Sex of the Respondents

Table 2
Sex

SEX	FREQUENCY	PERCENTAGE
Male	37	33.3
Female	74	66.7
Total	**111**	**100.0**

Table 2 presents the distribution of sex of 111 respondents. There is a higher representation of female respondents (66.7%) compared to male respondents (33.3%). This gender distribution may reflect the broader demographic trends within the teaching profession.

Table 3. Teaching Experience of the Respondents

Table 3
Teaching Experience

TEACHING EXPERIENCE	FREQUENCY	PERCENTAGE
0-3 years	14	12.6
4-6 years	30	27.0
7-9 years	25	22.5
10-12 years	14	12.6
13 and above years	28	25.2
Total	**111**	**100.0**

Table 3 shows that the respondents have a diverse range of teaching experience, with the largest group having 4-6 years of experience (27.0%). A substantial proportion (25.2%) have over 13 years of experience, indicating a mix of both novice and veteran teachers.

Table 4. Highest Educational Attainment of the Respondents

Table 4
Highest Educational Attainment

HIGHEST EDUCATIONAL ATTAINMENT	FREQUENCY	PERCENTAGE
Baccalaureate	61	55.0
Postgraduate Level	50	45.0
Total	**111**	**100.0**

Table 4 presents a significant number of respondents who hold a baccalaureate degree (55.0%), while 45.0% have pursued postgraduate education. This high level of educational attainment may correlate with a higher disposition to adopt new teaching methodologies, including technology integration.

Level of Technology Integration

Table 5. Overall result for the level of Technology Integration

Table 5

Technology Integration	**Mean**	**Descriptive Equivalent**
Overall	**2.998**	**High**

Table 5 shows the overall weighted mean of 2.998 for the level of technology integration categorized as high. This means that the mathematics teachers agree on technology integration.

Table 6. Beliefs towards Learning- Teaching Activities

Table 6

Beliefs towards Learning-Teaching Activities

Indicator	Mean	Descriptive Equivalent
I believe that…		
1. the use of technology in learning-teaching activities enhances learning.	3.93	Very High
2. it is easy to design learning activities by using technology.	3.75	Very High
3. technology facilitates my work just like a teacher.	3.67	Very High
4. the use of technology in learning-teaching activities supports students' advanced thinking skills (creative thinking, problem-solving skills, critical thinking, etc.).	3.75	Very High
Weighted Mean	**3.77**	**Very High**

Table 6 shows that the Beliefs toward Learning-Teaching Activities had a notably high weighted mean of 3.77, categorizing it as very high. This means that the mathematics teachers strongly agree on Technology Integration.

Looking at the questions, you can determine that question number 1 has the highest weighted mean of 3.93 categorizing it as very high. This means that mathematics teachers strongly agree on Technology Integration because they believe that the use of technology in teaching-learning activities can enhance learning.

Table 7. Beliefs toward Expert Support

Table 7

Beliefs toward Expert Support

Indicator	Mean	Descriptive Equivalent
I believe that…		
1. It makes my job easier to ask for expert support when using technology.	3.86	Very High
2. expert support is important in selecting technology appropriate for content.	3.81	Very High
3. expert support is important in planning technology appropriate for content.	3.81	Very High
4. expert support is important in using instructional technology.	3.85	Very High
5. I will get rid of my concerns about the use of technology in my courses by taking expert support.	3.58	Very High
6. expert support is important in demonstrating my competence in technology.	3.70	Very High
7. Having expert support makes me feel safe about using technology.	3.71	Very High
8. I do not think that resources are reliable without expert support.	3.18	High
9. expert support is important in the emergence of new ideas about the use of technology.	3.67	Very High
Weighted Mean	**3.69**	**Very High**

Table 7 shows that the Beliefs towards Expert Support is rated very high with a mean of 3.69. This means that the mathematics teachers strongly agree on Technology Integration.

Moreover, the question with the highest weighted mean is question number 1 with a mean of 3.86 and is rated very high. This means that mathematics teachers strongly agree on Technology Integration because they believe that it makes their job easier to ask for expert support when using technology.

Table 8. Infrastructure

Table 8
Infrastructure

Indicator	Mean	Descriptive Equivalent
1. Our schools do not have enough infrastructure such as hardware, software, Internet access, etc.	2.33	Low
2. Access to computer laboratories in schools is insufficient.	2.32	Low
3. Software on computers in laboratories is not up to date.	2.32	Low
4. Laboratories do not have a fast Internet infrastructure.	2.25	Low
Weighted Mean	**2.30**	**Low**

Table 8 shows that the Infrastructure indicator received a low weighted mean of 2.30, which means that mathematics teachers disagree on Technology Integration. Reflecting significant challenges related to insufficient hardware, software, and internet access in schools. This deficiency in infrastructure limits the potential for technology integration, as adequate resources are crucial for implementing technological advancements effectively (Kozma, 2003).

Looking at the questions, you can determine that question number 4 got the lowest weighted mean of 2.25 categorized as low. This means that mathematics teachers disagree on Technology Integration because the laboratories do not have a fast internet infrastructure.

Table 9. Content

Table 9
Content

Indicator	Mean	Descriptive Equivalent
1. I have the appropriate curriculum content for the technology I use in the course.	3.09	High
2. I think that the technology to be used in the course and the content to be taught complement each other.	3.37	High
3. I think that the current technology is useful for teaching.	3.66	Very High
4. Technology integration takes less time than I thought.	3.34	High
5. I have time to learn how to integrate technology into my courses.	3.33	High
6. I have time to plan/prepare the courses in which I use technology.	3.30	High
Weighted Mean	**3.14**	**High**

Table 9 shows Content indicator was rated high with a weighted mean of 3.14. This means that the mathematics teachers agree on Technology Integrations. Indicating that there is appropriate curriculum content to complement technology use.

Looking at the questions, question number 3 got the highest weighted mean with 3.66 rated as very high. This means that the mathematics teachers strongly agree on Technology Integrations because they think that the current technology is useful for teaching.

Table 10. Assessment

Table 10
Assessment

Indicator	Mean	Descriptive Equivalent
1. The use of technology in schools serves the assessment process rather than the teaching process.	2.28	Low
2. The main purpose of using technology in schools is based on the assessment of the courses.	2.32	Low
3. Since teachers focus on multiple-choice exams, which are success indicators, to meet standards, there is no need to use technology in courses.	2.96	High

Weighted Mean	**2.52**	**High**

Table 10 shows that the Assessment received a high weighted mean of 2.52 which means that the mathematics teachers agree on Technology Integrations. Indicating that technology is more focused on assessment processes rather than enhancing teaching practices.

Looking at the questions, question number 3 got the highest weighted mean with 2.96 rated as high. This means that the mathematics teachers still agree on Technology Integrations because they focus on multiple-choice exams, which are success indicators, to meet standards, there is no need to use technology in courses.

Table 11. Technological Self-Efficacy Beliefs

Table 11
Technological Self-Efficacy Beliefs

Indicator	Mean	Descriptive Equivalent
27. I do not know how technology is used in courses.	3.14	High
28. I feel lacking in using technology in courses.	2.87	High
29. I worry about using technology in my courses.	3.04	High
30. When I need to use technology in my courses, I feel afraid of doing it wrong.	2.94	High
Weighted Mean	**3.00**	**High**

Table 11 indicates that technological self-efficacy beliefs scored high with a weighted mean of 3.00. This means that the mathematics teachers agree on Technology Integrations.

Looking at the questions, question number 1 got the highest weighted mean with 3.14 and rated it as high. This means that the mathematics teachers agree on Technology Integrations because they do know how technology is used in the courses.

Table 12. Pedagogical Self-Efficacy Beliefs

Table 12
Pedagogical Self-Efficacy Beliefs

Indicator	Mean	Descriptive Equivalent
1. When using technology, I consider the characteristics of the target group.	3.46	High
2. I care about the attainments of the subject while using technology in the course.	3.60	Very High
3. The features of the classroom environment are important to me when using technology in the course.	3.44	High
4. Teaching methods appropriate for the course objectives are effective in my choice of technology.	3.50	High
5. The assessment-evaluation approach in accordance with the course objectives is effective in my choice of technology.	3.39	High
Weighted Mean	**3.48**	**High**

Table 12 shows the Pedagogical Self-Efficacy Beliefs that stood out with a high weighted mean of 3.48. This means that mathematics teachers strongly agree on Technology Integration. Signifying a strong confidence among teachers in their ability to effectively integrate technology into their pedagogical practices.

Looking at the questions, question number 2 got the highest weighted mean of 3.60 rated very high. This means that mathematics teachers strongly agree on Technology Integration because they care about the attainments of the subject while using technology in the course.

Table 13. Belief towards Change

Table 13
Belief towards Change

Indicator	Mean	Descriptive Equivalent
1. I believe that the use of technology will not bring success right away.	2.52	High
2. Although I use technology in the courses, I believe that change takes time.	2.00	Low
Weighted Mean	**2.26**	**Low**

Table 13 shows Belief towards Change was rated as low with a weighted mean of 2.26, which means that the mathematics teachers disagree on Technology Integrations.

Looking at the questions, question number 1 got the highest weighted mean with 2.52 rated as high which means that the mathematics teachers agree on Technology Integration because they believe that the use of technology integration will not bring success right away.

Table 14. Lack of Vision

Table 14
Lack of Vision

Indicator	Mean	Descriptive Equivalent
1. The institution I work for expects me to use technology effectively.	3.26	High
2. The administrators in my institution support me to use of technology.	3.37	High
3. I find it logical to use technology in my courses in the institution I work for.	3.41	High
Weighted Mean	**3.35**	**High**

Table 14 indicates that the lack of vision indicator scored high with a mean of 3.35. This means that the mathematics teachers agree on Technology Integrations.

Looking at the questions, question number 3 got the highest weighted mean with 3.41 rated as high. This means that the mathematics teachers agree on Technology Integrations because they find it logical to use technology in their courses in the institution they work for.

Table 15. Lack of Leadership

Table 15
Lack of Leadership

Indicator	Mean	Descriptive Equivalent
1. The managers/administrators of the institution do not insist on us using technology in the courses.	2.59	High
2. Using technology in courses is optional.	2.27	Low
Weighted Mean	**2.43**	**Low**

Table 15 reveals that the lack of leadership indicator scored low with a mean of 2.43. This means that the mathematics teachers disagree on Technology Integrations.

Table 16. Lack of Money

Table 16
Lack of Money

Indicator	Mean	Descriptive Equivalent
1. If it is important to use a new technology in the course, institution managers/ administrators procure that technology.	3.09	High
2. Even if the budget is limited, the use of technology in the courses is in the forefront.	3.10	High
Weighted Mean	**3.09**	**High**

Table 16 shows that the lack of money indicator scored high with a mean of 3.09 which means that the the mathematics teachers agree on Technology Integrations. Highlighting the need for adequate funding to support technology integration.

Looking at the questions, question number 2 got the highest weighted mean with 3.10 rated as high. This means that the mathematics teachers agree on Technology Integrations because even if the budget is limited, the use of technology in the courses is in the forefront.

Table 17. Family Resistance

Table 17
Family Resistance

Indicator	Mean	Descriptive Equivalent
1. Families do not insist on using new technologies.	2.47	Low
2. Families resist children's desire to use a new technology.	2.66	High
3. Families do not tolerate the use of a new technology by their children.	2.60	High
4. Families see technology as something new and unnecessary.	2.69	High
5. The idea that children can learn without the technology is dominant in families.	2.56	High
Weighted Mean	**2.60**	**High**

Table 17 reveals that family resistance scored high with a mean of 2.60. This means that mathematics teachers agree on Technology Integrations.

Looking at the questions, question number 4 got the highest weighted mean with 2.69 rated as high. This means that the mathematics teachers agree on Technology Integrations because the families see technology as something new and unnecessary.

Table 18. Lack of Training

Table 18
Lack of Training

Indicator	Mean	Descriptive Equivalent
50. I think that the training I received in the use of technology is easily applicable in the classroom.	3.28	High
51. I think that I have been sufficiently trained in the skills required to use technology.	2.99	High
Weighted Mean	**3.14**	**High**

Table 18 shows that the lack of training indicator scored high with a mean of 3.14, emphasizing the need for continuous professional development to enhance teachers' skills in using technology effectively in their classrooms (Mouza, 2009).

Looking at the questions, question number 1 got the highest weighted mean with 3.28 rated as high. This means that the mathematics teachers agree on Technology Integrations because they think that the training they received in the use of technology is easily applicable in the classroom.

Level of Teacher Effectiveness

Table 19 shows the overall weighted mean for the level of Teacher Effectiveness

Table 19

Teacher Effectiveness	Mean	Descriptive Equivalent
Overall	**3.568**	**Very High**

Table 19 shows the overall weighted mean of 3.568 for the level of teacher effectiveness categorized as very high. This means that the mathematics teachers' effectiveness is evident.

Table 20. Preparation for Teaching and Planning (PTP)

Table 20
Preparation for Teaching and Planning (PTP)

Indicator	Mean	Descriptive Equivalent
1. The tests I intend administering to my students will be reviewed and improved upon by me.	3.40	High
2. I plan my lessons keeping in view the individual differences among students.	3.53	Very High
3. I plan my lessons based on the techniques tested and found suitable.	3.57	Very High
4. In the end, I am in the habit of summarizing the lesson I teach.	3.53	Very High
5. I organize the subject matter I teach to be in agreement with the course's objectives.	3.65	Very High
Weighted Mean	**3.54**	**Very High**

Table 20 shows that the weighted mean of Preparation for Teaching and Planning was rated as very high with a weighted mean of 3.54. This means that the Teacher's Effectiveness is evident.

Looking at the question, question number 5 got the highest weighted mean of 3.65 as rated as very high. This means that the mathematics teachers' effectiveness is always evident because the teachers organize the subject matter they teach to be in agreement with the course's objectives.

Table 21. Classroom Management (CM)

Table 21
Classroom Management (CM)

Indicator	Mean	Descriptive Equivalent
1. While teaching, I ask more thought-provoking questions than fact-finding questions.	3.24	High
2. I do discuss with students their performance in tests.	3.41	High
3. My teaching is characterized by clarity.	3.50	High
4. I guide my students in completing their assignments.	3.45	High
5. I help students in their reference work.	3.43	High
6. I encourage students to be punctual in their assignments.	3.69	Very High
7. I am concerned with the maintenance of discipline in the classroom within the framework of a democratic atmosphere.	3.64	Very High
Weighted Mean	**3.48**	**High**

Table 21 shows that Classroom Management also received a high rating with a weighted mean of 3.48. This means that the mathematics teachers' effectiveness is evident.

Looking at the question, question number 6 got the highest weighted mean of 3.69 rated as very high. This means that the mathematics teachers' effectiveness is always evident because the teachers encourage students to be punctual in their assignments.

Table 22. Knowledge of Subject Matter (KSM)

Table 22
Knowledge of Subject Matter (KSM)

Indicator	Mean	Descriptive Equivalent
1. I have a great deal of interest in the subject I am teaching.	3.72	Very High
2. I discuss the content of the subject matter with ease and confidence.	3.72	Very High
Weighted Mean	**3.72**	**Very High**

Table 22 presents the Knowledge of Subject Matter, which is rated very high with a weighted mean of 3.72, which means that the mathematics teachers' effectiveness is always evident.

Looking at the question, questions 1 and 2 had an equal mean of 3.72 rated as very high. This means that the mathematics teachers' effectiveness is always evident because the teachers have a great deal of interest in the subject they teach and discuss the content of the subject matter with ease and confidence.

Table 23. Teacher Characteristics (TC)

Table 23
Teacher Characteristics (TC)

Indicator	Mean	Descriptive Equivalent
1. I do possess pleasing manners.	3.47	High
2. I value my academic achievements.	3.59	Very High
3. I have love for my students.	3.64	Very High
4. I show understanding and sympathy in working with my students.	3.64	Very High
5. I provide a laudable example of my personal and social living to my students.	3.42	High
6. I have pleasant and distinct voice.	3.36	High
7. My gestures in the classroom are pleasant and approvable.	3.46	High
8. I have a sense of duty and responsibility.	3.71	Very High
Weighted Mean	**3.54**	**Very High**

Table 23 shows the Teacher Characteristics, including traits such as empathy, responsibility, and effective communication, are rated very high with a weighted mean of 3.54.

Looking at the questions, question number 8 got the highest weighted mean with 3.71 rated as very high. This means that the Teacher's Effectiveness is always evident because the teachers have a sense of duty and responsibility.

Table 24. Interpersonal Relations (IR)

Table 24
Interpersonal Relations (IR)

Indicator	Mean	Descriptive Equivalent
1. I consider my first duty to be devoted to get a good name to my school.	3.53	Very High
2. I am reasonably obedient to my headmaster.	3.56	Very High
3. I support the genuine causes of teaching community.	3.61	Very High
Weighted Mean	**3.57**	**Very High**

Table 24 shows that Interpersonal Relations is rated very high with a weighted mean of 3.57, which means that the mathematics teachers' effectiveness is always evident.

Looking at the question, question number 3 got the highest weighted mean of 3.61. This means that the mathematics teachers' effectiveness is always evident because the teacher support the genuine causes of teaching community.

Overall, the findings indicate that teachers in this study exhibit high levels of effectiveness across multiple dimensions, which is essential for achieving positive student outcomes and fostering a conducive learning environment.

Significant Differences in Technology Integration when grouped according to age, sex, teaching experience, and highest educational attainment

Table 25 shows the significant difference in Technology Integration when grouped according to age, sex, teaching experience, and highest educational attainment.

Table 25
Significant Difference in Level of Technology Integration across Different Demographic Profiles

Variable	Demographic Profile	p-value	Remarks
Technology Integration	Age	0.182	Not Significant
	Sex	0.138	Not Significant
	Teaching Experience	0.105	Not Significant
	Highest Educational Attainment	0.314	Not Significant

Age. The p-value for age is 0.182, indicating that educators' age does not significantly affect their perception of barriers to integrating technology into their teaching practices.

Sex. The p-value for sex is 0.138, showing no significant difference in the level of technology integration between male and female educators.

Teaching experience. The p-value for teaching experience is 0.105, implying that the length of teaching experience does not significantly impact how educators perceive barriers to technology integration.

Highest Educational Attainment. The p-value for the highest educational attainment is 0.314, indicating no statistically significant difference in the level of technology integration based on the highest educational attainment of the respondents.

Significant Relationship between Technology Integration and Teacher Effectiveness

Table 26 shows the Significant Relationship between Technology Integration and Teacher Effectiveness.

Table 26

Significant Relationship between Technology Integration and Teacher Effectiveness

		PTP	CRM	KSM	TC	IPR	**Teacher Effectiveness**
Beliefs towards Learning-Teaching Activities	r-value	0.274**	0.339**	0.283**	0.248**	0.369**	0.379**
	p-value	0.00	0.00	0.00	0.01	0.00	0.00
Belief toward Expert Support	r-value	0.364**	0.409**	0.266**	0.286**	0.291**	0.405**
	p-value	0.00	0.00	0.00	0.00	0.00	0.00
Infrastructure	r-value	-0.05	-0.09	0.08	-0.01	-0.13	-0.05
	p-value	0.57	0.35	0.40	0.88	0.18	0.61
Content	r-value	0.428**	0.463**	0.352**	0.315**	0.328**	0.461**
	p-value	0.00	0.00	0.00	0.00	0.00	0.00
Assessment	r-value	-0.01	-0.04	0.00	0.00	-0.02	-0.01
	p-value	0.89	0.66	0.98	0.98	0.87	0.91
Technological Self-Efficacy Beliefs	r-value	0.197*	0.227*	0.366**	0.278**	0.214*	0.307**
	p-value	0.04	0.02	0.00	0.00	0.02	0.00
Pedagogical Self-Efficacy Beliefs	r-value	0.359**	0.450**	0.514**	0.371**	0.437**	0.522**
	p-value	0.00	0.00	0.00	0.00	0.00	0.00
Belief towards Change	r-value	0.01	0.02	0.12	0.13	0.05	0.07
	p-value	0.93	0.85	0.19	0.19	0.63	0.47
Lack of Vision	r-value	0.388**	0.423**	0.397**	0.12	0.204*	0.376**
	p-value	0.00	0.00	0.00	0.20	0.03	0.00
Lack of Leadership	r-value	-0.08	-0.02	0.07	0.15	-0.02	0.02
	p-value	0.38	0.84	0.48	0.12	0.80	0.83
Lack of Money	r-value	0.275**	0.319**	0.11	0.274**	0.225*	0.295**
	p-value	0.00	0.00	0.24	0.00	0.02	0.00
Family Resistance	r-value	0.05	0.04	0.12	0.11	-0.03	0.07
	p-value	0.62	0.71	0.19	0.23	0.75	0.50
Lack of Training	r-value	0.413**	0.406**	0.361**	0.341**	0.292**	0.446**
	p-value	0.00	0.00	0.00	0.00	0.00	0.00
Technology Integration	r-value	0.382**	0.443**	0.504**	0.396**	0.326**	**0.492****
	p-value	0.00	0.00	0.00	0.00	0.00	**0.00**

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

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

Table 26 presents the relationship between technology integration and teacher effectiveness. The findings reveal a significant correlation between these two variables, as indicated by a correlation coefficient of 0.492 and a p-value of 0.000. This suggests that as technology integration increases, teacher effectiveness tends to improve (Ertmer et al., 2012).

Detailed analysis shows significant relationships across various dimensions of teacher effectiveness and specific aspects of technology integration. For instance, beliefs towards learning-teaching activities significantly correlate with all aspects of teacher effectiveness, including preparation for teaching and planning (correlation coefficient = 0.274, p-value = 0.004), classroom management (0.339, 0.000), knowledge of subject matter (0.283, 0.003), teacher characteristics (0.248, 0.009), and interpersonal relations (0.369, 0.000).

Interestingly, infrastructure and assessment do not show significant relationships with teacher effectiveness, indicating that these factors may not directly impact teachers' perceived effectiveness in the classroom. On the other hand, technological and pedagogical self-efficacy beliefs, along with lack of vision and lack of training, demonstrate significant correlations with various aspects of teacher effectiveness. Table 28 shows the Technology Integration that can best predict Teacher Effectiveness

Table 27

Linear Regression Model for the Level of Teaching Effectiveness using the Level of Technology Integration as a Predictor

Terms	Unstandardized Coefficients		t	p-value	Remarks
	B	Std. Error			
Constant	5.0747	0.2496	20.3355	0.0000	Significant
Beliefs Towards Learning-Teaching Activities	-0.0182	0.1220	-0.1492	0.8817	Not Significant
Beliefs Towards Expert Support	-0.2418	0.1320	-1.8320	0.0700	Not Significant
Infrastructure	0.0538	0.0427	1.2610	0.2103	Not Significant
Content	-0.1259	0.0871	-1.4463	0.1513	Not Significant
Assessment	-0.0219	0.0493	-0.4450	0.6573	Not Significant
Technological Self-Efficacy Beliefs	-0.0116	0.0543	-0.2147	0.8305	Not Significant
Pedagogical Self-Efficacy Beliefs	**-0.2057**	**0.0717**	**-2.8676**	**0.0051**	**Significant**
Belief Towards Change	-0.0159	0.0393	-0.4053	0.6862	Not Significant
Lack Of Vision	-0.0598	0.0651	-0.9186	0.3606	Not Significant
Lack Of Leadership	-0.0325	0.0446	-0.7280	0.4683	Not Significant
Lack Of Money	-0.0936	0.0549	-1.7048	0.0914	Not Significant
Family Resistance	-0.0123	0.0576	-0.2137	0.8312	Not Significant
Lack Of Training	-0.1454	0.0517	-2.8112	0.0060	Significant

Table 27 shows the regression analysis aim at predicting the level of teacher effectiveness through various indicators of technology integration providing compelling results. Among the evaluated indicators, Pedagogical Self-Efficacy Beliefs emerged as the most significant predictor of teacher effectiveness. This variable demonstrated a notable unstandardized coefficient of 0.2476 and a p-value of 0.0006, indicating its strong predictive power

Pedagogical self-efficacy reflects a teacher's confidence in their ability to implement effective teaching strategies, including the integration of technology into their instructional practices. The significance of this finding is supported by existing literature, which underscores the pivotal role of teacher self-efficacy in educational settings.

Contrarily, other indicators such as Beliefs Towards Learning-Teaching Activities, Technological Self-Efficacy Beliefs, and Infrastructure did not present significant predictive value. This suggests that while these factors are essential for the broader context of technology integration, they do not directly influence teacher effectiveness to the same extent as pedagogical self-efficacy.

Another noteworthy finding is the significance of Lack of Training as a predictor, with a p-value of 0.0167. This result highlights the necessity for continuous professional development to equip teachers with the skills required for effective technology integration.

4. DISCUSSIONS OF RESULTS, CONCLUSION, AND RECOMMENDATIONS

4.1. Discussion

Demographic Profile of the Respondents. The data reveals that most respondents fall within the age groups of 21-30 years (34.2%) and 31-40 years (38.7%), indicating that a significant portion of the teaching workforce is relatively young. This youthful demographic could influence their familiarity and comfort with integrating technology into their teaching practices. Additionally, there is a higher representation of female respondents (66.7%) compared to male respondents (33.3%), reflecting broader demographic trends within the teaching profession. The respondents exhibit a diverse range of teaching experience, with the largest group having 4-6 years of experience (27.0%), and a substantial proportion (25.2%) having over 13 years of experience, highlighting a mix of both novice and veteran teachers. Furthermore, a significant number of respondents hold a baccalaureate degree (55.0%), while 45.0% have pursued postgraduate education, suggesting that the high level of educational attainment may correlate with a greater propensity to adopt new teaching methodologies, including technology integration.

Level of Technology Integration. This study comprehensively assessed the level of technology integration in educational settings. The overall result for the level of Technology Integration shows that it has a high weighted mean which means that the mathematics teachers agree on technology integration. There are 13 indicators of Technology Integration such as Beliefs towards Learning-Teaching Activities, Beliefs towards Expert Support, Infrastructure, Content, Assessment, Technological Self-Efficacy Beliefs, Pedagogical Self-Efficacy Beliefs, Belief towards Change, Lack of Vision, Lack of Money, Family Resistance, and Lack of Training.

First, Beliefs toward Learning-Teaching Activities had a notably very high weighted mean which means that the mathematics teachers strongly agree on Technology Integration. This suggests a strong belief among educators that integrating technology enhances the learning process, facilitates lesson design, and supports the development of advanced thinking skills in students (Ertmer, Ottenbreit-Leftwich, 2010).

Second, Beliefs towards Expert Support is rated very high mean which means that the mathematics teachers strongly agree on Technology Integration, highlighting the importance of expert guidance in the effective selection, planning, and use of instructional technology (Lawless & Pellegrino, 2007).

Third, the Infrastructure indicator received a low weighted mean of 2.30, which means that mathematics teachers disagree on Technology Integration. Reflecting significant challenges related to insufficient hardware, software, and internet access in schools. This deficiency in infrastructure limits the potential for technology integration, as adequate resources are crucial for implementing technological advancements effectively (Kozma, 2003).

Fourth, the Content indicator was rated high which means that the mathematics teachers agree on Technology Integrations. Indicating that while there is appropriate curriculum content to complement technology use, there is still room for improvement in aligning technology with pedagogical goals. Effective content integration requires alignment with curricular objectives and teaching strategies (Mishra & Koehler, 2006).

Fifth, the Assessment received a high weighted mean which means that the mathematics teachers agree on Technology Integrations. Indicating that technology is more focused on assessment processes rather than enhancing teaching practices. This finding reflects a potential area for development, emphasizing the need to integrate technology more holistically into the teaching-learning process (Shepard, 2000).

Sixth, Technological Self-Efficacy Beliefs indicate a high weighted mean which means that the mathematics teachers agree on Technology Integrations. This highlights that teachers generally feel confident in their technological capabilities but still experience some concerns about using technology in their courses effectively (Bandura, 1997).

Seventh, Pedagogical Self-Efficacy Beliefs stood out with a high weighted mean which means that mathematics teachers strongly agree on Technology Integration. Signifying a strong confidence among teachers in their ability to effectively integrate technology into their pedagogical practices. This finding is crucial, as research indicates that teachers who possess a high sense of pedagogical self-efficacy are more likely to successfully integrate technology into their instruction, which in turn positively impacts student learning outcomes (Tschannen-Moran & Hoy, 2001).

Eight, Belief towards Change was rated as low with a weighted mean which means that the mathematics teachers disagree on Technology Integrations. This reflects a general perception among educators that technological change is gradual and not immediately effective in enhancing educational outcomes. This perception may hinder the proactive adoption of new technologies and innovative practices (Fullan, 2007).

Ninth, the Lack of Vision indicator scored high mean which means that the mathematics teachers agree on Technology Integrations. This suggests that while there is some institutional expectation and support for technology use, it may not be sufficiently driving substantial change. Effective leadership and a clear vision are critical for creating an environment conducive to technology integration (Anderson & Dexter, 2005).

Tenth, the Lack of Leadership indicator scored a low mean which means that the mathematics teachers disagree on Technology Integrations. This result suggests that while there is some support from leadership, it is not strong enough to drive significant technological integration in teaching practices. Strong leadership is crucial for the successful integration of technology in schools, as it involves setting a clear vision, providing resources, and fostering a culture that values continuous learning and innovation (Anderson & Dexter, 2005). Effective school leaders can facilitate professional development and create an environment that encourages teachers to experiment with and adopt new technologies (Leithwood & Jantzi, 2006).

Eleventh, Lack of Money indicator scored a high mean which means that the the mathematics teachers agree on Technology Integrations. Highlighting the need for adequate funding to support technology integration. Financial constraints can significantly impede the acquisition and maintenance of necessary technological resources (Mouza, 2009).

Twelfth, Family Resistance scored a high mean which means that mathematics teachers agree on Technology Integrations. It underscores the importance of addressing parental concerns and resistance to technology use in education to foster a supportive environment for technology integration (Inan & Lowther, 2010).

Lastly, the Lack of Training indicator scored high mean which means that mathematics teachers agree on Technology Integrations, emphasizing the need for continuous professional development to enhance teachers' skills in using technology effectively in their classrooms (Mouza, 2009).

The findings highlight a very high belief in the positive impact of technology on learning and teaching activities, with educators strongly supporting the notion that technology enhances the learning process and aids in lesson design. However, significant challenges were noted in infrastructure, with a low rating, indicating a lack of sufficient hardware, software, and internet access, which are critical for effective technology integration. The content was rated high suggesting that while the curriculum content is generally appropriate, there is still room for better alignment with pedagogical goals. Assessment practices and technological self-efficacy beliefs received mixed ratings, pointing to a focus on assessment rather than teaching and lingering concerns about teachers' confidence in using technology effectively.

Pedagogical self-efficacy beliefs were notably high, indicating that teachers feel competent in integrating technology into their teaching practices. However, the study also identified areas for improvement, such as overcoming family resistance to technology, addressing funding issues, and providing continuous professional development for educators.

Level of Teacher Effectiveness. The overall weighted mean for the level of Teacher Effectiveness is very high which means that the mathematics teachers' effectiveness is always evident. There were 5 indicators of Teacher Effectiveness.

First, Preparation for Teaching and Planning was rated as very high which means that the mathematics teachers' effectiveness is always evident. This indicates that teachers consistently plan their lessons with attention to individual student differences, utilize effective teaching techniques, and thoroughly review and improve upon their instructional strategies (Clark & Peterson, 1986). Effective lesson planning is essential for successful teaching as it ensures that instruction is aligned with educational objectives and tailored to meet diverse student needs (Reynolds et al., 2002).

Second, Classroom Management received a high rating which means that the mathematics teachers' effectiveness is evident. Reflecting teachers' ability to maintain a productive learning environment, manage classroom behavior, and engage students in meaningful learning activities. Effective classroom management is a critical component of teacher effectiveness, as it directly impacts student engagement and learning outcomes (Marzano et al., 2003).

Third, Knowledge of Subject Matter, which is rated very high means that the mathematics teachers' effectiveness is evident. Indicating that teachers possess a deep understanding of their subject areas and can convey content with confidence and clarity. This aligns with the literature that emphasizes the importance of subject matter knowledge in effective teaching, as it enables teachers to deliver content in a way that is both accurate and engaging for students (Shulman, 1987).

Fourth, Teacher Characteristics, including traits such as empathy, responsibility, and effective communication, were rated very high which means that the mathematics teachers' effectiveness was always evident. These characteristics are vital for building positive teacher-student relationships and fostering a supportive classroom environment that promotes learning and student well-being (Hattie, 2009).

Lastly, Interpersonal Relations is rated very high which means that the mathematics teachers' effectiveness is always evident, highlighting teachers' ability to build strong relationships with colleagues, administrators, and the broader school community. Effective interpersonal skills are crucial for collaboration and creating a positive school climate that supports student learning (Bryk & Schneider, 2002).

Overall, the findings indicate that teachers in this study exhibit high levels of effectiveness across multiple dimensions, which is essential for achieving positive student outcomes and fostering a conducive learning environment.

Significant Differences in Technology Integration when grouped according to age, sex, teaching experience, and highest educational attainment. One of the objectives of this study is to determine if there is a significant difference in Technology Integration when grouped according to age, sex, teaching experience, and highest educational attainment. According to the obtained results, educators' age does not significantly affect their perception of barriers to integrating technology into their teaching practices. This result is consistent with previous research, which suggests that while age might influence confidence levels in using technology, it does not necessarily correlate with technology integration (Inan & Lowther, 2010). As to sex, it also shows no significant difference in the level of technology integration between male and female educators. This supports earlier studies that found gender does not significantly influence the perception of barriers to technology integration, as both male and female teachers encounter similar challenges (Teo, 2008; Wong et al., 2013). As to Teaching Experience, the results implies that the length of teaching experience does not significantly impact how educators perceive barriers to technology integration. Previous studies have shown that regardless of teaching experience, teachers often cite similar barriers such as lack of professional development, insufficient time, and inadequate resources (Hew & Brush, 2007; Ertmer et al., 2012). Also, the result shows no significant difference in the level of technology integration based on the highest educational attainment of the respondents This aligns with findings from other studies which suggest that factors such as access to resources and institutional support play a more critical role than educational attainment in influencing technology integration (Ertmer et al., 2012; Hew & Brush, 2007).

Significant Relationship between Technology Integration and Teacher Effectiveness. Significant Relationship between Technology Integration and Teacher Effectiveness presents the relationship between technology integration and teacher effectiveness. The findings reveal a significant correlation between the two variables. This suggests that as technology integration increases, teacher effectiveness tends to improve (Ertmer et al., 2012). Detailed analysis shows significant relationships across various dimensions of teacher effectiveness and specific aspects of technology integration. For instance, beliefs towards learning-teaching activities significantly correlate with all aspects of teacher effectiveness, including preparation for teaching and planning, classroom management, knowledge of subject matter, teacher characteristics, and interpersonal relations. Similarly, beliefs towards expert support and content also show significant positive correlations with all dimensions of teacher effectiveness (Hew & Brush, 2007). Interestingly, infrastructure and assessment do not show significant relationships with teacher effectiveness, indicating that these factors may not directly impact teachers' perceived effectiveness in the classroom. On the other hand, technological and pedagogical self-efficacy beliefs, along with lack of vision and lack of training, demonstrate significant correlations with various aspects of teacher effectiveness. These findings highlight the critical role of self-efficacy and institutional support in enhancing teacher effectiveness (Inan & Lowther, 2010; Teo, 2008).

Significant Influence in Technology Integration when grouped according to age, sex, teaching experience, and highest educational attainment. Technology Integration can best predict Teacher Effectiveness by using the Linear Regression Model for the Level of Teaching Effectiveness using the Level of Technology Integration as a Predictor shows the regression analysis aims at predicting the level of teacher effectiveness through various indicators of technology integration providing compelling results. Among the evaluated indicators, Pedagogical Self-Efficacy Beliefs emerged as the most significant predictor of teacher effectiveness. It reflects a teacher's confidence in their ability to implement effective teaching strategies, including the integration of technology into their instructional practices. The significance of this finding is supported by existing literature, which underscores the pivotal role of teacher self-efficacy in educational settings. For instance, Tschannen-Moran and Hoy (2001) argue that teachers with high self-efficacy are more likely to embrace innovative practices and integrate technology in ways that enhance student learning outcomes. Furthermore, Ertmer and Ottenbreit-Leftwich (2010) note that self-efficacious teachers are more proactive in employing technology to facilitate active learning and engagement in the classroom. Contrarily, other indicators such as Beliefs Towards Learning-Teaching Activities, Technological Self-Efficacy Beliefs, and Infrastructure did not present significant predictive value. This suggests that while these factors are essential for the broader context of technology integration, they do not directly influence teacher effectiveness to the same extent as pedagogical self-efficacy.

Another noteworthy finding is the significance of Lack of Training as a predictor, with a significant result. This result highlights the necessity for continuous professional development to equip teachers with the skills required for effective technology integration. Lawless and Pellegrino (2007) emphasize that ongoing professional development is critical for teachers to adapt to new technological advancements and improve their teaching efficacy.

4.2. Conclusion

Based on the results, it can be concluded that while there is a strong belief among educators in the benefits of technology integration in teaching and learning activities, significant barriers exist that hinder effective implementation. The lack of adequate infrastructure, including hardware, software, and internet access, remains a major challenge. Additionally, there is a need for better alignment of technology with pedagogical goals and an emphasis on the use of technology for teaching rather than solely for assessment purposes. Despite these challenges, teachers generally have a high level of confidence in their ability to use technology effectively in their classrooms, which is a positive indicator for future integration efforts. The study also highlights the need for strong institutional leadership and vision to support technology integration, as well as the necessity for adequate funding and professional development to equip teachers with the necessary skills and knowledge.

4.3. Recommendations

To enhance the integration of technology in educational settings, it is imperative to address several key areas.

1. Teachers: Identifying technology integration barriers and their impact on teaching effectiveness can inform targeted professional development programs for teachers. By addressing these barriers, teachers can enhance their pedagogical practices and leverage technology more effectively in mathematics instruction.
2. Principals: This study can inform strategic planning processes within school administrations, guiding the development of technology integration plans and instructional support strategies aligned with educational goals and standards.
3. Students: Effective use of technology can enhance student engagement and motivation, making learning more interactive and personalized. Addressing barriers to technology integration can lead to improved learning outcomes for students, fostering deeper conceptual understanding and problem-solving skills in mathematics.
4. Future Researchers: This study can serve as a foundational research piece, inspiring future researchers to delve deeper into the dynamics of technology integration and teaching effectiveness in mathematics teachers. Providing insights into methodological approaches and theoretical frameworks used in this study can guide future researchers in conducting similar investigations or expanding the scope of inquiry.

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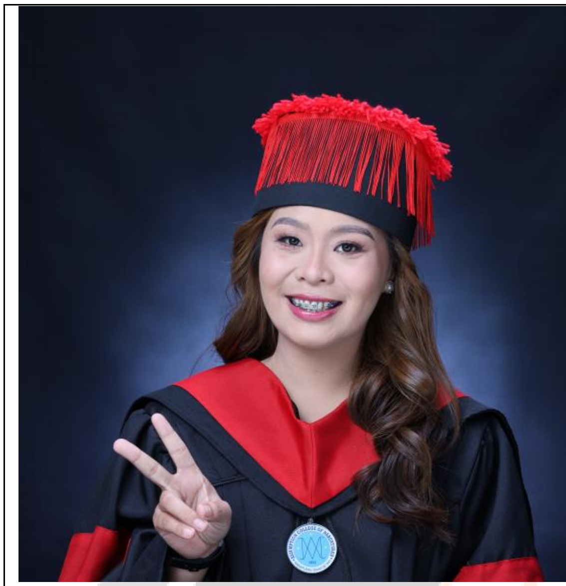
BIOGRAPHIES

	Nicole Jane B. Guariño is an instructor at Agusan del Sur, Davao De Oro. She finished her Master of Arts in Education majoring in Mathematics at Assumption College of Nabunturan.
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