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# Challenges in Teaching Intermediate Mathematics among Teachers in Misamis Oriental Division

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## ABSTRACT

The study explored the challenges faced by public school teachers in teaching Intermediate Mathematics in Misamis Oriental Division during the School Year 2024–2025. It aimed to describe teachers' characteristics, assess their level of challenges, and determine significant relationships among variables. Using a descriptive-correlational method, 200 teachers from Opol, Alubijid, Laguindingan, and Gitagum Districts were selected through stratified random sampling. Data were gathered using a researcher-made questionnaire and analyzed through descriptive and inferential statistics, including t-tests and Pearson's r. Most respondents were female, aged 41–50, with Teacher I positions, bachelor's degrees, 16–20 years of teaching experience, and positive attitudes toward Mathematics. Findings revealed that teachers generally agreed they faced challenges in teaching Mathematics. The most significant difficulty was developing students' problem-solving skills, as many students struggled to apply learned concepts to complex problems, requiring strategies that enhance critical thinking, reasoning, and creativity. The lowest-rated challenge was maintaining student engagement, suggesting that while teachers can spark interest, sustaining it remains a concern. The study concludes that teaching Mathematics effectively demands more time and innovative approaches to improve students' problem-solving abilities. It recommends pursuing graduate studies, conducting engagement-focused activities, and attending training programs to address instructional challenges.

## INTRODUCTION

### Background of the Study

Teaching Mathematics is important in developing logical thinking, problem-solving, and analytical skills among students. At the Intermediate level, Mathematics becomes more difficult as students are introduced to higher concepts beyond basic computation. Teachers play an important role in ensuring that students understand these concepts and develop confidence in teaching them. Teachers encounter many challenges that affect both the teaching process and the learning outcomes of students. Despite the efforts of teachers, many students continue to struggle with solving mathematical word problems. Teachers face difficulties such as a lack of student interest, poor foundational skills, and challenges in solving word problems due to time constraints, limited resources, diverse students' abilities, and varying attitudes toward Mathematics which make teaching more challenging. These challenges not only affect teachers' teaching strategies but also hinder students from achieving better performance in Mathematics.

Teachers lacking proper training may find it difficult to use creative strategies or integrate technology into their classrooms, and negative attitudes toward the subject can limit their ability to create engaging, student-centered learning environments. These challenges lead to poor student performance, low enthusiasm for learning Mathematics, and a negative attitude toward the subject. Addressing these problems is essential for improving Mathematics education.

According to the PISA 2022 results, the Philippines had a percentage of low performers in Mathematics among disadvantaged students. The Philippines is among the highest compared to countries and economies participating in PISA (94.9 %, rank 5/79). The Philippines has one of the lowest differences in Mathematics performance between students in the top quarter and students in the bottom quarter of the economic, social, and cultural status index (36 PISA Score, rank 76/79).

The study of Pokhrel *et al.* (2022) emphasized the multiple issues basic-level Mathematics teachers face, such as curriculum delivery, student engagement, resource utilization, classroom management, assessments, and professional development. Addressing these problems necessitates comprehensive assistance, resource enhancement, capacity building, and pedagogical innovation to improve instructional practices and inform policy for effective Mathematics education.

Research by Togah *et al.* (2022) verified that teachers' group factors and attitudes about Mathematics substantially impact their self-efficacy in teaching Mathematics. The study concludes that improving Mathematics teachers' self-efficacy in teaching the topic is an important requirement that both permanent and future teachers should address for trainees' mathematical success.

Teachers experienced three challenges: inadequate student mastery abilities, limited instructional time, and a lack of ICT infrastructure, as explained by Ling and



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Mahmud (2023). The teachers responded to these issues with innovation and passion, diversifying their teaching methods to meet the challenges and increasing interest and skills in solving sentence-based problems among middle school students. These enable Mathematics teachers to thoroughly understand the issues encountered when teaching sentence-based problem-solving and providing quality education to all students.

This study uses perspectives on challenges to improve understanding of the real-world obstacles and opportunities that Mathematics teachers encounter in remote areas. Additionally, the findings offer valuable recommendations for curriculum developers and teachers to create more supportive environments for effectively integrating problem-solving into Mathematics education.

## Literature and Related Studies

### Respondents' Characteristics

This study identified the challenges in teaching specific Mathematics Concepts related to student attitudes, teaching methods, and assessment. According to Amor (2022), there was a significant correlation between evaluation methodologies and factors such as age, education, experience, and training. Students' attitudes are crucial, although they vary across campuses, but not within their courses. Mathematics teachers relied heavily on traditional methods for both assessment and instruction.

Teachers' knowledge and attitudes on mathematical modelling were generally strongly correlated with their gender and Grade level band. Specifically, compared to their male counterparts, female teachers generally demonstrated a comparatively higher level of knowledge and attitudes toward mathematical modelling. Similarly, compared to middle or high school teachers, elementary school teachers showed a relatively higher level of mathematical modelling knowledge and attitudes. The results of this study are significant for planning professional development in mathematical modelling education and incorporating mathematical modelling standards into teacher preparation programs (Asempapa, 2022).

Self-efficacy for teaching Mathematics (SEFTM) and mathematical dispositions (MD) are essential parts of teachers' attitudes that significantly shape their actions and instructional strategies in the classroom. The results show that PSTs' intended Grade level and subject generally align with their MD and SEFTM: generalists planning to teach elementary school are slightly behind middle and high school teachers, who tend to have more positive MDs. In contrast, elementary and middle school PSTs fall short of those with the highest SEFTM in Mathematics content. Furthermore, MD strongly predicts SEFTM, and it seems that the influence of their past math teachers on PSTs mediates both MD and SEFTM. There are recommendations for future research and implications for teacher education concerning these relationships (Cruz *et al.*, 2020).

### Challenges in Teaching Intermediate Mathematics

Teaching Intermediate Mathematics poses various obstacles that affect teacher effectiveness, student engagement, and overall learning outcomes. Recent studies shed light on these difficulties, identifying common motifs and suggesting improvement solutions.

Mathematics classrooms are increasingly diverse, with students possessing various abilities, learning styles, and backgrounds. Teachers face the challenge of meeting the unique needs of each student, providing differentiated instruction, and ensuring equitable access to learning. Abro (2022) also emphasizes their suggested solutions for efficient Mathematics instruction. The primary goal of this research thesis was to examine the challenges that affect math teachers' ability to deliver high-quality instruction. The primary educational stage is elementary school, where students choose disciplines to pursue in-depth studies in particular fields.

This is a massive difficulty for today's Mathematics teachers, who face significant challenges in both the mathematical content and their teaching methods. To meet these challenges, teachers require commitment, instructional assistance, and encouragement from leaders at all levels. The study's findings have helped to provide some ideas for overcoming issues that teachers and students have while teaching and learning upper elementary Mathematics (Mosekiemang, 2020).

Joshi *et al.* (2022) suggested that problems with software and drawing figures are major predictors of problems in educating mathematical topics among non-educational and unskilled ICT teachers. Challenges in drawing symbols and teaching equations are the main determinants in mathematical content instruction concerning educational background and ICT training for teachers.

### Anxiety in Mathematics

Teachers with greater levels of Mathematics anxiety use less standards-based education, whereas those with a problem-solving mindset use more. Sarason (2021) found that teachers' anxiety, particularly related to Mathematics instruction, can impact their teaching efficacy and student outcomes. Teachers who struggle with Mathematics anxiety may inadvertently transmit these feelings to their students, leading to a classroom environment where both the teacher and students experience stress. Sarason found that anxiety is emphasized as a challenge for teachers, affecting their ability to engage students in learning thoroughly. By recognizing these challenges, schools and educational policymakers can better support teachers through training and resources designed to alleviate Mathematics anxiety, enhancing teacher well-being and student learning outcomes.

In their study, Thompson *et al.* (2021) noted that teachers often experience heightened anxiety when teaching students with varying abilities, especially in subjects like Mathematics. They found that teachers might struggle to provide differentiated instruction without the proper tools or professional support, leading to feelings of inadequacy and stress. Teachers manifest their anxiety

while trying to cater to the varying needs of their students. Therefore, providing teachers with training and resources to differentiate instruction and handle these challenges is important in reducing anxiety and improving teaching outcomes.

According to a study by Green and Sanders (2020), teachers' own negative experiences with Mathematics often contribute to anxiety, which can undermine their confidence in teaching the subject. Their research emphasized that these past experiences shape teachers' pedagogical choices and can sometimes hinder their ability to teach students effectively. The study supports that teachers' past mathematical experiences influence their teaching practices. This emphasizes the need for interventions addressing teachers' professional skills and emotional and psychological barriers to teaching Mathematics.

**Student Engagement**

Student engagement is thought to be a changeable, varied concept that incorporates the three characteristics of behavioral, emotional, and cognitive engagement. However, it is difficult for the teaching profession to comprehend precisely what is needed to encourage student engagement at a nationally consistent level due to differences in vocabulary, structure, and definition, according to research by Rahman *et al.* (2021), which explores student engagement in Mathematics instruction and emphasizes that teacher-driven engagement strategies significantly impact students' willingness to participate in lessons. The researchers found that real-life applications and technology integration are important in encouraging student interest.

Similarly, Sullivan and Clarke (2020) emphasized that student engagement is a varied challenge requiring teachers to consider diverse learning styles and interests. These studies align with the present findings, reinforcing that engagement in Mathematics is a widespread issue and that teachers need additional resources and support to overcome these barriers. Also, research by Chowdhury and Sultan (2022) emphasized that student motivation in Mathematics significantly affects academic performance and engagement. Their study found that interactive and student-centered teaching methods, such as project-based learning, positively influenced students' attitudes toward Mathematics.

Additionally, Attard and Holmes (2021) discussed how a lack of motivation in Mathematics could stem from negative past experiences and a rigid curriculum that does not cater to students' diverse interests. These studies reinforce the current findings by emphasizing that motivation is a key factor in engagement, and addressing it requires a combination of pedagogical strategies and curriculum flexibility.

Larkin and Jorgensen (2023) found that while time constraints in Mathematics teaching are a concern, they are often secondary to issues such as resource availability and student motivation. Similarly, Foster *et al.* (2021) argued that curriculum pacing affects engagement but is not the sole determinant of student participation. These studies align with the present findings by suggesting that time management remains a factor but is overshadowed by more pressing concerns, such as motivation and engagement strategies.

Furthermore, according to the study of Quiblat and Ubayubay (2025), teachers believe that teaching techniques strongly correlate with their parents' marital status and educational level. In summary, it is critical to determine the best teaching philosophies based on the students' backgrounds. Contributing to the development of a comprehensive and helpful learning environment is advised. More research is required to fully comprehend how school settings affect teaching methods and student involvement.

**Student Learning Gaps**

A study by Ndlovu and Ramnarain (2021) emphasized that addressing learning gaps in Mathematics is a significant challenge for teachers, particularly when students enter classrooms with varying levels of prior knowledge. The study found that differentiated instruction and scaffolding techniques are important for closing these gaps.

Similarly, Hodgen *et al.* (2020) investigated the impact of early learning disparities on Mathematics achievement. They concluded that students who start with weak foundational skills continue to struggle unless explicit interventions are implemented. These studies emphasizes that teachers need structured approaches and additional support to help students overcome learning gaps effectively.

Research emphasizes the importance of effective resource use and professional development for teachers. Teachers who adapt instructional resources and apply innovative teaching methods can better address learning gaps. However, challenges like limited access to digital tools and insufficient training in using these resources are common. A study by González and Espinoza (2022) explored the impact of curriculum constraints on student learning and found that rigid pacing schedules often force teachers to move forward with lessons even when students have not yet mastered prerequisite skills.

Similarly, Stein *et al.* (2021) emphasized that time constraints in Mathematics instruction disproportionately affect students with weaker backgrounds, leading to persistent learning gaps. These studies are directly related to the current findings, as they confirm that curriculum limitations can hinder practical remediation efforts, making it harder for students to catch up and succeed in Mathematics. Also, the research by Reynolds and Goodwin (2023) found that teachers often incorporate formative assessments and scaffolding techniques to address past learning gaps while introducing new content, making this challenge more manageable than other factors like time constraints.

Similarly, Park *et al.* (2020) emphasized that technology-assisted learning can support teachers in balancing content delivery and remediation by allowing students to review lessons at their own pace. These studies reinforce the

current findings by demonstrating that while balancing new content with remediation is challenging, structured strategies and technological support can make it more feasible.

**Student Achievement**

Mathematics self-efficacy has a significant role in affecting student achievement gaps. Recognizing the link between self-efficacy beliefs and Mathematics achievement allows policymakers and teachers to implement tailored interventions to boost students' confidence and motivation in Mathematics, resulting in more fair educational outcomes. With this, research has found that teachers globally face various pedagogical challenges that impact student performance. According to a study by Zandvliet and van Wijk (2021), teachers struggle with balancing curriculum delivery and individualized instruction in the face of diverse student needs. This resonates that teachers struggle with large class sizes and the time constraints they experience, which are common barriers to effective teaching. The study indicates that without proper support and resources, even experienced teachers find it challenging to address the diverse needs of students, which directly impacts achievement.

This concern aligns with the findings of a study by Shahan and Fitzgerald (2020), which reported that addressing foundational knowledge gaps in Mathematics is important to improving long-term academic success. Shahan and Fitzgerald argue that early identification and remediation of gaps can help prevent later academic struggles, consistent with the teachers' perceptions in this study. The authors emphasize that failing to address these issues early on can create a cycle of underachievement, which may persist throughout a student's academic career. This supports the notion that addressing gaps in foundational skills is important to improving overall student performance.

Research by Yu *et al.* (2021) supports the notion that student motivation is critical to academic success. However, their study also suggests that motivation can be encouraged through targeted teaching approaches, such as differentiated instruction and setting clear, achievable goals. Yu *et al.* (2021) found that motivation levels tend to improve when teachers provide personalized support and build relationships with students, particularly for underachieving students. Motivation is recognized as a challenge but may be more readily influenced by teaching strategies emphasizing student engagement and support.

The study of Suarez and Ferenal (2025) suggests incorporating interdisciplinary techniques and teacher collaboration to develop projects that link Mathematics with other topics, enhance learning, and maybe improve student achievement. This study provides insightful information on good teaching methods and how teacher attributes affect students' performance in Mathematics.

**Technology**

Mathematics was used as the subject to investigate student success with instructional technology; this study might be replicated with other subjects. In order to motivate education administrators to incorporate educational technology in Mathematics classes, the results of this study can provide insight into how similar educational systems around the world use it to teach Mathematics (Sabyr, 2020).

A study by Zhao *et al.* (2021) found that while technology can enhance Mathematics instruction, many teachers struggle with selecting appropriate digital tools and ensuring that technology use leads to meaningful learning outcomes. Similarly, Hew and Tan (2022) emphasized that inadequate training in educational technology remains a significant barrier to effective technology integration. Both studies align with the present findings, reinforcing the need for comprehensive training programs and better infrastructure to effectively support teachers in utilizing technology. Like the findings of Graham *et al.* (2023) confirmed that teachers often require additional time to prepare technology-enhanced lessons compared to traditional methods, as they need to familiarize themselves with digital platforms, design interactive materials, and anticipate potential technical difficulties.

Additionally, Koehler and Mishra (2021) found that teachers who lack technological pedagogical content knowledge tend to spend more time planning lessons with technology, as they must first understand both the content and the digital tools involved. These studies affirm the findings, emphasizing the importance of training programs that equip teachers with the skills to integrate technology efficiently.

**Problem-Solving Skills**

Teaching mathematical problem-solving skills comes with its own set of challenges. Research by Filipino authors such as Galang and Esteban (2021) reflects similar concerns regarding the challenges in encouraging problem-solving skills in Mathematics. They observed that the traditional curriculum in many Philippine schools often emphasizes rote learning and procedural knowledge over higher-order thinking skills, like problem-solving. Galang and Esteban emphasize the need for curriculum reforms and professional development for teachers to address these challenges in Philippine schools.

This is consistent with the findings of Filipino researchers like Alviar and Zulueta (2020), who explored how time constraints in the Filipino educational system affect the teaching of critical thinking and problem-solving in Mathematics. Alviar and Zulueta noted that the overcrowded curriculum and high-stakes standardized testing often force teachers to prioritize coverage over deeper learning experiences. This aligns with where teachers emphasize the difficulty of managing time to develop problem-solving skills, suggesting a shared understanding that systemic changes are needed to address this issue.

Moreover, collaborative learning has also been shown to enhance students' problem-solving abilities. Research

by Filipino teachers such as Dizon and Tan (2020) emphasizes that motivation is important to student success, especially in Mathematics education. Their study found that motivating students to persist in problem-solving tasks requires more than just rewards or encouragement; it involves developing self-confidence, encouraging a growth mindset, and creating learning environments where students feel safe to struggle with complex problems. Dizon and Tan's work supports the findings that motivation is recognized as a challenge. However, teachers may benefit from strategies that enhance student engagement and confidence in solving mathematical problems.

The cited literature and studies strongly relate to the present study, which tackles challenges in teaching Mathematics and emphasizes that teachers' characteristics, attitudes towards Mathematics, and resources significantly influence teaching processes. However, challenges like limited resources, lack of professional development, and difficulty implementing innovative teaching methodologies remain. In addition, the literature and studies give us insights into understanding challenges in teaching Mathematics and can provide a framework for improving teaching practices and professional development programs. It emphasizes the need for sustained support systems, specialized training, and resources to enhance informative practices and teachers' confidence, ultimately improving teaching efficacy and student learning outcomes.

**Theoretical Framework**

This study is anchored on Jean Piaget's (1896-1980) constructivist learning theory, emphasizing that learning happens when students actively build their knowledge by interacting with the world. This theory assumes that the best way to learn is by asking questions, thinking critically, and solving problems in a student-centered way. Jean Piaget's work is considered one of the central pillars of constructivism. His theory of cognitive development proposed that student go through stages of intellectual growth, constructing their understanding of the world through active interaction with their environment. He argued that learning is a process of assimilation and accommodation, where students adapt their existing mental models to new experiences. His stages of cognitive development (sensorimotor, preoperational, concrete operational, and formal operational) laid the groundwork for understanding how students build knowledge through interaction and experience. His work, first published in the early 20th century, influences constructivist approaches to education.

This theory, which emphasizes active knowledge production through experiences and interactions, is highly applicable to the study of challenges in teaching Mathematics among teachers. According to Piaget, students develop understanding by integrating new information into past knowledge, making learning an active rather than passive process. This concept has a direct impact on how teachers approach Arithmetic instruction. Teachers must build learning settings that promote exploration, problem-solving, and critical thinking, in line with the constructivist approach. However, difficulties in applying such tactics may result from a lack of professional development, insufficient resources, or poor student preparation for inquiry-based learning. Furthermore, his emphasis on developmental phases emphasizes the importance of teachers tailoring education to students' cognitive skills, which can be difficult in classes with a wide range of learning levels. Understanding these principles allows the study to provide insights into how constructivist methods can address teaching difficulties and improve student outcomes in Mathematics, as well as identify gaps in teacher training and support systems that impede effective constructivist teaching practices.

**Statement of the Problem**

This study aimed to determine the level of challenges in teaching Intermediate Mathematics among teachers in select Districts of Misamis Oriental Division during the School Year 2024-2025.

It specifically answered the following questions:

1. What is the respondents' level of challenges in teaching Intermediate Mathematics based on anxiety in Mathematics, student engagement, student learning gaps, student achievement, technology, and problem-solving skills?
2. Is there a significant relationship between the respondents' challenges in teaching Intermediate Mathematics and each of their characteristics?

**Scope and Limitations**

This study focused on the challenges in teaching Intermediate Mathematics among teachers in select districts of Misamis Oriental during the School Year 2024-2025. This research involved schools and teachers within the district, particularly in Opol, Alubijid, Laguindingan, and Gitagum, to make the findings relevant. The respondents of this study were the two hundred (200) Grade 4, 5, and 6 Public Elementary School Teachers in the district mentioned above. The independent variables are limited to the respondents' characteristics, like age, sex, position, number of years in teaching Mathematics, highest educational attainment, training/seminars attended in teaching Mathematics, and attitude towards Mathematics. Moreover, the dependent variables are also limited to anxiety in Mathematics, student engagement, student learning gaps, student achievement, technology, and problem-solving skills.

## MATERIALS AND METHODS

**Research Design**

This study made use of a descriptive correlational method of research. This is a quantitative approach to determine the correlation between teachers' challenges in teaching Mathematics and their characteristics. This method was

chosen because it supports understanding the strength and direction of associations between variables, helping to emphasize challenges in teaching Mathematics. This utilizes surveys to collect data from participants. Descriptive research aims to provide a detailed and accurate account of a particular population or situation. It aims to observe, describe systematically, and document characteristics, behaviors, or trends without manipulating variables. To obtain this information, participants complete a researcher-made questionnaire, a standard method for getting research subjects to reply.

Data was gathered using a questionnaire, which offers a quantitative method that yields facts, knowledge, and numerical proof. One of its advantages was the questionnaire's ability to reach many people successfully. This decision makes the researcher's job of obtaining data easier.

These could complement survey data by providing more detailed insights into teachers' challenges with Mathematical concepts. The study uses existing data from school districts about teacher performance, training programs, or student outcomes related to teaching Mathematics.

**Study Setting**

The study was conducted in select Districts of the Misamis Oriental Division, specifically in the Opol, Alubijid, Laguindingan, and Gitagum districts. It involves teachers at the public elementary schools comprising medium and large schools in Grades 4, 5, and 6.

Misamis Oriental is a province in the northern part of Mindanao, Philippines. It is a vibrant and diverse area characterized by its rich cultural heritage and lively communities. Made up of several municipalities, this district is known for its agricultural productivity, with rice, corn, and various fruits serving as key crops that support the local economy. The region also features many natural attractions, including beautiful beaches, lush mountains, and waterfalls, making it a popular eco-tourism destination.

The district combines urban and rural environments, where traditional practices coexist with modern developments. Regarding education, the area has several public and private schools, reflecting a commitment to enhancing educational access and quality for residents. The select District of Misamis Oriental acts as an important hub for political representation, working to meet the needs and goals of its constituents through community engagement and development initiatives.

**Research Respondents**

The participants of this study were the two hundred (200) public elementary school teachers handling students from Grades 4, 5, and 6 in the select districts of Misamis Oriental Division. The respondents include Intermediate Mathematics teachers with varying years of teaching experience, educational backgrounds, and professional development opportunities, such as seminars and training they have attended related to teaching Mathematics.

**Sampling Technique**

In this study, the researcher utilized Stratified Random Sampling to obtain the desired number of respondents, the two hundred (200) public elementary school teachers. It includes elementary public schools in the Opol, Alubijid, Laguindingan, and Gitagum districts of Misamis Oriental for the School Year 2024-2025. As a result, with the use of Slovin's Formula, a total population of four hundred five (405) public elementary school teachers and a margin of error of 5%, or 0.05, where the sample was obtained. This sample size was a representative of the greater population of public-school teachers in the specified district and considered sufficient for successful data collection and analysis. Moreover, a stratified random sampling procedure was employed. This is done by dividing the computed sample size by the population size. Then, a simple random sampling technique was used to distribute the number of respondents by Grade level. This is done through a lottery method to give them an equal chance to participate in the study.

**Research Instrument**

The instrument used to gather the necessary data is a researcher-made questionnaire composed of two parts:

Part I dealt with the respondents' characteristics in terms of age, sex, position, number of years in teaching Intermediate Mathematics, highest educational attainment, and training/seminars attended in teaching Intermediate Mathematics. There were ten (10) indicators of the attitude towards teaching Mathematics, patterned and modified to the study of Gómez-Chacón, Barcelo, and Marbán (2023), entitled "Inquiry-Based Mathematics Education and Attitudes towards Mathematics: Tracking Profiles for Teaching." These indicators followed the scale as 4 (Strongly Agree), 3 (Agree), 2 (Disagree), and 1 (Strongly Disagree).

Part II is also a researcher-made questionnaire that assesses the challenges in teaching Intermediate Mathematics. The subsections included the variables from the study of Farooqi (2020) entitled "Teacher Perception of Inquiry-Based Teaching in Mathematics in Early Childhood," such as anxiety in Mathematics, student engagement, student learning gaps, student achievement, technology, and problem-solving skills. The variables have ten (10) indicators, with the options of 4 (Strongly Agree), 3 (Agree), 2 (Disagree), and 1 (Strongly Disagree).

Data for the study were collected using a survey form to gather, measure, and analyze study-related data to generate potential results.

**Statistical Treatment of Data**

After collecting and recording the data that were gathered in the study, the researcher used the following statistical tools:

Descriptive statistics such as frequency, percentage, mean, and standard deviation are used to describe the study variables. Moreover, a Pearson's Correlation Coefficient (Pearson r) is utilized to determine the significant relationship between the respondents' challenges in teaching Mathematics and each of their characteristics.

**Ethical Considerations**

This study followed ethical considerations to ensure all participants' rights, welfare, and privacy. Before conducting the study, formal approval was obtained from the Dean's office of the Graduate School to ensure compliance with institutional policies and ethical research standards. The research instruments underwent a rigorous validation process by experts to ensure their reliability, clarity, and appropriateness for the study.

Before answering the questionnaire, all teacher respondents were provided with an informed consent form, which outlined the purpose of the study, which they filled out voluntarily, the voluntary nature of their participation, and their right to withdraw at any time without any repercussions. It was explicitly stated that their participation was not mandatory, and they were neither forced nor compensated in any form for completing the survey.

Furthermore, this study strictly followed data privacy and confidentiality protocols. All collected responses remained anonymous, with no identifying information in the final analysis. The data was used solely for research purposes and stored securely to prevent unauthorized access. By ensuring these ethical measures, the study upheld the research process's integrity while protecting all participants' dignity and rights.

## RESULTS AND DISCUSSION

**Table 1:** Distribution of Respondents' Attitudes towards Teaching Mathematics

| Indicator | Mean | SD | Description |
|---|---|---|---|
| **As a teacher, …** | | | |
| I feel confident in explaining mathematical concepts to my students. | 3.04 | 0.78 | Agree |
| I enjoy exploring innovative strategies to make Mathematics engaging and meaningful for students. | 3.42 | 0.95 | Strongly Agree |
| I believe that Mathematics is important for developing critical thinking, problem-solving skills, and practical knowledge in all students. | 3.47 | 0.97 | Strongly Agree |
| I perceive teaching Mathematics as a demanding yet fulfilling endeavor that encourages both personal and professional growth. | 3.09 | 0.80 | Agree |
| I regularly connect Mathematical concepts to real-life applications to enhance students' understanding and engagement. | 3.16 | 0.83 | Agree |
| I occasionally feel challenged by teaching advanced Mathematical topics, but I actively seek strategies to improve my understanding and teaching methods. | 2.98 | 0.77 | Agree |
| I believe that all students can succeed in Mathematics with the proper support, encouragement, and personalized instruction. | 3.13 | 0.81 | Agree |
| I enjoy solving Mathematical problems and demonstrating the problem-solving process to my students. | 3.21 | 0.85 | Agree |
| I believe ongoing professional development in Mathematics teaching is important for my continuous improvement and effectiveness as a teacher. | 2.99 | 0.78 | Agree |
| I am committed to overcoming challenges in teaching Mathematics to enhance student learning outcomes. | 3.17 | 0.84 | Agree |
| **Overall** | **3.17** | **0.84** | **Agree** |

*Legend:*
*3.26-4.00 Strongly Agree / Very Positive*
*2.51-3.25 Agree / Positive*
*1.76 – 2.50 Disagree / Negative*
*1.00-1.75 Strongly Disagree/Very Negative*

Table 1 reveals the distribution of respondents' attitudes towards teaching Mathematics, with an overall mean score of 3.17 (SD=0.84), described as Agree and interpreted as Positive. This means that the respondents demonstrated a positive attitude towards teaching intermediate Mathematics. This implies that teachers generally have a confident attitude toward teaching Mathematics, demonstrating assurance, dedication, and a belief in the subject's importance for students' growth and learning.

As indicated, most of these teachers are already mature and experienced, having taught for 16 to 20 years. They are female, aged 41 to 50 years old, and have been teaching at the Teacher I level for many years. They have attended training only within the school or district, but not beyond that. Even though they are limited to local seminars, their attitude toward teaching Mathematics remains strong. These teachers often show a positive and dedicated attitude in teaching Mathematics. They are hardworking, patient, and committed to helping their students understand difficult lessons in Mathematics. They know how to handle different types of students because they have extensive experience. Their passion and concern for students' learning persist, even if they haven't been promoted or enrolled in higher-level training.

O'Neal *et al.* (2020) found that teachers' attitudes towards Mathematics significantly influence their teaching effectiveness and student outcomes. Teachers with a positive attitude towards Mathematics tend to employ more engaging teaching methods and can better

overcome the challenges of teaching complex concepts. This finding is consistent with the current study's results, which indicate that the overall positive attitude of teachers aligns with their recognition of the importance of continuous improvement in teaching methods and professional development. Furthermore, it emphasizes the importance of cultivating positive teacher attitudes in professional development programs to improve educational outcomes in Mathematics.

In the indicator, As a teacher, I believe that Mathematics is important for developing critical thinking, problem-solving skills, and practical knowledge in all students, with the highest mean score of 3.47 (SD=0.97), described as Strongly Agree and interpreted as Very Positive. This means that the teachers have demonstrated a very positive attitude towards the importance of Mathematics, and they understand that Mathematics helps students develop important thinking skills and practical abilities. This further means that the teachers deeply value Mathematics because they know it helps students become better problem solvers and thinkers in real-life situations.

This belief can also motivate new and young teachers. If they continue to support veteran teachers and provide them opportunities to share their experiences, they can help others create a stronger, more meaningful Mathematics learning environment. Eventually, they believe this presents an excellent opportunity for school administrators to empower teachers further. When teachers believe in the importance of Mathematics, leaders should support this belief with programs, resources, and recognition, so that it becomes action and students sincerely benefit.

According to Williams and Brown (2021), Mathematics education plays a central role in the development of critical thinking and problem-solving skills. Their study explored how students' abilities to tackle complex, real-world problems are often enhanced through a deep understanding of mathematical principles. Teachers who view Mathematics as important to student growth, as indicated by the high mean score in this study, are likely to be more effective in encouraging these skills in their students. This aligns with the current study's results, as teachers in the Misamis Oriental Division appear to recognize the importance of Mathematics in nurturing future-ready students. This awareness of the impact could encourage teachers to incorporate problem-solving techniques and critical thinking skills into their teaching and learning process.

Conversely, in the indicator, As a teacher, I occasionally feel challenged by teaching advanced Mathematical topics, but I actively seek strategies to improve my understanding and teaching methods, got the lowest mean score of 2.98 (SD=0.77), described as Agree and interpreted as Positive. This means that teachers are demonstrating a positive attitude and a willingness to develop and improve, even when they acknowledge challenges in teaching Mathematics. This implies that despite their challenges, teachers continue to take a proactive and introspective approach to improving their proficiency. This further implies that most teachers agree that they face challenges when teaching more advanced topics and actively seek ways to overcome these difficulties.

A study by Johnson *et al.* (2022) examined the challenges Mathematics teachers face when teaching advanced topics and found that many teachers feel underprepared and lack sufficient support to teach higher-level mathematical concepts effectively. Their findings suggest that while teachers are willing to improve, they often struggle due to a lack of specialized training and resources. This study is aligned with the current study's findings, where teachers acknowledged challenges but actively sought solutions, suggesting a need for more comprehensive professional development programs. The current study emphasizes the importance of addressing teacher preparedness, especially in higher-level Mathematics education.

Problem 1. What is the Respondents' Level of Challenges in Teaching Intermediate Mathematics Based on Anxiety in Mathematics, Student Engagement, Student Learning Gaps, Student Achievement, Technology, and Problem-Solving Skills?

**Table 2:** Summary Distribution of the Respondents' Level of Challenges in Teaching Intermediate Mathematics

| Variable | Mean | SD | Interpretation |
|---|---|---|---|
| Anxiety in Mathematics | 3.13 | 0.83 | Challenged |
| Student Engagement | 3.07 | 0.82 | Challenged |
| Student Learning Gaps | 3.19 | 0.88 | Challenged |
| Student Achievement | 3.18 | 0.86 | Challenged |
| Technology | 3.10 | 0.84 | Challenged |
| Problem-Solving Skills | 3.28 | 0.89 | Highly Challenged |
| **Overall** | **3.16** | **0.85** | **Challenged** |

*Legend:*
*3.26-4.00 Strongly Agree / Highly Challenged*
*2.51-3.25 Agree / Challenged*
*1.76 – 2.50 Disagree / Slightly Challenged*
*1.00-1.75 Strongly Disagree / Not Challenged*

Table 2 reveals the summary of the respondents' level of challenges in teaching intermediate Mathematics, with an overall mean score of 3.16 (SD=0.85), interpreted as Challenged. This means that teachers are challenged

by teaching intermediate Mathematics. This implies that teachers are facing difficulties in teaching intermediate Mathematics and find it challenging in many aspects of their work. As observed, most teachers struggle to teach intermediate Mathematics. They deal with a variety of concerns at once: Some students are unmotivated, some are falling behind in their studies, some become frightened about Mathematics, and others struggle with problem-solving. Here, teachers are expected to use technology, explain complex concepts, and complete the curriculum on schedule. These demands make the work even more difficult. It also suggests that the system may not offer sufficient support, despite these teachers doing their best. Training programs may be overly basic or outdated. Some teachers may not have the time to attend seminars or design interactive materials. Others may want emotional assistance because teaching a challenging class every day can be quite exhausting. These difficulties, if not addressed, may have an impact on both teachers' well-being and students' learning development.

The results emphasize that teachers experience a wide range of difficulties in areas such as anxiety, student engagement, learning gaps, achievement, technology, and problem-solving skills, all of which are key to successful Mathematics instruction. Teachers can collaborate on professional development and help one another when considering this outcome. This implies that schools can use shared methodologies and peer learning to solve everyday challenges in a team-based approach. This ensures that support systems are applicable and adaptable across classes; future interventions or solutions should consider this mild consistency. In the end, knowing that teachers' experiences are consistent aids informative leaders in creating inclusive and practical approaches to the problems facing Mathematics education.

In connection with this, a study by De Guzman and Santos (2021) explores the varied challenges that Mathematics teachers face in the Philippines. Their research emphasizes that teachers often encounter difficulties in engaging students, addressing learning gaps, and integrating technology into their teaching methods, which aligns with the findings. While teachers are committed to their students' success, the educational system often limits the resources and support they receive, making it harder to overcome these challenges. This study emphasizes the importance of ongoing professional development and systemic changes to overcome these barriers.

The variable on Problem-Solving Skills received the highest mean score of 3.28 (SD=0.89), interpreted as Highly Challenged. This means that teachers felt challenged in developing their problem-solving skills. This implies that teachers find it very difficult to teach students how to solve mathematics problems effectively. As observed, problem-solving skills are the most challenging aspect for teachers among all the variables in teaching intermediate Mathematics, because they struggle significantly when teaching students how to solve mathematical problems, think critically, analyze problems, and find practical solutions. This could be due to several reasons, such as students lacking basic skills, time pressure from the curriculum, large class sizes, or insufficient resources and strategies for teaching problem-solving effectively. They know that problem-solving is one of the most critical skills in Mathematics. However, teaching this skill is also one of the hardest. Students who do not understand the basics can not move on to higher-level thinking. Some students also lack confidence, which causes them to give up easily.

Research by Tiongco and Remo (2020) provides insight into the broader context of teaching problem-solving skills in Philippine schools. Their study emphasizes that despite the emphasis on problem-solving in modern curricula, many teachers face constraints such as large class sizes and inadequate training in encouraging critical thinking. They argue that addressing these challenges requires instructional strategies tailored to diverse student needs and a more profound restructuring of Mathematics, moving from rote learning to more interactive and problem-based learning methods.

On the other hand, the variable Student Engagement received the lowest mean score of 3.07 (SD=0.82), interpreted as Challenged. This means that teachers felt challenged in engaging students, especially in solving problems. This implies that teachers struggle to keep students engaged and actively involved during Mathematics lessons. As observed, among all the challenges teachers face in teaching intermediate Mathematics, student engagement remains a challenge, but it is not as difficult as the others. Showing that teachers agree it is a problem, but it may not be the most serious one compared to other variables. This further implies that many teachers still find it challenging to keep students actively involved and interested in learning Mathematics. Even though it is not the most severe challenge, it still affects how well students participate, listen, and enjoy the lesson. If students are not engaged, they can easily become bored, distracted, or stop trying to learn, especially when the topic is challenging.

The findings are supported by research from Villanueva and Santos (2021), which revealed that while teachers often find it challenging to engage students in abstract mathematical concepts, engagement is more successful when interactive lessons are connected to real-life applications. They argue that student engagement improves when teachers adopt strategies that involve students and connect Mathematics to their everyday experiences, enhancing motivation and learning outcomes. The challenges of student engagement remain, but they can be addressed through appropriate teaching methods.

Problem 2. Is there a Significant Relationship between the Respondents' Challenges in Teaching Intermediate Mathematics and Each of Their Characteristics?

**Table 3:** Result of the Test on Relationship Between the Respondents' Challenges in Teaching Intermediate Mathematics and Each of Their Characteristics

| Respondents' Characteristics | Challenges in Teaching Intermediate Mathematics | | | | | | Overall |
|---|---|---|---|---|---|---|---|
| | Anxiety in Mathematics | Student Engagement | Student Learning Gaps | Student Achievement | Technology | Problem-Solving Skills | |
| | r-value | r-value | r-value | r-value | r-value | r-value | r-value |
| | p-value | p-value | p-value | p-value | p-value | p-value | p-value |
| | Interpretation | Interpretation | Interpretation | Interpretation | Interpretation | Interpretation | |
| Age | 0.3097 | 0.9453 | 0.8349 | 0.9476 | 0.6949 | 0.9498 | 0.7804 |
| | 0.0308 | 0.0308 | 0.0204 | 0.0107 | 0.0304 | 0.0302 | 0.0256 |
| | S | S | S | S | S | S | S |
| Sex | 0.6906 | 0.8634 | 0.8549 | 0.8648 | 0.7649 | 0.5099 | 0.7851 |
| | 0.0540 | 0.0209 | 0.0306 | 0.0206 | 0.0302 | 0.0106 | 0.0278 |
| | NS | S | S | S | S | S | S |
| Position | 0.8645 | 0.5489 | 0.9436 | 0.6439 | 0.9538 | 0.9310 | 0.8143 |
| | 0.0306 | 0.0308 | 0.0304 | 0.0106 | 0.0270 | 0.0108 | 0.0234 |
| | S | S | S | S | S | S | S |
| Number of Years in Teaching Mathematics | 0.9463 | 0.9645 | 0.6971 | 0.7597 | 0.7950 | 0.9365 | 0.8499 |
| | 0.0109 | 0.0207 | 0.0105 | 0.0206 | 0.0301 | 0.0150 | 0.0180 |
| | S | S | S | S | S | S | S |
| Highest Educational Attainment | 0.6490 | 0.8538 | 0.9476 | 0.8539 | 0.9300 | 0.8509 | 0.8475 |
| | 0.0574 | 0.0208 | 0.0307 | 0.0301 | 0.0205 | 0.0205 | 0.0300 |
| | NS | S | S | S | S | S | S |
| Training/Seminar Attended in Teaching Mathematics | 0.9645 | 0.6979 | 0.5954 | 0.8534 | 0.6090 | 0.7097 | 0.7383 |
| | 0.0109 | 0.0187 | 0.0306 | 0.0306 | 0.0208 | 0.0109 | 0.0204 |
| | S | S | S | S | S | S | S |
| Attitude towards Teaching Mathematics | 0.9632 | 0.8546 | 0.9645 | 0.6987 | 0.9099 | 0.9001 | 0.8818 |
| | 0.0308 | 0.0208 | 0.0106 | 0.0340 | 0.0309 | 0.0108 | 0.0230 |
| | S | S | S | S | S | S | S |

*Legend: S- Significant, NS- Not significant*

Table 3 illustrates the test results on the relationship between the respondents' challenges in teaching intermediate Mathematics and their characteristics. Overall, the results of the respondents' challenges in teaching intermediate Mathematics and their attributes in terms of age, sex, position, number of years in teaching Mathematics, highest educational attainment, training/seminar attended in teaching Mathematics and attitude towards teaching Mathematics shows a significant relationship as indicated by the r-value and p-value less than 0.05 alpha level, which led to the rejection of the null hypothesis. This means that teachers demonstrated that challenges in teaching intermediate Mathematics are significantly related to their characteristics. This implies that the challenges teachers face in teaching intermediate Mathematics are clearly connected to their characteristics, such as age, sex, position, years of experience, and educational background. As observed, teachers' characteristics are significantly related to the challenges they face when teaching Mathematics, as they recognize that no two teachers are the same. Some teachers, who have been teaching for years, continue to struggle with new topics. Others are young and active, yet they are unsure about delivering difficult Mathematics lessons because, in Mathematics, it is not just about knowing numbers; it involves understanding students, managing time, using technology, and feeling confident.

Further, it also shapes their teaching practices, classroom

management strategies, pedagogical decisions, and student interactions. They observed that teachers who attend more seminars and training feel more confident and try different pedagogical approaches in the classroom. That is why it is important that they provide teachers with the necessary support. They should support them based on their needs. When teachers are properly supported, they feel more confident, and as a result, students learn better. Age, for example, may affect a teacher's capacity to adapt to new teaching practices or technologies. Older teachers may face greater difficulties in integrating digital tools or experience higher levels of anxiety when adjusting to new curriculum changes, resulting in a significant correlation between age and challenges such as technology use, Mathematics anxiety, and problem-solving instruction. Due to their inexperience, younger teachers may struggle with classroom control and resolving students' learning gaps.

Similarly, teaching experience influences how a teacher approaches typical classroom challenges. More experienced teachers typically have superior material knowledge and classroom management skills, but they may also develop habits that limit their flexibility in adopting innovative tactics. This duality explains the considerable positive relationship between the number of years teaching Mathematics and problems such as student interest and problem-solving abilities. While experienced teachers are frequently more aware of good strategies, they might notice students' weaknesses more easily, which can make the challenges of teaching feel even greater.

In addition, educational attainment and the teacher's position are also important considerations. Teachers with better academic degrees or leadership positions may be required to take on more demanding teaching assignments or mentor less experienced colleagues, exposing them to a broader range of instructional problems. This could explain the considerable correlations between these qualities and aspects, including student achievement, learning gaps, and technology use. These teachers may expect more from their students, which can make them feel the challenges of reaching teaching goals even more strongly. Training and seminars on teaching Mathematics are highly correlated with all the listed challenges. This demonstrates that professional development not only broadens and deepens teachers' awareness and understanding of optimal practices but also increases their awareness of existing gaps and limitations in their teaching or among their students.

However, teachers who receive such training are more likely to critically review their classroom methods and identify opportunities for improvement, such as addressing student misconceptions or effectively integrating problem-solving skills, resulting in a significant relationship. Ultimately, the attitude towards teaching Mathematics has a profound impact on all aspects of instructional delivery. Teachers with a more positive attitude are more motivated, open to new techniques, and student-centered, but they may also have higher expectations of themselves and their students. This can lead to increased sensitivity to concerns such as student learning gaps, low engagement, and poor performance, as indicated by the significant correlations in the data.

The variable age showed a significant relationship with challenges in teaching intermediate Mathematics. This means that teachers' age is strongly linked to their management of these challenges, indicating that older, more experienced teachers may approach certain aspects, such as student anxiety or engagement, differently than their younger counterparts. The longer time of these teachers likely gives them a good range of strategies for coping with classroom difficulties, although newer challenges, such as integrating technology, might still pose struggles. This further means that a teacher's age significantly impacts how they view and handle these challenges. According to this relationship, teachers may face more challenges as they get older in adjusting to new technology, interacting with contemporary students, or meeting changing curriculum requirements.

Additionally, older teachers might be used to traditional teaching methods, which can make it more challenging for them to adapt to new teaching approaches. This can make things more difficult in areas such as teaching students to solve problems and engage with the material. However, their years of experience may also have made them more aware of these problems, prompting them to evaluate their teaching environment critically. This perspective emphasizes that age is a complicated component influencing teaching practices rather than just a number. It provides insight into the understanding that, although age-related experience can be beneficial, it also emphasizes the necessity of continuing assistance and professional development to ensure that senior teachers can continue to meet the demands of the modern classroom. After giving this some thought, schools need to acknowledge the different needs of teachers in various age groups and offer resources and specialized training to help all teachers, regardless of age, overcome the challenges of teaching Mathematics.

This aligns with findings by Bautista *et al.* (2021), who explored how teachers with more experience often develop unique ways of managing classroom dynamics. However, they also noted that these teachers sometimes face challenges when keeping up with technological advancements or evolving teaching methods.

The variable sex showed a significant relationship with challenges in teaching intermediate Mathematics. This means that the role of gender, while not significantly affecting overall teaching challenges, does appear to influence specific areas, such as student engagement and achievement. This finding can be attributed to societal expectations, which often influence different teaching styles and classroom interactions based on gender. This further means that teachers' perceptions and reactions to challenges in the classroom may be influenced by their gender. This implies that different communication styles, emotional responses, or teaching philosophies, which

gender roles and societal expectations can influence, may cause male and female teachers to experience and interpret challenges, such as mathematical anxiety, student engagement, or classroom dynamics, differently. In the field, some male teachers may struggle to connect with their students, potentially impacting emotional engagement. In contrast, female teachers may report higher levels of Mathematics anxiety, which may hinder their confidence in teaching the subject.

However, gender-related experiences and beliefs influence instructional problems rather than suggesting that one sex is fundamentally more capable than the other. This realization emphasizes how critical it is to establish a welcoming and inclusive work atmosphere where male and female teachers have equal access to mentorship, training, and opportunities to discuss problems unique to their experiences. Considering this, teachers and administrators should be aware of these gender-related dynamics when developing teacher development initiatives that promote fairness, self-assurance, and efficacy for all teachers.

Santos and Reyes (2020) found that male and female teachers tend to approach classroom management and student engagement differently, with women often using more collaborative techniques that may enhance student involvement. The study also suggested that these gender differences in teaching approach could be one of the reasons why female teachers might handle student engagement more effectively.

The variable position showed a significant relationship with challenges in teaching intermediate Mathematics. This means that the teaching position of respondents also plays an important role in shaping their ability to tackle learning challenges. Those in higher positions, such as Master Teachers, tend to have more resources and support, which could give them an advantage when handling classroom problems. This further means that teachers are frequently expected to exhibit pedagogical skills, guide colleagues, spearhead innovations, and manage increasingly complex student requirements. This might increase pressure and improve their awareness of the complex problems in Mathematics education. This knowledge can result from higher self-expectations and a more profound understanding of student learning gaps, engagement problems, or challenges, combined with technology and problem-solving techniques.

On the other hand, teachers in lower positions may have to contend with problems such as reduced self-sufficiency, limited opportunities for professional growth, or larger class sizes, all of which can contribute to stress and problems.

Moreover, professional jobs influence the extent of obligations, the variety of tasks, and the degree of challenges faced. As a result, school heads and administrators should consider providing differentiated support based on teachers' positions, ensuring that teachers receive the necessary training, resources, and encouragement to overcome the unique challenges of teaching intermediate Mathematics. However, the shift in their responsibilities, which are more focused on mentoring and administrative duties, might take away from the time they spend directly teaching students, creating different challenges.

According to Bautista *et al.* (2022), teachers in higher positions often face challenges balancing leadership roles and direct teaching responsibilities, which may make them more adept at managing overall classroom problems but less involved in day-to-day student engagement.

The variable number of years teaching Mathematics showed a significant relationship with challenges in teaching intermediate Mathematics. This means a teacher's Mathematics experience strongly correlates with how they approach and manage teaching challenges. Teachers with extensive experience in the field often have better strategies for addressing student anxiety or engagement problems and are generally more confident in managing their classrooms. This means further that teachers with more years of experience may better understand the curriculum and student learning patterns, which can help them identify achievement gaps, engagement concerns, and the challenges of teaching mathematical topics. This increased awareness can lead to a more critical evaluation of obstacles, which may explain the high association. Furthermore, Teachers who have been in the profession for a long time may find it challenging to adapt to new teaching methods, technology, or changes in school rules, especially if they were trained in older teaching methods. Less experienced teachers, on the other hand, may lack the classroom management strategies and confidence required to successfully address learning gaps and nurture problem-solving abilities, adding to the perception of considerable hurdles.

This interpretation emphasizes that experience alone does not erase teaching challenges but alters how such challenges are seen and treated. Then, both beginner and expert teachers require ongoing, targeted professional development customized to their degree of expertise. Then the school should provide organized mentoring and advanced, up-to-date training for experienced teachers to guarantee that all teachers, regardless of duration, are prepared to handle the changing demands of Mathematics instruction.

However, even experienced teachers face new challenges, especially in keeping up with technological advancements and ensuring all students succeed in Mathematics. This is consistent with the research of Cruz and Aquino (2021), who noted that experienced teachers are better equipped to deal with the practical aspects of teaching, such as managing student conduct, but must continually adapt to changing educational tools and strategies to remain effective.

The variable Highest educational attainments showed a significant relationship with challenges in teaching intermediate Mathematics. This means that it may impact their ability to overcome specific teaching challenges, particularly in the areas of technology use and addressing student achievement gaps. This means further that

teachers with higher levels of education, such as master's degrees or training in Mathematics education, are more likely to have an academic understanding and exposure to advanced educational practices. This larger intellectual basis can help them improve their instructional techniques, but it may also raise expectations for student achievement, classroom outcomes, and teaching effectiveness. As a result, these teachers may become more aware of concerns such as students' learning gaps, low achievement, or engagement challenges, leading to a better understanding of their challenges.

Furthermore, higher education frequently stresses reflective teaching and critical thinking, which can help teachers understand student conduct challenges, curriculum design, and assessment procedures. Teachers with lower educational qualifications, on the other hand, may face challenges due to a lack of exposure to research-based strategies or modern instructional tools, affecting their confidence and effectiveness in teaching complex topics such as problem-solving and technology integration in Mathematics.

This correlation shows that having more education may increase awareness of challenges rather than lessen them. The takeaway is that teachers' approaches, evaluations, and reactions to the demands of instruction are influenced by their academic background. Considering this, schools and systems should continue to support and encourage teachers to pursue further education, while ensuring that professional development initiatives address the actual needs of teachers at all academic levels in the classroom. Increasing each teacher's potential and raising the standard of Mathematics instruction can be achieved by customizing support according to their educational backgrounds.

However, despite these influences, educational attainment does not seem decisive in managing all teaching challenges. While often more equipped to tackle complex academic problems, teachers with advanced degrees still encounter difficulties when addressing the practical aspects of teaching, like student behavior and engagement. The findings of Santos and Dela Cruz (2020) suggest that while teachers with higher educational qualifications may be more knowledgeable, they still require ongoing professional development to manage classroom challenges effectively.

The variable trainings/seminars attended in teaching Mathematics showed a significant relationship with challenges in teaching intermediate Mathematics. This means that how teachers view and handle instructional challenges is greatly influenced by professional development. Participating in relevant training enhances teachers' understanding, keeps them informed about current strategies and trends, and provides them with valuable tools to better address challenges in the classroom. Regular or high-quality training can help teachers become more thoughtful and critical of their practices by raising their awareness of the expectations and criteria for good Mathematics instruction. This increased awareness could help better understand problems such as low success rates, students' learning gaps, or difficulties combining technology and problem-solving techniques.

On the other hand, more significant challenges may arise for teachers with limited access to training, as they may employ antiquated techniques, lack confidence, or lack the necessary skills to adapt to changing curriculum demands. The strong association implies that professional development is important to equipping teachers to fulfil the many requirements of students, not just an addition to instruction. This shows the importance of having regular, relevant, and easily accessible training programs that cater to what teachers truly need in teaching Mathematics. Given that well-supported teachers are better equipped to handle the difficulties of teaching intermediate Mathematics, educational leaders and institutions must provide opportunities for consistent and meaningful professional learning.

However, in the study by Sibomana *et al.* (2024), teachers who believe in their ability to teach Mathematics tend to be more effective. This confidence could inspire students to trust their own skills. When students see that their teacher cares about and believes in the subject, they are more likely to engage with and value these topics. Through its Teacher Training Program, the African Institute for Mathematical Science provides Continuous Professional Development, which seeks to assess teachers' confidence in teaching science and Mathematics.

The findings suggest that administrators should consider developing and supporting training on advanced teaching and learning strategies to build teachers' confidence and attitude when instructing Mathematics at early levels. STEM teachers at Technical Secondary Schools should also be provided with such training.

Finally, the variable attitude towards teaching Mathematics showed a significant relationship with challenges in teaching intermediate Mathematics. This means that teachers' attitudes are one of the key factors in overcoming these challenges. Teachers with a positive attitude toward the subject tend to approach student achievement, engagement, and problem-solving obstacles with greater resilience and creativity. This implies that positive attitudes toward teaching Mathematics make teachers more motivated, excited, and open to new approaches. They often set high goals for themselves and their students because of their proactive approach, which can also increase their awareness of issues like low engagement, learning gaps in students, and difficulties when teaching tough topics such as problem-solving. Due to their greater reflection and critical thinking about their teaching methods, they might report more difficulties even if they are competent.

Conversely, teachers with less positive attitudes may be more stressed, less confident, or resistant to change, making it more difficult for them to employ technology, respond to student needs, or adjust to changes in the curriculum. The challenges individuals encounter can be worsened by their assessment of Mathematics instruction

as challenging, which makes assignments seem more daunting than they might be with a more optimistic mindset.

Additionally, attitude is important in influencing instructional actions and decision-making, beyond simple emotional reactions. This shows the importance of creating a welcoming classroom environment that promotes positive attitudes through support, acknowledgement, and opportunities for professional growth. Because a teacher's attitude not only influences their teaching experience but also directly affects student outcomes, schools should aim to increase teachers' confidence and satisfaction in teaching Mathematics. Examples of these efforts include mentorship, collaboration, and access to practical, success-driven strategies.

This aligns with the work of Reyes and Garcia (2021), who found that teachers' mindset plays a pivotal role in how effectively they navigate Mathematics challenges. A positive attitude can be contagious, helping students feel more confident and engaged in the subject and enabling teachers to persist through the obstacles they face in the classroom. Hence, these findings show the importance of considering a range of factors, including age, gender, position, experience, educational level, and attitude, when understanding teachers' challenges in the classroom. Professional development and ongoing support are important in enabling teachers at all stages of their careers to address these challenges and continually enhance their teaching practices.

On the contrary, the variable sex showed a non-significant relationship with challenges in teaching Mathematics based on anxiety in Mathematics. This means that there was no significant relationship between the challenges of anxiety associated with teaching the subject between male and female teachers in this study. According to this finding, respondents' sex did not significantly affect their level of mathematical anxiety, and when faced with teaching complex mathematical concepts or addressing students' difficulties in the subject, male and female teachers may experience comparable emotional and cognitive reactions. It can be inferred from this result that arithmetic anxiety is a challenge that all teachers, regardless of sex, face. It may have less to do with innate gender-based characteristics and more to do with personal experiences, self-assurance, and professional readiness. The findings of this specific study did not show a substantial gender discrepancy, despite some literature suggesting that female teachers, particularly those at lower grade levels, tend to report higher levels of anxiety in Mathematics.

After considering this, the emphasis should shift from gender-based presumptions to providing tailored support networks that address Mathematics fear. Regular confidence-boosting workshops, mentorship programs, and emotionally supportive work environments should be provided by schools so that teachers of all sexes can freely talk about their fears, pick up new techniques, and become more proficient Mathematics teachers. Rather than being only based on demographic characteristics like sex, this supports the notion that adequate support should be inclusive, need-based, and professionally relevant.

According to the study by George and Mitchell (2022), revealed that the prevalence rate was significantly lower among the sample of sixth graders, but higher within the sample of fourth graders. For students in grades fand six, there were slight, non-significant positive and negative relationships found between Mathematics anxiety and Mathematics performance, respectively. Additionally, there was no significant relationship between genders in terms of Mathematics anxiety. Future research directions and practical ramifications are considered, considering these conflicting findings.

Then, the variable highest educational attainment showed a non-significant relationship with challenges in teaching Mathematics based on anxiety in Mathematics. This means that teachers' experiences of Mathematics-related anxiety in the classroom are not significantly related to their degree of formal education, whether bachelor's, master's, or higher. This implies that academic credentials alone do not always eliminate the emotional or psychological discomfort associated with Mathematics, and that even highly qualified teachers may still experience anxiety when teaching the subject. This research suggests that Mathematics anxiety may have more profound personal experiences, past learning history, teaching context, or confidence in pedagogical skills as its fundamental causes, rather than being solely a function of knowledge or educational background. For instance, even after receiving a master's degree in education, a teacher may still experience anxiety when teaching Mathematics subjects if they did not have a solid foundation during their undergraduate studies or feel unprepared to accommodate various learning styles in the classroom.

Further, this understanding is that Mathematics teachers' worries are a complicated and complex problem that formal education might be unable to address independently. Regardless of educational level, it emphasizes the importance of providing targeted, ongoing professional support to enhance Mathematics confidence and instructional techniques. Considering this, schools and other educational establishments should not presume that highly qualified teachers are impervious to Mathematics fear. Since the emotional components of teaching are just as important as material mastery in forming effective instruction, they should instead provide focused treatments to support all teachers, such as workshops on Mathematics pedagogy, peer collaboration, and stress management strategies.

Consequently, according to the study of Wang *et al.* (2024), showed a non-significant relationship between Mathematics anxiety, Mathematics self-efficacy, teacher-student relationships, and students' perceptions of Mathematics teacher support. Notably, it was discovered that Mathematics anxiety was influenced by students' perceptions of Mathematics teacher support, mediated by the effects of Mathematics self-efficacy and the teacher-student relationship.

## CONCLUSION

The following conclusions are hereby drawn for the study: Teachers are challenged in teaching students problem-solving skills that involve critical thinking, creativity, and logical reasoning. Their characteristics may vary in the degree of challenge. Specifically, older teachers and those with longer years of teaching experience can encounter lesser challenges. Age and teaching experience contribute positively to teachers' ability to manage and overcome challenges in teaching Mathematics. Teachers also feel they cannot fully focus on teaching these skills due to time constraints, and they recognize the importance of problem-solving, but often struggle to give enough attention to it. So, effective time management and teaching strategies are necessary to better support students in developing these skills. On the other hand, teachers face challenges in engaging students effectively in the learning process, which includes active participation in both academic and extracurricular activities. Importantly, teachers initiate time management to plan engaging Mathematics lessons, thereby enhancing motivation, interaction, and interest in the subject.

### Recommendations

Based on the results of this study, the following are recommended:

1. Teachers are encouraged to pursue graduate studies to improve teaching competence, confidence, and effectiveness, enhance pedagogical skills, and experience innovative practices, leading to professional growth and improved outcomes.
2. Teachers should provide positive and attractive activities like quick games and pair sharing for students to stay motivated and more interested in the learning process.
3. Teachers should attend all trainings in Mathematics as soon as possible to lessen their challenges in teaching.

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