Teachers' Use of Information and Communications Technology (ICT) and Competence in Teaching Mathematics

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ABSTRACT

This study determined the teachers' use of Information and Communications Technology (ICT) and their competence in teaching Mathematics in the Schools District of Pototan I and II, Schools Division of Iloilo, Philippines for the School Year 2025-2026. The respondents were the 149 Mathematics teachers, of whom 80 were taken from the Schools District of Pototan I, and 69 were taken from the Schools District of Pototan II. They were classified according to their age, sex, educational attainment, number of ICT trainings attended, type of school, and grade level taught. The independent variables were their profiles, while the dependent variables included the use of Information and Communications Technology and teaching competence. The study utilized a descriptive research design. A researcher-made questionnaire on the extent of use of ICT and teaching competence in teaching Mathematics subjected to validation and reliability testing, served as the primary instrument for data gathering. Frequency count, percentage, and mean were used for descriptive analysis, while the T-Test, ANOVA (Analysis of Variance), and Linear Regression Analysis were the statistical tools for inferential analysis. Findings revealed that, taken as a whole, the extent of teachers' use of ICT in teaching Mathematics was "high" and the level of their competence was "very high", based on self-reported ratings. Results of the *t*-test showed no significant differences in the extent of ICT use when teachers were classified according to sex, type of school, and grade level taught. Significant differences were found according to age, number of ICT trainings attended, and educational attainment, the last through one-way ANOVA. No significant differences in competence were found across any of the profile variables. Linear regression showed that the extent of ICT use significantly influenced teaching competence, although the effect was small.

Keywords: use of ICT, teaching competence, influence, mathematics teachers

INTRODUCTION

Background of the Study

The integration of Information and Communications Technology (ICT) has significantly transformed educational systems worldwide by improving instructional delivery, communication, and access to learning resources (Agyei, 2021). ICT includes digital tools such as computers, educational software, online platforms, multimedia presentations, and internet-based applications that support teaching and learning processes (Balaban, 2023). In mathematics education, ICT plays an important role in simplifying abstract concepts, promoting interactive learning, and improving learner engagement through simulations, graphing tools, and virtual activities (Cueva, 2021). As educational institutions continue to adopt digital learning environments, the competence of teachers in utilizing ICT effectively has become increasingly essential. The successful integration of ICT depends not only on the availability of technological resources but also on teachers' pedagogical knowledge, technological skills, and instructional competence in facilitating meaningful learning experiences (Dockendorff, 2023).

Various studies have emphasized the importance of ICT integration in improving teaching and learning out-

comes. International organizations such as UNESCO and OECD continue to encourage schools to adopt digital technologies to strengthen educational quality and accessibility (Galindo-Domínguez, 2023). Research shows that ICT-assisted instruction contributes to improved student motivation, conceptual understanding, collaboration, and academic achievement, particularly in mathematics education where visualization and problem-solving are highly important (Huang, 2023). However, studies also revealed that many teachers experienced challenges in integrating ICT due to limited training, inadequate technological resources, and insufficient technical support (Hasin & Nasir, 2021). These findings highlight the importance of strengthening teachers' ICT competencies to maximize the benefits of technology-assisted instruction.

Teaching competence is recognized as a significant factor that influences the quality of instruction and students' learning outcomes. Competent teachers demonstrate mastery of subject matter, effective classroom management, appropriate teaching strategies, and the ability to utilize instructional resources efficiently (Lavidas, 2022). In the Philippines, the Department of Education emphasized the importance of ICT competence through the Philippine Professional Standards for Teachers (PPST), which identifies the effective use of technology as an essential indicator of teacher quality and professional growth (Yang, 2022). Mathematics teachers are expected to integrate ICT tools to support learner-centered instruction, enhance student engagement, and improve conceptual understanding (Yuan, 2023). Despite government initiatives such as the DepEd Computerization Program and digital learning trainings, differences in teachers' ICT proficiency and instructional practices remain evident across schools (Sailer, 2021).

Although numerous studies have examined ICT integration in education, many of these researches focus primarily on general technology adoption, online learning challenges, or student academic performance (Lars Jenßen, 2023). Limited studies specifically investigate the relationship between mathematics teachers' use of ICT and their teaching competence, particularly within local public school settings (Lazarides, 2023). Furthermore, disparities in technological access, teacher preparedness, institutional support, and professional development opportunities continue to affect the effectiveness of ICT integration in mathematics instruction (Lee Yong Tay, 2021). These gaps indicate the need for further investigation regarding how mathematics teachers utilize ICT and how such utilization relates to their teaching competence.

The present study is therefore conducted to determine the influence of teachers' use of ICT and their competence in teaching Mathematics. Specifically, the study aims to provide evidence regarding the extent of ICT utilization among mathematics teachers and its influence on instructional effectiveness. The findings of this study may benefit educational administrators, school leaders, and policymakers in designing appropriate interventions, professional development programs, and support mechanisms that strengthen ICT integration in mathematics education (Lucas, 2021). Moreover, the study may contribute to enhancing teachers' teaching competence and support the improvement of quality mathematics education, aligned with the goals of educational modernization and digital transformation in the Philippines (Mensah, 2023).

Statement of the Problem

This study aimed to determine the teachers' use of Information and Communications Technology (ICT) and their competence in teaching Mathematics in the Schools District of Pototan I and II, Schools Division of Iloilo, Philippines for the School Year 2025-2026.

Specifically, this study sought to answer the following questions:

1. What is the profile of Mathematics teachers in terms of age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

2. What is the extent of teachers' use of ICT in teaching Mathematics when taken as a whole and when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

3. What is the level of teachers' competence in teaching Mathematics when taken as a whole and when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

4. Are there significant differences in the extent of teachers' use of ICT in teaching Mathematics when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

5. Are there significant differences in the level of teachers' competence in teaching Mathematics when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

6. Does the extent of teachers' use of ICT significantly influence their competence in teaching Mathematics?

Hypotheses

1. There are no significant differences in the extent of teachers' use of ICT in teaching Mathematics in the Schools District of Pototan I and II when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

2. There are no significant differences in the level of teachers' competence in teaching Mathematics in the Schools District of Pototan I and II when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

3. The extent of use of ICT of teachers in the Schools District of Pototan I and II does not significantly influence their competence in teaching Mathematics.

Theoretical Framework

This study was anchored on the Unified Theory of Acceptance and Use of Technology (UTAUT). It was developed by Viswanath Venkatesh, Michael G. Morris, Gordon B. Davis, and Fred D. Davis in 2003 through the synthesis of eight prominent models of technology acceptance, including the Technology Acceptance Model (TAM), the Theory of Planned Behavior (TPB), and the Diffusion of Innovations Theory. The theory was formulated to provide a unified explanation of why individuals accept, adopt, and eventually use technology within organizational and institutional settings. UTAUT recognizes that the actual use of technology is determined not by availability alone but by a combination of individual perceptions, social influences, and supporting conditions. This theory emerged in response to the increasing need to understand the human and contextual factors that shape technology adoption in workplaces, including schools and other educational institutions.

The UTAUT framework identifies four core determinants of technology acceptance and use, namely performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy refers to the degree to which an individual believes that using a particular technology will enhance job performance, while effort expectancy pertains to the perceived ease of using the technology. Social influence involves the extent to which an individual perceives those significant others, such as colleagues, supervisors, and administrators, believe the technology should be used. Facilitating conditions refer to the availability of organizational and technical support, including infrastructure, resources, and training, that enable technology use. The theory further posits that these determinants are moderated by individual characteristics such as age, gender, experience, and the voluntariness of use, which explain variations in technology adoption across user groups.

The UTAUT Theory is relevant to the present study because it explains the relationship between mathematics teachers' use of ICT and their teaching competence. Mathematics instruction requires teachers to present abstract concepts, facilitate problem-solving activities, and encourage analytical thinking among learners, tasks that are increasingly supported by digital tools. Through the UTAUT framework, teachers' extent of ICT use

may be understood as an outcome of their perceived usefulness of technology in improving instruction, their confidence in using digital tools, the encouragement they receive from their institution, and the availability of training and technical support. The theory's moderating variables, particularly age and experience, likewise provide a basis for examining why ICT utilization differs among teachers of varying profiles. This theory therefore supports the idea that teachers who accept and consistently use technology are more likely to demonstrate greater teaching competence, and it provides a framework for assessing how ICT utilization contributes to instructional effectiveness in mathematics education.

This study was also anchored to the Diffusion of Innovations Theory. It was introduced by Everett M. Rogers in 1962 to explain how innovations, technologies, and new ideas spread within a social system over time. Rogers defined diffusion as the process through which an innovation is communicated among members of a social group through specific channels over a period of time. The theory became widely influential in fields such as education, communication, sociology, public health, and organizational management because it explains how individuals adopt or reject innovations. In educational contexts, the theory has been extensively applied to understand teachers' adoption of instructional technologies, digital learning tools, and innovative teaching practices.

According to Rogers, the diffusion process involves five stages, namely knowledge, persuasion, decision, implementation, and confirmation. In the knowledge stage, individuals become aware of an innovation and gain understanding about its functions. During persuasion, individuals form positive or negative attitudes toward the innovation. The decision stage involves the choice to adopt or reject the innovation, while implementation refers to the actual use of the innovation. Confirmation occurs when individuals seek reinforcement regarding their decision to continue using the innovation. The theory also identifies five adopter categories: innovators, early adopters, early majority, late majority, and laggards. Furthermore, Rogers identified factors influencing adoption, including relative advantage, compatibility, complexity, trialability, and observability. These factors determine how quickly and effectively innovations are accepted within organizations or communities.

The Diffusion of Innovations Theory fits the present study because it explains how mathematics teachers adopt and utilize ICT in their instructional practices. The integration of ICT in mathematics education can be considered an educational innovation that requires acceptance, adaptation, and continuous utilization among teachers. Some teachers may readily adopt technological tools and digital instructional strategies, while others may experience resistance or difficulties due to limited skills, inadequate resources, or lack of institutional support. This theory helps explain variations in ICT utilization among mathematics teachers and how such utilization may influence their teaching competence. It also supports the study's investigation of factors related to ICT adoption and the challenges encountered by teachers in integrating technology into mathematics instruction.

This study was also anchored to Constructivist Learning Theory. It was primarily associated with the works of Jean Piaget and Lev Vygotsky, who emphasized that learning is an active process in which individuals construct knowledge based on their experiences and interactions with the environment. Piaget focused on cognitive constructivism, which highlights how learners develop understanding through assimilation and accommodation of new information into existing cognitive structures. Vygotsky, on the other hand, introduced social constructivism, emphasizing the importance of social interaction, collaboration, and cultural influences in the learning process. Constructivist Theory emerged as a reaction against traditional teacher-centered instruction that viewed learners as passive recipients of information. Instead, the theory advocates learner-centered approaches where students actively engage in exploration, problem-solving, and collaborative activities to develop meaningful understanding.

Constructivist Learning Theory emphasizes several key principles in the teaching-learning process. First, learning is considered an active and constructive process rather than passive memorization of information. Second, learners build knowledge based on prior experiences and understanding. Third, social interaction and collaboration play important roles in cognitive development. Fourth, teachers function as facilitators who guide learners in discovering concepts and solving problems independently. In constructivist classrooms, instructional strategies often include inquiry-based learning, collaborative tasks, experiential activities,

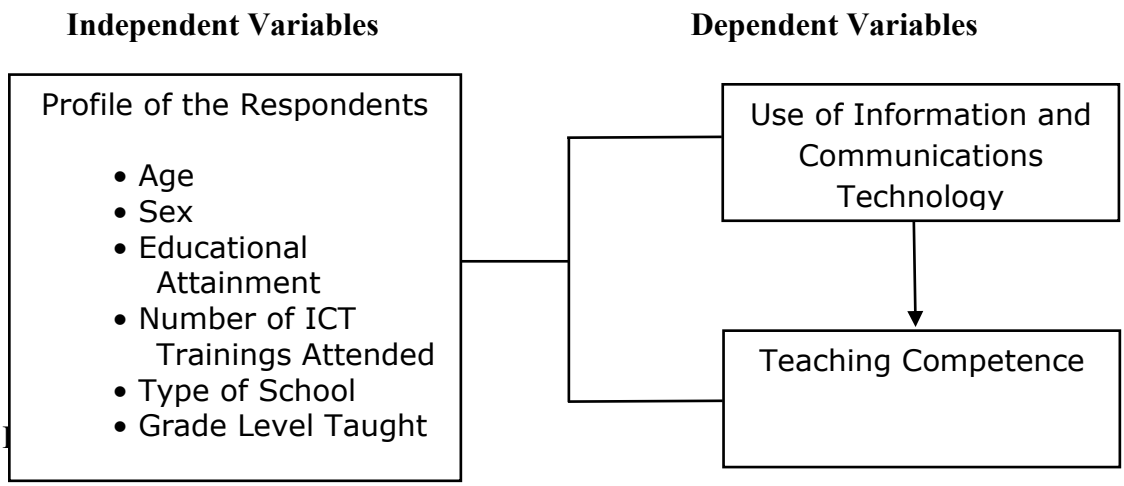
reflective thinking, and the use of real-world applications. With the advancement of technology, ICT tools have become important resources in supporting constructivist learning environments by providing interactive simulations, multimedia presentations, online collaboration platforms, and problem-solving applications that encourage active learner participation.

The Constructivist Learning Theory is relevant to this study because ICT integration in mathematics education supports learner-centered and interactive instructional approaches. Mathematics teachers who effectively utilize ICT can create engaging learning environments where students actively explore mathematical concepts through visualizations, simulations, and collaborative activities. The theory supports the idea that teaching competence involves the ability to facilitate meaningful learning experiences rather than merely transmitting information. Through ICT integration, mathematics teachers can promote critical thinking, problem-solving, and active participation among learners, which are essential components of effective mathematics instruction. This theory therefore provides a strong foundation for understanding how ICT utilization contributes to improved teaching competence and enhanced learning experiences in mathematics education.

Conceptual Framework

This study was conducted to determine the extent of teachers' use of ICT and competence in teaching Mathematics in the Schools District of Pototan I and II for School Year 2025-2026. The independent variables were the respondents' profile, including age, sex, educational attainment, number of ICT trainings attended, type of school, and grade level taught. The dependent variables were the use of ICT and teaching competence. The interrelationship among these variables is shown in the paradigm above.

Research Paradigm



When classified according to age, younger teachers tend to be more comfortable using digital tools than older teachers. When classified according to sex, both male and female teachers are equally capable of integrating technology into their Mathematics lessons. In terms of educational attainment, teachers with master's and doctoral degrees are expected to have more exposure to digital teaching tools than teachers with bachelor's degrees.

When classified according to the number of ICT trainings attended, Mathematics teachers who have attended four or more ICT trainings are expected to demonstrate greater readiness to adopt technological innovations in classroom instruction. In terms of type of school, Mathematics teachers in big schools may demonstrate a higher extent of technology adoption than those in small schools because of differences in technological resources, internet access, and institutional support. When classified according to grade level taught, Mathematics teachers in Primary level may rely more on concrete materials and physical learning activities, while teachers in Intermediate level may use more digital resources to support classroom instruction.

When classified according to age, older teachers are expected to be more competent in teaching Mathematics than younger teachers because they have more teaching experience. When classified according to sex, male and female teachers are expected to be equally competent in teaching Mathematics. In terms of educational attainment, teachers with doctoral degrees may possess more advanced knowledge of instructional strategies, educational research, and assessment practices than those with bachelor's and master's degrees. When classified according to the number of ICT trainings attended, teachers who have attended one to three ICT trainings may have fewer opportunities to develop technology-supported teaching strategies than those who have attended four or more trainings. When classified according to type of school, Mathematics teachers in both big and small schools can demonstrate high teaching competence, although their teaching experiences, available resources, and classroom challenges may differ. When classified according to grade level taught, Mathematics teachers handling the Intermediate level may be more experienced in teaching advanced mathematical topics, while teachers handling the Primary level may be more skilled in developing basic numeracy.

Significance of the Study

The findings of this study are deemed beneficial to the following:

Department of Education – The findings of this study may help the Department of Education evaluate the effectiveness of existing ICT-related policies, programs, and training initiatives implemented in schools. The results may provide evidence regarding the extent of ICT utilization among mathematics teachers and its relationship to teaching competence, which can guide the formulation of more responsive educational policies and interventions. This study may also assist DepEd in strengthening professional development programs focused on digital literacy, instructional technology, and innovative mathematics teaching strategies. Moreover, the study may support the agency's goals of improving educational quality and promoting technology-integrated learning environments aligned with 21st-century education.

School Heads – School heads may benefit from this study by gaining a clearer understanding of the ICT utilization practices and teaching competence of mathematics teachers within their institutions. The findings may help administrators identify the strengths and areas for improvement among teachers regarding technology integration in mathematics instruction. This study may also serve as a basis for planning school-based training programs, capacity-building activities, and resource allocation related to ICT implementation. Furthermore, school heads may use the results to strengthen instructional supervision and support systems that encourage effective technology integration and improved teaching performance.

Teachers – Mathematics teachers may benefit from this study through increased awareness of the importance of ICT integration in enhancing teaching competence and instructional effectiveness. The findings may encourage teachers to improve their technological knowledge, pedagogical practices, and ability to utilize digital tools in facilitating meaningful mathematics learning experiences. This study provides regional baseline data on the extent of ICT use and the level of teaching competence of elementary Mathematics teachers in the Schools Districts of Pototan I and II.

Learners – Learners may benefit from this study because effective ICT integration in mathematics instruction can contribute to more engaging, interactive, and meaningful learning experiences. Through the improved teaching competence of mathematics teachers, students may develop better understanding of mathematical concepts, enhanced problem-solving skills, and increased motivation to learn mathematics. The use of ICT tools such as multimedia presentations, simulations, and interactive applications may help learners visualize abstract mathematical ideas more effectively. Furthermore, this study may indirectly contribute to improved academic performance and the development of learners' digital literacy and critical thinking skills.

Community – The community may benefit from this study because quality mathematics education contributes significantly to the development of productive, competent, and technologically literate individuals. Effective ICT integration in schools may help prepare learners to become more competitive and adaptable in a rapidly changing digital society. The findings of this study may encourage stronger collaboration among schools, local government units, and community stakeholders in supporting educational technology initiatives and improving

access to ICT resources. Additionally, the study may promote greater community awareness regarding the importance of technology-enhanced education in achieving educational and societal development.

Researcher – This study may provide the researcher with valuable knowledge, experiences, and a deeper understanding regarding ICT integration and teaching competence in mathematics education. Conducting the study may enhance the researcher's research skills, critical thinking abilities, and competence in educational investigation and data analysis. The findings may also help the researcher gain insights into the challenges and opportunities associated with technology integration in mathematics instruction. Furthermore, the study may contribute to the researcher's professional growth and future involvement in educational improvement initiatives and research activities.

Future Researchers – Future researchers may benefit from this study as it may serve as a useful reference and source of information for related studies concerning ICT integration, mathematics education, and teaching competence. The findings may provide relevant literature, data, and insights that can support further investigations on similar educational concerns. This study may also encourage future researchers to explore other variables related to ICT utilization, instructional effectiveness, and learner outcomes in different educational settings. Moreover, the study may contribute to the expansion of existing knowledge and the continuous improvement of research related to educational technology and teaching practices.

Definition of Terms

For clarity and understanding, the following key terms are given their conceptual and operational meanings:

Information and Communications Technology (ICT) – Information and Communications Technology refers to digital technologies and electronic systems used for accessing, processing, storing, sharing, and communicating information. It includes computers, internet services, software applications, multimedia tools, and communication platforms.

In this study, ICT pertains to the digital tools, technological resources, and online platforms utilized by mathematics teachers in instructional preparation, lesson delivery, assessment, communication, and professional development.

Teaching Competence – Teaching competence refers to the knowledge, skills, attitudes, and abilities demonstrated by teachers in effectively facilitating learning and achieving educational objectives. It encompasses pedagogical skills, classroom management, instructional planning, assessment practices, and professional behavior.

In this study, teaching competence pertains to the capability of mathematics teachers to perform their instructional duties effectively.

Use of ICT – Use of ICT refers to the application and integration of technological tools and digital resources in performing educational and instructional tasks. It involves utilizing technology to facilitate communication, teaching, learning, and information management.

In this study, use of ICT pertains to the extent to which mathematics teachers utilize technological tools and digital platforms in instructional preparation, classroom teaching, assessment, communication, and professional development activities.

Scope and Limitations of the study

This study was conducted to determine the extent of teachers' use of ICT and their competence in teaching Mathematics in the Schools District of Pototan I and II, Schools Division of Iloilo, for School Year 2025-2026. This descriptive research utilized the elementary Mathematics teachers who were randomly selected from the District of Pototan I and II, and were classified by age, sex, educational attainment, number of ICT trainings attended, type of school, and grade level taught. The dependent variables were the use of ICT and teaching competence of Mathematics teachers. The data-gathering instrument was researcher -made based on theories

and literature. It was subjected to validation and reliability testing and was found reliable. The data in this study came from a self-administered questionnaire, so they represent teachers' perceptions of their own ICT use and teaching competence, not objectively verified practice. Self-reports can be influenced by social desirability and the tendency to rate oneself favorably, especially on topics that touch on professional competence. The findings should therefore be read as self-assessed levels and not as confirmed measures of classroom performance. The statistical tools included frequency, percent, and mean for descriptive data, and t-test, Analysis of variance (ANOVA) or F-test, and Linear Regression Analysis for inferential data. All data were processed and analyzed using the Statistical Package for the Social Sciences (SPSS). The level of significance was set at .05.

REVIEW OF RELATED LITERATURE AND STUDIES

This chapter presents all the reviewed literature and studies related to the direction of this study. All the information and studies presented here strengthen and solidify the existence, urgency, and relevance of the problem being investigated by the researcher.

Conceptual literature

Information and Communications Technology (ICT) in Mathematics Education

Information and Communications Technology (ICT) has become an essential component of modern education due to its capacity to improve instructional delivery, enhance learner engagement, and promote access to educational resources (Agyei, 2021). Studies show that the integration of ICT in education has transformed traditional teaching methods into more interactive, learner-centered, and collaborative approaches (Al-Rahmi, 2021). In mathematics education, ICT is widely utilized to simplify complex concepts, strengthen analytical thinking, and facilitate problem-solving activities through the use of digital tools and multimedia resources (Atika Qazi, 2021). Research shows that technologies such as computers, projectors, graphing applications, educational software, virtual simulations, and online learning platforms have contributed significantly to improving the teaching and learning process in mathematics (Balaban, 2023). Authors reveal that ICT enables both teachers and learners to access diverse instructional materials that support conceptual understanding and active participation in classroom activities. Research shows that mathematics is often perceived as one of the most difficult subjects among learners because of its abstract concepts, formulas, and analytical requirements (Borba, 2023). Studies agree that ICT integration can help address these difficulties by presenting mathematical ideas in visual, interactive, and engaging forms (Bhutoria, 2022). Through multimedia presentations, dynamic graphing tools, and virtual manipulatives, learners are able to visualize mathematical relationships and processes more effectively (Cueva, 2021). Studies further reveal that ICT supports differentiated instruction by allowing teachers to adjust learning activities according to students' needs, abilities, and learning styles.

Studies show that that technology-assisted learning environments motivate students to participate more actively in mathematics lessons because instructional materials become more interesting and accessible (Galindo-Dominguez, 2023). Studies further indicate that ICT promotes inquiry-based and exploratory learning by enabling students to experiment with mathematical concepts using simulations and interactive exercises. As a result, learners become more engaged in constructing their own understanding of mathematical ideas rather than relying solely on passive memorization of procedures and formulas (Gasaymeh & Al-Rsa'i, 2021). Authors reveal that teachers play a critical role in the successful integration of ICT in mathematics education (Gonzalo Almerich, 2021). The effectiveness of technology integration largely depends on teachers' competence, preparedness, and willingness to incorporate digital tools into instructional practices. Studies show that teachers who possess adequate technological knowledge and pedagogical skills are more capable of maximizing ICT resources to support meaningful learning experiences (Graham, 2021). Research also reveals that effective ICT integration requires teachers to carefully select appropriate technologies that align with instructional objectives, learners' needs, and curriculum standards. Teachers are expected not only to understand how technology functions but also to determine how it can be used effectively to improve mathematics instruction and learner achievement (Guillén-Gámez, 2021).

Studies agree that professional development and training programs are essential in strengthening teachers' ICT competencies (Gómez-Fernández, 2022). Research shows that many educators encounter challenges in integrating technology into mathematics instruction due to limited training, insufficient technical support, and lack of confidence in using digital tools (Hasin & Nasir, 2021). Authors reveal that continuous capacity-building activities, seminars, workshops, and online training programs help teachers improve their technological skills and instructional strategies (Huang, 2023). Educational institutions therefore continue to promote teacher training initiatives that enhance digital literacy and encourage innovative teaching practices in mathematics education. Research shows that despite the benefits of ICT integration, several challenges continue to affect its implementation in mathematics education (Joshi, 2023). Studies reveal that inadequate technological infrastructure, unstable internet connectivity, limited access to devices, and insufficient funding remain major concerns in many schools, particularly in developing countries. Authors reveal that some teachers also experience difficulties in adapting to rapidly changing technologies and integrating digital resources effectively into classroom instruction (João C. Silva, 2023). Studies further indicate that resistance to change, lack of institutional support, and increased workload may influence teachers' willingness to adopt ICT in mathematics teaching. These challenges highlight the need for stronger educational policies, improved infrastructure, and sustained support systems that facilitate effective ICT integration in schools (Lars Jenßen, 2023).

Studies show that the COVID-19 pandemic significantly accelerated the use of ICT in education, including mathematics instruction. During the pandemic, schools worldwide shifted from traditional face-to-face classes to online and distance learning modalities, making ICT an essential tool for educational continuity (Lavidas, 2022). Research reveals that mathematics teachers utilized various digital platforms, learning management systems, video conferencing applications, and online assessment tools to continue delivering instruction despite physical restrictions (Lazarides, 2023). Studies agree that the pandemic exposed both the strengths and weaknesses of educational systems in terms of technological readiness and digital competence (Lee Yong Tay, 2021). While some teachers successfully adapted to technology-assisted instruction, others encountered difficulties related to limited ICT skills, lack of resources, and inadequate internet access. The experience emphasized the importance of strengthening ICT integration and teacher preparedness in mathematics education (Liu, 2022). Authors reveal that the continued advancement of technology will further influence the future of mathematics education (Lucas, 2021). Studies show that emerging technologies such as artificial intelligence, virtual reality, augmented reality, and adaptive learning systems have the potential to enhance mathematics instruction and personalize learning experiences. Research indicates that educational systems are increasingly recognizing the importance of integrating technology to develop learners' 21st-century skills, including critical thinking, collaboration, creativity, and digital literacy (McGarr, 2021). Studies further reveal that ICT integration contributes not only to improved mathematics achievement but also to the overall development of innovative and technologically competent learners (Mensah, 2023). As educational institutions continue to modernize instructional practices, the role of ICT in mathematics education remains highly significant in promoting effective teaching, meaningful learning experiences, and improved educational outcomes (Mohammadi, 2021).

Teachers' Use of ICT in Teaching Mathematics

Mathematics teachers' use of Information and Communications Technology (ICT) in teaching has become increasingly significant in modern education as schools adapt to digital learning environments (Moodley, 2021). Studies show that teachers are now expected to integrate technology into instructional processes to improve the delivery of mathematical concepts and enhance student engagement (Mustafa Cevikbas, 2023). Research reveals that ICT provides mathematics teachers with a wide range of instructional tools such as presentation software, graphing applications, virtual manipulatives, and online learning platforms that support clearer and more interactive teaching (Osés, 2022). Authors reveal that the use of ICT in mathematics instruction is not simply an additional teaching aid but a core component of effective pedagogy in the 21st-century classroom. Studies agree that mathematics teachers use ICT primarily to enhance instructional preparation and lesson delivery (Pant & Shrestha, 2022). Research shows that teachers utilize digital resources to design lesson plans, create presentations, and develop instructional materials that simplify complex mathematical concepts. ICT tools also allow teachers to organize content more systematically and access updated educational resources that support curriculum implementation. In addition, studies show that teachers

often rely on ICT to align instructional activities with learning competencies and to ensure that lessons are more engaging and learner-centered (Potari, 2023).

Research shows that ICT is widely used by mathematics teachers during classroom instruction and delivery to improve interaction and learner participation (Rodríguez-Jiménez, 2023). Studies reveal that digital tools such as interactive whiteboards, learning management systems, and educational videos help teachers present lessons in a more dynamic and engaging manner (Rodríguez-Jiménez, 2023). Authors indicate that ICT enables teachers to demonstrate mathematical processes step-by-step, allowing students to better understand problem-solving procedures and conceptual relationships (Rodríguez-Muñiz, 2021). Studies also agree that the use of multimedia resources increases students' attention and motivation during mathematics lessons. As a result, ICT-supported instruction promotes a more active and participatory learning environment compared to traditional teaching approaches. Studies show that mathematics teachers also use ICT for assessment and evaluation purposes to improve the accuracy and efficiency of measuring student learning outcomes (Sailer, 2021). Research reveals that digital assessment tools, online quizzes, and automated grading systems help teachers evaluate student performance more effectively and provide immediate feedback (Skantz-Åberg, 2022). Authors reveal that ICT-based assessment allows for easier tracking of student progress and identification of learning gaps that need intervention. Studies agree that the use of technology in assessment enhances transparency, reduces manual workload, and improves the consistency of grading practices (Viberg, 2021). Consequently, ICT plays a vital role in strengthening the assessment practices of mathematics teachers (Yang, 2022).

Research shows that ICT is also utilized by mathematics teachers for communication and collaboration within and outside the school environment (Yuan, 2023). Studies reveal that teachers use digital platforms such as email, messaging applications, learning management systems, and online forums to communicate with students, parents, and colleagues. Authors indicate that these tools facilitate faster dissemination of information, submission of academic requirements, and coordination of instructional activities (Agyei, 2021). Studies agree that ICT enhances collaboration among teachers through the sharing of instructional materials, best practices, and professional insights (Al-Rahmi, 2021). This improved communication system contributes to more organized and responsive teaching and learning processes. Studies show that mathematics teachers use ICT as part of their professional development and continuous learning activities. Research reveals that many educators participate in online trainings, webinars, and digital courses to improve their technological and pedagogical skills (Atika Qazi, 2021). Authors reveal that ICT provides access to a wide range of professional learning resources such as research articles, instructional videos, and teaching guides that support teachers' growth. Studies agree that teachers who actively engage in ICT-based professional development tend to demonstrate higher levels of instructional competence and confidence in integrating technology into their teaching practices (Balaban, 2023). This continuous learning process contributes to the improvement of teaching quality in mathematics education (Bhutoria, 2022).

Research shows that despite the benefits of ICT integration, mathematics teachers still face several challenges in its effective use. Studies reveal that common issues include limited access to technological resources, unstable internet connectivity, insufficient training, and lack of technical support (Borba, 2023). Authors indicate that some teachers also experience difficulty in adapting to rapidly changing technologies and integrating them effectively into lesson delivery. Studies agree that these challenges may hinder the full utilization of ICT in mathematics instruction and affect teaching effectiveness (Cueva, 2021). As a result, teachers often require continuous support and capacity-building programs to enhance their ICT competence and instructional performance. Research reveals that teachers who effectively integrate ICT tend to create more engaging, interactive, and student-centered learning environments (Dockendorff, 2023). Authors indicate that ICT enhances teachers' ability to explain complex mathematical concepts, assess student understanding, and provide meaningful learning experiences. Overall, ICT serves as a powerful tool that supports mathematics teachers in delivering high-quality education and preparing learners for a technology-driven world (Galindo-Dominguez, 2023).

Teaching Competence in Teaching Mathematics

Teaching competence of mathematics teachers is widely recognized as a critical factor in ensuring effective

instruction and improved learner achievement in mathematics education (Gasaymeh & Al-Rsa'i, 2021). Studies show that teaching competence refers to the combination of knowledge, skills, attitudes, and professional behaviors that enable teachers to facilitate meaningful learning experiences (Gonzalo Almerich, 2021). Research reveals that in mathematics education, teaching competence goes beyond content mastery and includes the ability to apply appropriate pedagogical strategies, manage classrooms effectively, and assess student learning accurately (Graham, 2021). Authors reveal that competent mathematics teachers are those who can translate complex mathematical concepts into understandable forms that suit learners' cognitive levels. As educational systems evolve, teaching competence has become increasingly associated with the ability to integrate innovative approaches, including the use of Information and Communications Technology (ICT) (Guillén-Gámez, 2021). Studies agree that content knowledge and pedagogical knowledge are fundamental components of teaching competence among mathematics teachers. Research shows that teachers who possess strong content knowledge are more capable of explaining mathematical concepts clearly, identifying learner misconceptions, and guiding students toward correct solutions (Gómez-Fernández, 2022). Authors reveal that pedagogical competence involves selecting appropriate teaching strategies such as inquiry-based learning, problem-solving approaches, and collaborative learning techniques. Studies indicate that the integration of both content and pedagogy enables teachers to design effective lessons that promote understanding and retention of mathematical concepts (Hasin & Nasir, 2021). Consequently, mathematics teachers' competence is often evaluated based on their ability to balance subject mastery with effective instructional delivery (Huang, 2023).

Research shows that classroom management and learning environment are essential indicators of teaching competence in mathematics education. Authors indicate that competent teachers establish clear classroom rules, manage time effectively, and create positive learning atmospheres that encourage student engagement (Joshi, 2023). Studies agree that a well-managed classroom enhances students' focus, reduces disruptive behavior, and improves learning outcomes in mathematics. Furthermore, research shows that teachers who demonstrate strong classroom management skills are more successful in implementing interactive and technology-based instructional strategies (João C. Silva, 2023). Authors reveal that competent mathematics teachers adapt their teaching strategies to accommodate these differences by using varied instructional materials and methods. Studies agree that ICT plays an important role in supporting differentiated instruction by providing visual aids, simulations, and interactive activities that cater to diverse learning needs (Lavidas, 2022). As a result, teaching competence is closely linked to a teacher's ability to ensure inclusive and equitable learning opportunities for all students (Lazarides, 2023).

Research shows that assessment and feedback practices are key components of teaching competence among mathematics teachers (Lee Yong Tay, 2021). Studies reveal that effective teachers use both formative and summative assessment strategies to monitor student progress and evaluate learning outcomes (Liu, 2022). Authors indicate that competent teachers provide timely, constructive, and meaningful feedback that helps learners improve their performance. Studies agree that ICT-based assessment tools enhance teachers' ability to track student performance efficiently and provide immediate feedback (Lucas, 2021). Consequently, teaching competence is reflected in how well teachers use assessment results to improve instruction and support student learning in mathematics (McGarr, 2021). Studies show that professional engagement and continuous development are essential aspects of teaching competence. Research reveals that competent mathematics teachers actively participate in professional development activities such as seminars, workshops, training programs, and learning communities (Mensah, 2023). Authors indicate that continuous learning helps teachers update their knowledge, improve their instructional strategies, and adapt to educational innovations. Studies agree that teachers who engage in lifelong learning demonstrate higher levels of competence and adaptability in the classroom (Mohammadi, 2021). Moreover, research shows that ICT has become a valuable tool for professional development by providing access to online courses, educational resources, and global teaching communities (Moodley, 2021).

Research shows that ICT integration is increasingly considered a dimension of teaching competence in modern education. Studies reveal that competent mathematics teachers are expected to effectively use digital tools to enhance instructional delivery, student engagement, and learning assessment (Mustafa Cevikbas, 2023). Authors indicate that ICT competence includes the ability to select appropriate technologies, integrate them into lesson plans, and use them to support curriculum objectives (Osés, 2022). Studies agree that teachers who

are proficient in ICT are better equipped to create interactive and student-centered learning environments. Therefore, ICT integration is now viewed as an essential component of teaching competence in mathematics education. Research reveals that competent teachers are able to foster critical thinking, problem-solving skills, and conceptual understanding among learners (Pant & Shrestha, 2022).

Related Studies

Foreign Studies

Baytar et al. (2023) assessed the sense of competence in ICT use of 260 secondary school teachers in Rhamna, Morocco, through a quantitative survey. Only 26.1% of the teachers reported feeling effectively competent. Their sense of competence was significantly related to continuous training, learning readiness, gender, age, teaching experience, and school subject, and the pandemic changed teachers' views on the importance of ICT integration and training. The study is similar to the present one in examining how teacher profile and training relate to ICT competence.

Zamir and Ali (2023) explored prospective teachers' perceptions of, reliance on, and barriers to ICT integration in learning mathematics through a qualitative case study using interviews and focus group discussions. The prospective teachers held positive perceptions of ICT integration, and their reasons for relying on technology varied. Challenges included scanning online material, encoding mathematical language, and limited awareness of mathematics application software, which led the authors to recommend hands-on programs for prospective teachers.

Njiku et al. (2022) surveyed 125 mathematics teachers in Dar es Salaam, Tanzania, to determine their level of technology integration self-efficacy and the background variables that influence it. Using t-tests, effect sizes, and one-way ANOVA, they found a moderate level of self-efficacy and showed that gender and teacher training in technology integration, both in college and through professional development, were important in influencing self-efficacy. The study relates to the present work through its focus on mathematics teachers and on training as a factor in technology use.

Brunetto and Iacono (2023) surveyed 40 Italian high school mathematics teachers who were taking part in a professional development program on mathematical modelling with digital technology. Analyzing the entry questionnaire through the TPACK model, they found that the teachers were familiar with digital tools but lacking in certain pedagogically relevant aspects of their use, and that a common belief among them was that knowledge of digital technologies is sufficient to teach mathematics with them.

Yang (2022) examined the impact of mathematics teachers' professional competence on instructional quality and on students' mathematics learning outcomes. The study treats teacher competence as a key determinant of effective mathematics instruction and therefore supports the use of teaching competence as the outcome variable in the present study.

Liu (2022) investigated the impact of teachers' competence in online teaching on perceived online learning outcomes during the COVID-19 outbreak, using a moderated-mediation model in which teacher resilience and age were included. The study is related to the present work because it connects teachers' competence in teaching with technology to learning outcomes and considers teacher characteristics such as age.

Huang (2023) studied coaching as a way of preparing mathematics teachers for technology integration in differentiated classrooms. The study treats coaching as a means of building teachers' capacity to integrate technology, which is consistent with the emphasis on ICT trainings in the present study.

Mensah (2023) assessed the effect of ICT usage on the academic performance of high school students in a developing country. Although the focus is on students, the study is relevant because it treats the extent of ICT use as something that can be linked to learning, which makes teachers' ICT use an important concern for schools in developing contexts.

Dockendorff (2024) reviewed the literature on how future mathematics teachers are successfully prepared for digital technology integration. The review is relevant to the present work because it concerns how teacher

preparation relates to the integration of digital technology in mathematics teaching, which parallels the attention given to ICT trainings in this study.

Galindo-Domínguez (2024) examined the relationship between teachers' digital competence and their attitudes toward artificial intelligence in education. The study is related to the present work because it treats teachers' digital competence and attitudes toward new technology as connected factors in how technology enters teaching.

Local Studies

Manaban et al. (2025) assessed the ICT competence of 165 elementary mathematics teachers in the Schools Division of Bais City and the barriers that hinder ICT integration, using a descriptive-correlational design. Competence was high in technology operations and concepts (M = 3.43) and in social and ethical practices (M = 3.45), but moderate in pedagogy (M = 3.26) and the professional domain (M = 3.06). Poor internet connectivity and limited access to resources were the significant barriers. Teachers aged 25 to 34 and those who had attended four or more ICT trainings showed significantly higher competence, while sex and years of experience made no significant difference. The study is closely related to the present work in its respondents, its focus on trainings and age, and its use of ICT competence as a variable.

Gamit (2023) studied ICT integration in the teaching of mathematics among elementary school teachers in Cabanatuan City, using a descriptive-correlational approach in which teachers' responses were grouped according to their profile. The study was set against the DepEd Computerization Program and was intended to inform an initial ICT implementation plan for mathematics in elementary public schools. It is related to the present study because it examines mathematics teachers' ICT use in public schools according to teacher profile.

Pastor and Pedro (2023) determined the relationship among secondary mathematics teachers' level of ICT expertise, level of ICT use, and students' problem-solving skills. The respondents were 40 Grade 7 mathematics teachers and 2,439 Grade 7 students from three school divisions in Ilocos Norte. Teachers were highly competent in basic ICT skills and held positive beliefs about ICT, but used it once or twice a week because preparing ICT-enriched instruction takes more time. Younger teachers and those with more ICT-related training had better ICT skills and used ICT more often, and students' problem-solving skills were significantly related to teachers' ICT expertise, use, and beliefs.

Acopio (2025) examined the relationship between technological proficiency and online resource utilization among 31 mathematics instructors in higher education institutions in Tacloban City using a descriptive-correlational design. The results showed a significant positive association, though not a causal one, between overall technological proficiency and online resource use. Eleven participants reported no prior professional development in digital pedagogy, yet most instructors reported moderate to high self-efficacy in using online resources. The author stressed the need for ongoing professional development and institutional support in resource-constrained settings.

Alieto et al. (2024) conducted a quantitative analysis of attitude, technological competence, and access among teachers across subject disciplines in the context of teaching inside a digital classroom. The study is related to the present work because it examines teachers' technological competence together with their attitude and access to technology.

Ayunar et al. (2024) examined the factors influencing the ICT competency of 1,275 public school teachers in Bukidnon using the DigCompEdu questionnaire. Higher educational attainment was linked to higher ICT proficiency, while more years of teaching experience correlated negatively with it. Gender and time spent using technology had minimal impact on overall digital literacy. The authors concluded that schools must provide teachers with the support and training they need to integrate ICT.

Wong et al. (2025) examined the digital competence of 296 public elementary school teachers in the Romblon District using a descriptive-correlational design. Digital natives, those born after 1980, showed higher digital competence than digital immigrants. Teachers who reported greater access to training, technology resources,

and peer collaboration had stronger digital skills, and a positive attitude toward ICT integration was linked to higher competence. The study supports the inclusion of age and training as variables in studies of teachers' technology use.

Cortez (2025) evaluated the digital competence of 85 secondary school teachers in one district of a large Division in Central Philippines for School Year 2022-2023. Teachers demonstrated a moderate level of digital competence in content knowledge and pedagogy, curriculum and planning, and assessment and reporting. Length of service produced significant differences across all domains, while age and the number of ICT trainings attended did not. The author concluded that teaching experience, more than age or exposure to ICT training, was related to teachers' digital proficiency.

Bedeo (2023) assessed the ICT integration practices of secondary mathematics teachers in a national high school in a thesis at Capiz State University Pontevedra Campus. The findings indicated a moderate level of integration, with common ICT skills mostly used in the classroom. The study concluded that ICT adoption contributed to teachers' enhanced understanding and recommended that mathematics teachers explore technological instructional materials, online applications, and educational software. Being conducted in Western Visayas, it is close to the setting of the present study.

Basa (2024) explored the technological, pedagogical, and content knowledge of 159 pre-service elementary teachers at Capiz State University using a causal-comparative design. The pre-service teachers demonstrated overall proficiency in TPACK, with no significant differences across year levels. The study recommended continued skill development, supplemental TPACK training, and more TPACK research in the Philippines.

Relevance of Related Literature and Studies Cited

The reviewed literature and related studies on Information and Communications Technology (ICT) in mathematics education consistently emphasize the growing importance of technology in enhancing teaching and learning processes. Studies show that ICT has transformed traditional instructional approaches by promoting interactive, visual, and learner-centered environments that support deeper understanding of mathematical concepts. Research reveals that mathematics teachers increasingly rely on digital tools and resources to improve lesson delivery, facilitate problem-solving, and engage learners in meaningful learning experiences. Across various studies, authors reveal a common agreement that ICT is no longer optional but an essential component of modern mathematics instruction.

Regarding teaching competence, reviewed literature consistently shows that effective mathematics teachers possess strong content knowledge, pedagogical skills, classroom management abilities, and assessment competence. Studies show that teaching competence is further enhanced when teachers integrate ICT into their instructional practices. Research reveals that ICT supports teachers in delivering clearer explanations, managing classrooms more effectively, and assessing learners more efficiently. Authors indicate that competent teachers are those who can adapt instructional strategies to meet learners' diverse needs while incorporating appropriate technological tools. This suggests that teaching competence in modern education is increasingly linked with the ability to effectively utilize ICT in instruction.

The reviewed literature and studies show that Information and Communications Technology ICT has become an integral part of mathematics instruction and that digital capability is now treated as part of what makes a mathematics teacher competent (Istenič et al., 2023; Samantray et al., 2024; Yang, 2022). This supports the study's decision to examine teachers' use of ICT as a variable that may influence their competence in teaching mathematics.

Both foreign and local studies reported that teachers' ICT use and competence differ according to personal and professional characteristics such as age, training, educational attainment, experience, and school level (Ayunar et al., 2024; Baytar et al., 2023; Cortez, 2025; Fitrah et al., 2024; Manaban et al., 2025; Njiku et al., 2022; Pastor & Pedro, 2023). These findings justify selecting age, sex, educational attainment, number of ICT training sessions attended, type of school, and grade level taught as the profile variables of the present study, and they provide points of comparison for its results.

The reviewed studies point to a gap that the present study addresses. Most studies examined ICT competence, ICT integration, or barriers to ICT use among teachers in general, or focused on pre-service teachers, and relatively few examined whether the extent of mathematics teachers' ICT use influences their competence in teaching mathematics. By answering this question for the Mathematics teachers of the Schools District of Pototan I and II, the study adds local evidence to the literature and offers a basis for ICT-related training, school support, and policy decisions in the Schools Division of Iloilo.

RESEARCH METHODOLOGY

This chapter presents the research design, respondents of the study, reliability testing, validity of the instrument, data gathering instrument, data gathering procedure and statistical tools which were used.

Research Design

This study employed descriptive research design in order to determine the extent of teachers' use of ICT and level of competence in teaching Mathematics in the Schools District of Pototan I and II, Schools Division of Iloilo for School Year 2025-2026.

Descriptive research design aims to describe the characteristics of a population or phenomenon as they naturally exist, without manipulating any variable. As explained by Creswell and Creswell (2018), a survey-based design provides a quantitative description of the trends, attitudes, or opinions of a population by studying a sample drawn from it, and it may also be used to test associations among variables.

Respondents of the Study

From the population of 237, 149 was computed as the sample size. In the Schools District of Pototan I, there were 123 Mathematics teachers; 80 were randomly selected as respondents. In the Schools District of Pototan II, there were 114 Mathematics teachers; 69 were randomly selected as respondents.

Table 1. Distribution of Respondents

Schools	n	%
Schools District of Pototan I	80	53.69%
Schools District of Pototan II	69	46.31%
Total	149	100.00%

Data Gathering Instrument

The instrument used to gather data was a researcher-made questionnaire. The questionnaire was composed of 3 parts. Part I was on the profile of the Mathematics teachers, including the respondent's name (optional), age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught. Part II was on the extent of teacher's use of ICT in teaching Mathematics in which the respondents used the following descriptive rating: Always (5), Often (4), Sometimes (3), Seldom (2) and Never (1). Part III was on the level of teachers' competence in teaching Mathematics in which the respondents used the following descriptive rating: Strongly Agree (5), Agree (4), Undecided (3), Disagree (2) and Strongly Disagree (1).

The mean scores obtained from the respondents on the extent of teachers' use of ICT and their competence in teaching Mathematics in the Schools District of Pototan II were described using the scale shown below:

Scale of Means	Description	Interpretation
4.21 – 5.00	Very High	The mathematics teachers consistently and extensively integrate technological tools, digital resources, and digital platforms into their educational and instructional tasks.
3.42 – 4.20	High	The mathematics teachers frequently integrate technological tools, digital

		resources, and digital platforms into their educational and instructional tasks.
2.61 – 3.40	Moderate	The mathematics teachers sometimes integrate technological tools, digital resources, and digital platforms into their instructional tasks.
1.81 – 2.60	Low	The mathematics teachers seldom integrate technological tools, digital resources, and digital platforms into their instructional tasks.
1.00 – 1.80	Very Low	The mathematics teachers rarely integrate technological tools, digital resources, and digital platforms into their instructional tasks.

Scale of Means	Description of Teaching Competence	Interpretation
4.21 – 5.00	Very High	The mathematics teachers demonstrate excellent knowledge, skills, attitudes, and abilities needed to perform their teaching duties effectively.
3.42 – 4.20	High	The mathematics teachers possess the knowledge, skills, attitudes, and abilities needed to carry out their teaching duties effectively.
2.61 – 3.40	Moderate	The mathematics teachers demonstrate fair amount of the knowledge, skills, attitudes, and abilities needed to perform their teaching duties. They can prepare lessons, explain mathematics
1.81 – 2.60	Low	The mathematics teachers demonstrate limited knowledge, skills, attitudes, and abilities needed to perform their teaching duties effectively
1.00 – 1.80	Very Low	The mathematics teachers demonstrate considerable limitations in the knowledge, skills, attitudes, and abilities required to carry out their teaching duties effectively.

Validity of the Instrument

The improved questionnaire was submitted to the panel of research experts and English critics for validation. This was done in order to check whether the questions are appropriate, clear, reasonable, typical and sufficiently inclusive. The Good and Scates criteria for validating the questionnaire was used for validation. To finally make sure that the questionnaire is valid, suggestions and comments from the validators were incorporated before producing the final copy.

Reliability Testing of the Instrument

The reliability of the research instrument was established through a pilot test administered to thirty (30) Mathematics teachers who were part of the population but were not included in the final respondents. The data gathered were subjected to reliability analysis using Cronbach's Alpha in Special package for Social Sciences (SPSS).

Results showed that the questionnaire measuring the extent of teachers' use of ICT, composed of 15 items, obtained a Cronbach's Alpha coefficient of 0.917, while the questionnaire measuring teachers' level of competence in teaching Mathematics, likewise composed of 15 items, obtained a coefficient of 0.920. Both values fall within the "excellent" range of internal consistency, as coefficients above 0.90 are generally interpreted as indicating a very high degree of reliability among the items in a scale. This means that the items in each part of the questionnaire were highly consistent with one another in measuring the construct they were intended to measure. With these results, the research instrument was deemed reliable and appropriate for use in gathering data for the actual conduct of the study.

Data Gathering Procedure

The instrument used to gather data was a researcher-made questionnaire. Permits from the Schools Division Superintendent, District Supervisors and School Heads were obtained to allow the researcher to conduct the

study. The researcher personally went to the different schools, passing through the different school offices for protocol. The total number of Mathematics teachers from the official list of the Office of the Public Schools District Supervisors of District of Pototan I and II represents the total number of the respondents.

The researcher personally distributed the questionnaires to the actual respondents then gave them ample time to answer. While the respondents were answering the questionnaire, the researcher went to neighboring schools to administer the same questionnaire. After distributing to all targeted schools as expected, gathering of instruments was done immediately in the afternoon. The same procedure was observed in other schools in the Schools District of Pototan I and II until all the targeted respondents were able to accomplish the questionnaire.

After retrieval of the accomplished questionnaire, the data were organized, computed and tabulated. Other computations, analyses and interpretations were done using the computer with the Statistical Package for Social Sciences (SPSS) software.

Statistical Tools

Gathered data were tabulated, organized, analyzed and packaged employing the Special Package for Social Sciences (SPSS). All tests were set at the .05 level of significance. The data were computed and processed using the following statistical tools:

Frequency Count. Frequency count was used to determine the actual count of Mathematics teachers in the Schools District of Pototan I and II.

Mean. The mean was used to describe the extent of teachers' use of ICT and their level of competence in teaching Mathematics in the Schools District of Pototan I and II.

T-test for independent samples. This was used to determine differences in the extent of ICT use and in competence when teachers were grouped by age, sex, number of ICT trainings attended, type of school, and grade level taught.

One-way Analysis of Variance (ANOVA). This was followed by post hoc comparisons and was used for educational attainment, which had three categories.

Linear regression. This was used to determine whether the extent of ICT use significantly influenced teaching competence. All tests were set at the .05 level of significance and processed using SPSS.

Chapter 4

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter presents, analyzes and interprets the data to determine the extent of teachers' use of ICT and their level of competence in teaching Mathematics in the Schools District of Pototan I and II for School Year 2025-2026.

Profile of the Mathematics Teachers

To determine the profile of Mathematics teachers in terms of age, sex, educational attainment, number of ICT training attended, type of school and grade level taught, the researcher used the frequency count and percentage to analyze the data.

Table 2 shows the profile of Mathematics teachers in terms of age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught using frequency count and percentages.

As to age, the result of the study showed that 48 of the respondents (32.2%) were young while 101 of them (67.8 %) were old. As to sex, 24 of the respondents (16.1 %) were male and 125 of them (83.9 %) were fe-

male. As to education attainment, 113 teachers (75.84 %) were bachelor's degree, 34 of them (22.82 %) were master's degree and 2 of them (01.34%) had doctorate degree. As to the number of ICT trainings attended, 117 teachers (78.5 %) have 1-3 trainings while 32 of them (21.5 %) have 4 or more trainings. As to the type of school, 66 of the respondents (44.3 %) came from big schools while 83 of them (55.7 %) came from small schools. In terms of the grade level taught, 89 teachers (59.7 %) were teaching primary level (Kindergarten to Grade 3) and 60 of them (40.3 %) were teaching intermediate level (Grade 4-6).

Table 2. Profile of Mathematics Teachers in Terms of Age, Sex, Educational Attainment, Number of ICT Trainings Attended, Type of School and Grade Level Taught

Variables	Frequency	Percent
Age		
Young	48	32.2
Old	101	67.8
Total	**149**	**100**
Sex		
Male	24	16.3
Female	125	83.9
Total	**149**	**100**
Educational Attainment		
Bachelor's	113	75.84
Master's	34	22.82
Doctorate	2	1.34
Total	**149**	**100**
Number of ICT Trainings Attended		
1-3	117	78.5
4 or more	32	21.5
Total	**149**	**100**
Type of School		
Big	66	44.3
Small	83	55.7
Total	**149**	**100**
Grade Level Taught		
Primary	89	59.7
Intermediate	60	40.3
Total	**149**	**100**

Extent of Teachers' Use of ICT in Teaching Mathematics when Taken as a Whole and When Classified According to Age, Sex, Educational Attainment, Number of ICT Trainings Attended, Type of School and Grade Level Taught

To determine the overall extent of teachers' use of ICT in teaching Mathematics in the Schools Districts of Pototan I and II, the mean score was used to interpret the results.

As shown in Table 3, the overall result revealed a weighted mean of 3.98, which is described as "High." This means that Mathematics teachers in Schools District of Pototan I and II frequently integrate technological tools, digital resources, and digital platforms into their educational and instructional tasks. The finding suggests that technology has become an important part of how teachers prepare lessons, access learning resources, manage classroom responsibilities, and support student learning.

The result also shows that teachers in both districts have generally accepted and integrated ICT into their teaching practices. While the level of ICT use may vary depending on the specific task, teachers are making good use of technology to enhance their work and improve the learning experience of their students. This finding supports the study of Dela Fuente and Biñas (2020), which found that Filipino teachers generally demonstrate a high level of ICT competence and frequently use technology as a tool for teaching and learning.

When the individual indicators were examined, the highest-rated items were "prepare grades using Excel" (M = 4.70, Very High) and "use ICT to document and prepare reports" (M = 4.60, Very High). This shows that teachers are most comfortable using technology for everyday school tasks such as recording grades and preparing reports. Since these responsibilities are part of their regular work, teachers naturally use ICT more often in these areas. This finding supports Onoshakpokaiye (2022), who noted that teachers frequently use technology for administrative duties because these tasks are required and regularly performed.

Teachers also reported a very high extent of ICT use in browsing the internet to prepare lessons and finding teaching resources (both M = 4.32). This suggests that technology has become an important tool in helping teachers plan lessons, look for information, and gather materials that can improve classroom instruction. As emphasized by SEAMEO (2023), these skills are essential for effective ICT integration in Mathematics teaching.

In contrast, the lowest-rated indicator was "let students share downloaded materials in class" (M = 3.30, Moderate). This indicates that while teachers often use technology themselves, students are given fewer opportunities to actively use and share digital resources during classroom activities. Similar findings were reported by López Pérez et al. (2022) and Cabellos et al. (2023), who observed that technology use in many classrooms remains largely teacher-led. In other words, ICT is commonly used by teachers to prepare and deliver lessons, but students are not always actively involved in using technology as part of their learning. This is important because studies have shown that students tend to learn more effectively when they are actively engaged with ICT tools rather than simply observing their teachers use them.

Table 3. Extent of ICT Usage of Mathematics Teachers when Taken as a Whole

Extent of ICT Usage		Mean	Description
1	As a teacher, I browse/search the internet to collect information to prepare my lessons.	4.32	Very High
2	browse/search the internet to collect resources to be used during lessons.	4.32	Very High
3	Use applications (like word processing packages, Spreadsheets, graphical applications, etc.) to prepare presentations for my lessons.	3.77	High
4	download/upload/browse material from a learning platform.	4.21	Very High
5	Use ICT to provide feedback and/or assess students' learning.	3.71	High
6	Use video to supplement teaching.	3.92	High
7	Use PowerPoint to supplement lectures.	3.64	High
8	communicate online with parents.	4.2	High
9	Let students share downloaded materials in class.	3.3	Moderate
10	Use ICT as a platform for teaching.	3.82	High
11	Use slide show presentation to supplement other teaching strategies.	3.6	High
12	Prepare grades using Excel.	4.7	Very High
13	Use ICT to document and prepare reports.	4.6	Very High
14	Use emails to communicate with others.	3.69	High
15	Look for online professional development opportunities.	3.91	High
Total		**3.98**	High

Mean Scale: 4.21 – 5.00 (Very High); 3.41 – 4.20 (High); 2.61– 3.40 (Moderate); 1.81 – 2.60 (Low); 1.00 – 1.80 (Very Low)

To determine the extent of teachers' use of ICT in teaching Mathematics in the Schools District of Pototan I and II when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught, the researcher used the mean in interpreting the results.

Table 4 shows that teachers generally make good use of ICT regardless of their age, sex, educational attainment, number of ICT trainings attended, type of school, and grade level taught. All groups obtained ratings within the **High** to **Very High** categories, indicating that technology has become an important part of their teaching and daily school responsibilities. However, some groups were found to use ICT more frequently than others.

In terms of age, younger teachers (M=4.16) obtained a slightly higher score than older teachers (M= 3.89). The mean scores were both described as "High". This suggests that younger teachers may be more comfortable using technology because they have grown up in an environment where digital tools, gadgets, and the internet are already part of everyday life. Although older teachers also reported a high level of ICT use, they may have had fewer opportunities to use technology during their early years of teaching.

When grouped according to sex, male (M=4.01) and female (M=3.97) teachers obtained almost identical scores and were described as "High". This indicates that both groups use technology to a similar extent and that ICT use is not influenced by whether a teacher is male or female. Both groups appear to recognize the value of technology in supporting teaching and learning.

In terms of educational attainment, teachers with Doctorate degree (M=4.67) which was described as "Very High". This suggests that they consistently and extensively integrate technological tools, digital resources, and digital platforms into their educational and instructional tasks. The result also shows that the extent of use of ICT by Mathematics teachers with a Master's degree (M=4.16) and a Bachelor's degree (M=3.92) was both described as "High". This implies that they frequently integrate technological tools, digital resources, and digital platforms into their educational and instructional tasks. This may be because teachers who pursue advanced studies are exposed to more research, digital resources, and innovative teaching practices, which encourage them to make greater use of technology in their classrooms.

In terms of the number of ICT training attended, teachers who had attended four or more ICT trainings (M= 4.27, "Very High") reported higher ICT use than those who attended only one to three trainings (M= 3.90, "High"). This suggests that training plays an important role in helping teachers develop the confidence and skills needed to use technology effectively. The more teachers are exposed to ICT-related learning opportunities, the more likely they are to integrate technology into their teaching practices.

Teachers from big schools (M= 4.07, "High") also showed slightly higher ICT use than those from small schools (M=3.91, "High"). This may be due to greater access to computers, internet connectivity, and other technological resources commonly available in larger schools. Meanwhile, teachers handling primary and intermediate grade levels obtained very similar scores, indicating that ICT is used consistently across grade levels.

Table 4. Extent of Teachers' Use of ICT in Teaching Mathematics when Classified According to Age, Sex, Educational Attainment, Number of ICT Trainings Attended, Type of School and Grade Level Taught

Variables	Mean	Description
Age		
Young	4.16	High
Old	3.89	High
Sex		
Male	4.01	High
Female	3.97	High
Educational Attainment		
Bachelor's	3.92	High

Master's	4.16	High
Doctorate	4.67	Very High
Number of ICT Trainings Attended		
1-3	3.9	High
4 or more	4.27	Very High
Type of School		
Big	4.07	High
Small	3.91	High
Grade Level Taught		
Primary	4	High
Intermediate	3.95	High

Mean Scale: 4.21 – 5.00 (Very High); 3.41 – 4.20 (High); 2.61– 3.40 (Moderate); 1.81 – 2.60 (Low); 1.00 – 1.80 (Very Low)

Level of Teachers' Competence in Teaching Mathematics when taken as a Whole and when Classified According to Age, Sex, Educational Attainment, Number of ICT Trainings Attended, Type of School and Grade Level Taught

To determine the level of teachers' competence in teaching Mathematics when taken as a whole, the researcher used the mean score to analyze and interpret the results.

As shown in Table 5, the overall teaching competence of Mathematics teachers in the Schools Districts of Pototan I and II received a mean score of **4.49**, which is described as "**Very High"**. This means that, overall, the teachers demonstrate excellent knowledge, skills, attitudes, and abilities needed to perform their teaching duties effectively. The results show that they consistently demonstrate strong skills in preparing lessons, explaining mathematics concepts clearly, managing classroom activities, assessing learners' understanding and performance, and showing professional behavior.

Among the indicators, the highest-rated item was **"show fairness in dealing with students"** (M = 4.73). This indicates that teachers treat their students equally and fairly regardless of their abilities or backgrounds. Other highly rated items included **"have willingness to accept criticisms and mistakes"** (M = 4.66) and **"explain assignments clearly and completely"** (M = 4.59). These findings suggest that teachers are approachable, open to feedback, and able to communicate instructions clearly, which helps students understand their lessons and classroom tasks better.

Table 5. Level of Teachers' Competence in Teaching Mathematics when Taken as a Whole

Level of Teaching Competence		**Mean**	**Description**
1	As a teacher, I present subject matter clearly and systematically.	4.48	Very High
2	Use varied ways/approaches in teaching.	4.4	Very High
3	Show fairness in dealing with students.	4.73	Very High
4	Adjust my methods of instruction to students' learning abilities.	4.58	Very High
5	Relate subject matter to other fields or current situations.	4.48	Very High
6	Create an interesting situation to stimulate learning.	4.5	Very High
7	Attend to the needs of students.	4.57	Very High
8	Interpret abstract ideas and theories clearly and support with examples, comparisons, and facts.	4.32	Very High
9	Explain the assignment clearly and completely.	4.59	Very High
10	Present motivating activities before introducing the new lessons.	4.51	Very High
11	Encourage students to think critically.	4.45	Very High
12	Ask challenging questions.	4.29	Very High

13	Explain clearly the grading system used.	4.47	Very High
14	Made myself available beyond official time for students' consultation.	4.39	Very High
15	Have a willingness to accept criticisms and mistakes.	4.66	Very High
Total		**4.49**	**Very High**

Mean Scale: 4.21 – 5.00 (Very High); 3.41 – 4.20 (High); 2.61– 3.40 (Moderate); 1.81 – 2.60 (Low); 1.00 – 1.80 (Very Low)

On the other hand, the lowest-rated indicators were **"ask challenging questions"** (M = 4.29) and **"interpret abstract ideas and theories clearly and support them with examples, comparisons, and facts"** (M = 4.32). Although these ratings are still considered **Very Highly Competent**, they suggest that teachers may need more support in helping students think more deeply and in explaining difficult Mathematics concepts in ways that are easier to understand. These areas require students to analyze, solve problems, and apply higher-level thinking skills.

Although the overall competence mean was very high, item-level results varied. The highest-rated indicator was "show fairness in dealing with students" (M = 4.73), while the lowest were "ask challenging questions" (M = 4.29) and "interpret abstract ideas and theories clearly and support them with examples, comparisons, and facts" (M = 4.32). The lowest items, though still in the Very High range, concern higher-order questioning and conceptual explanation, which are central to Mathematics teaching. The overall mean therefore hides differences that can guide school heads in choosing priorities for training.

To find out the level of teachers' competence in teaching Mathematics when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught, the researcher used mean in interpreting the results.

Table 6 revealed that Mathematics teachers in the Schools Districts of Pototan I and II possess "high" teaching competence regardless of their age, sex, educational attainment, number of ICT trainings attended, type of school, or grade level taught. All groups obtained mean that fall within the **"very high" teaching competence**, indicating that teachers have the excellent knowledge, skills, attitudes, and abilities needed to perform their teaching duties effectively. They consistently demonstrate strong skills in preparing lessons, explaining mathematics concepts clearly, managing classroom activities, assessing learners' understanding and performance, and showing professional behavior.

When grouped according to age, older teachers (M=4.51, "Very High") scored slightly higher than young teachers (M=4.46, "Very High"). In terms of sex, male (M=4.54, "Very High") and female (M=4.49, "Very High") teachers obtained almost the same ratings. Teachers with doctoral degree (M=4.80) recorded the highest mean score, but teachers with bachelor's (M=4.48) and master's (M=4.53) degrees also achieved "very high" ratings. Likewise, teachers who attended 1-3 ICT trainings (M=4.50) performed just as well as those who attended 4 or more trainings (M=4.46). Teachers from both big (M=4.51) and small (M=4.48) schools, as well as those teaching primary (M=4.444) and intermediate (M=4.58) grade levels, also showed very similar levels of teaching competence. This indicates that they are highly capable of handling their teaching responsibilities and helping learners achieve the expected learning goals regardless of their profile.

Regardless of their background, the teachers in the study demonstrate the ability to manage classes effectively, communicate lessons clearly, and support student learning.

Table 6. Level of Teachers' Competence in Teaching Mathematics when Classified According to Age, Sex, Educational Attainment, Number of ICT Trainings Attended, Type of School and Grade Level Taught

Variables	Mean	Description
Age		
Young	4.46	Very High
Old	4.51	Very High
Sex		

Male	4.54	Very High
Female	4.49	Very High
Educational Attainment		
Bachelor's	4.48	Very High
Master's	4.53	Very High
Doctorate	4.8	Very High
Number of ICT Trainings Attended		
1-3	4.5	Very High
4 or more	4.46	Very High
Type of School		
Big	4.51	Very High
Small	4.48	Very High
Grade Level Taught		
Primary	4.44	Very High
Intermediate	4.58	Very High

Mean Scale: 4.21 – 5.00 (Very High); 3.41 – 4.20 (High); 2.61– 3.40 (Moderate); 1.81 – 2.60 (Low); 1.00 – 1.80 (Very Low)

Significant Differences in the Extent of ICT Usage of Mathematics Teachers when Classified According to Age, Sex, Number of ICT Trainings Attended, Type of School and Grade Level Taught

To find out whether there were significant differences in the extent of teachers' use of ICT in the Schools District of Pototan I and II based on their age, sex, number of ICT trainings attended, type of school, and grade level taught, the researcher used the T-Test to analyze and interpret the data.

Table 7 presents no significant differences in the extent of use of ICT among Mathematics teachers in Schools District of Pototan I and II when classified according to sex (T=-0.280, *p*=.780), type of school (T=1.628, *p*=.106), and grade level taught (T=0.571, *p*=.569). Therefore, the null hypothesis that there are no significant differences in the extent of teachers' use of ICT in teaching Mathematics in the Schools District of Pototan I and II when classified according to sex, type of school and grade level taught was accepted**.** Male and female teachers reported almost the same level of ICT use, meaning that both are equally capable of integrating technology into their teaching. Likewise, teachers from big and small schools used ICT at similar extent, indicating that school size does not determine the extent of teachers' use of ICT. When classified according to grade level taught, teachers handling primary and intermediate grades are fairly consistent regardless of the age of the learners they teach.

The findings revealed that there is a significant difference in the extent of teachers' use of ICT in teaching mathematics when classified according to age (T=2.726, *p*=.007), and number of ICT trainings attended (T=-3.287, *p*=.001). Therefore, the null hypothesis that there are no significant differences in the extent of teachers' use of ICT in teaching Mathematics in the Schools District of Pototan I and II when classified according to age, and number of ICT trainings attended is rejected.

In terms of age, young teachers reported using ICT more often than old teachers. This suggests that young teachers may be more comfortable working with technology because they grew up using computers, mobile devices, and the internet. As a result, incorporating technology into lesson preparation, classroom activities, and school tasks may come more naturally to them. Although old teachers also showed a high level of ICT use, the findings indicate that young teachers tend to use technology more frequently in their teaching practices.

When grouped according to the number of ICT trainings, teachers who participated in four or more ICT trainings reported higher levels of ICT use compared to those who attended only one to three trainings. This

shows that training opportunities can make a real difference in helping teachers become more confident and skilled in using technology. The more teachers are exposed to ICT-related seminars, workshops, and professional development activities, the more likely they are to apply what they learned in their classrooms.

Table 7. Significant Differences in the Extent of Teachers' Use of ICT in Teaching Mathematics when Classified According to Age, Sex, Number of ICT Trainings Attended, Type of School and Grade Level Taught

Variables	Mean	T	df	*p*-value	Remarks
Age					
Young	4.16				
Old	3.89	2.726	147	.007*	Significant
Sex					
Male	4.01				Not Significant
Female	3.97	-0.28	147	0.78	
Number of ICT Trainings Attended					
1-3	3.9				
4 or more	4.27	-3.287	147	.001*	Significant
Type of School					
Big	4.07				Not Significant
Small	3.91	1.628	147	0.106	
Grade Level Taught					
Primary	4				Not Significant
Intermediate	3.95	0.571	147	0.569	

*$p<0.05$

Significant Difference in the Extent of Teachers' Use of ICT in Teaching Mathematics when Classified According to Educational Attainment

To determine whether teachers' educational attainment affects their use of ICT in teaching Mathematics, the researcher used Analysis of Variance (ANOVA) to analyze and interpret the results.

Table 8 presents the significant difference in the extent of teachers' use of ICT in teaching Mathematics when classified according to educational attainment. The results showed that there is a significant difference in the extent of teachers' use of ICT in teaching Mathematics when classified according to educational attainment (F=3.839, p=.024). Therefore, the null hypothesis that there are no significant differences in the extent of teachers' use of ICT in teaching Mathematics when classified according to educational attainment was rejected. This means that the differences in the extent of use of ICT were related to their level of educational attainment.

The post hoc results revealed that teachers teaching mathematics with doctorate degree had significantly higher extent of use of ICT than those teachers with bachelor's degree (MD=.81475, p=.007) and those teachers with master's degree (MD=.59020, p=.003). There is no significant difference found between teachers teaching mathematics with bachelor's degree and master's degree (MD=.22455, p=.090). These findings indicate that teachers with the highest educational attainment use ICT in their teaching more frequently than those teachers with lower educational attainment.

Table 8. Significant Difference in the Extent of Teachers' Use of ICT in Teaching Mathematics when Classified According to Educational Attainment

	Sum of Squares	df	Mean Square	F	Sig.	Remarks
Between Groups	2.466	2	1.233	3.839	0.024	Significant
Within Groups	46.897	146	0.321			
Total	49.363	148				

The findings suggest that continuing professional and academic growth can help teachers strengthen their technology skills. As teachers pursue higher education, they are often introduced to new teaching strategies, digital resources, and learning technologies that can make their lessons more effective and engaging.

Significant Differences in the Level of Teachers' Competence in Teaching Mathematics when Classified According to Age, Sex, Number of ICT Trainings Attended, Type of School and Grade Level Taught

To find out whether teachers' competence in teaching Mathematics differs based on their age, sex, number of ICT trainings attended, type of school, and grade level taught, the researcher used the t-test to analyze the results.

Table 9. Significant Differences in the Level of Teachers' Competence in Teaching Mathematics when Classified According to Age, Sex, Number of ICT Trainings Attended, Type of School and Grade Level Taught

Variables	Mean	t-value	df	*p*-value	Remarks
Age					
Young	4.46	-0.621	147	.536	Not Significant
Old	4.51				
Sex					
Male	4.54	-0.458	147	.648	Not Significant
Female	4.49				
Number of ICT Trainings Attended					
1-3	4.50	0.376	147	.708	Not Significant
4 or more	4.46				
Type of School					
Big	4.51	0.365	147	.715	Not Significant
Small	4.48				
Grade Level Taught					
Primary	4.44	-1.740	147	.084	Not Significant
Intermediate	4.58				

*$p<0.05$

Table 9 revealed that there were no significant differences in the level of teachers' competence in teaching Mathematics in the Schools District of Pototan I and II when classified according to age (T=-0.621, p=.536), sex (T=-0.458, p=.648), number of ICT trainings attended (T=0.376, p=.708), type of school (T=-0.365, p=.715) and grade level taught (T=-1.740, p=.084). Therefore, the null hypothesis which states that there are no significant differences in the level of teachers' competence in teaching Mathematics when classified according to age, sex, number of ICT trainings attended, type of school and grade level taught was accepted. This means that teachers are performing equally well in teaching Mathematics regardless of their background.

Significant Difference in the Level of Teachers' Competence in Teaching Mathematics when Classified According to Educational Attainment

To determine whether teachers with different educational attainment differ in their level of competence in

teaching Mathematics, the researcher used Analysis of Variance (ANOVA) to analyze and interpret the results.

Table 10 presents the significant difference in the level of teachers' competence in teaching Mathematics when classified according to educational attainment. The results showed that there is no significant difference in the level of teachers' competence in teaching Mathematics when classified according to educational attainment (F=.457, *p*=.634). Therefore, the null hypothesis that there are no significant differences in the level of teachers' competence in teaching Mathematics when classified according to educational attainment was accepted. This means teachers are found to be equally competent in teaching Mathematics regardless of the degree they have earned.

Interestingly, this finding differs from the results on ICT use, where teachers with higher educational attainment tended to use technology more often. This suggests that although advanced studies may encourage teachers to use more digital tools and resources, they do not necessarily lead to higher teaching competence. Teaching competence appears to be developed through daily classroom experiences, continuous learning, and regular interaction with students rather than through academic degrees alone.

Table 10. Significant Difference in the Level of Teachers' Competence in Teaching Mathematics when Classified According to Educational Attainment

	Sum of Squares	df	Mean Square	F	Sig.	Remarks
Between Groups	0.242	2	.121	.457	.634	Not Significant
Within Groups	38.710	146	.265			
Total	38.953	148				

Significant Influence of the Extent of Teachers' Use of ICT into the Level of Their Competence in Teaching Mathematics

To find out whether the use of ICT (Information and Communication Technology) influenced teachers' competence in teaching Mathematics in Schools District of Pototan I and II, the researcher used linear regression, a statistical tool that checks if one factor can influence another.

Table 11 shows the significant influence of the teachers' extent of use of ICT into their level of competence in teaching Mathematics. It was shown that the computed **p-value of .007** is lower than the accepted level of **.05**. This means that teachers' extent of use of ICT has a significant influence on their competence in teaching Mathematics. Therefore, the null hypothesis which states that the extent of use of ICT of teachers in the Schools District of Pototan I and II does not significantly influence their competence in teaching Mathematics was rejected. This means that teachers who use ICT more often tend to be more competent in teaching Mathematics.

However, the R value of .221 and R^2 of .049 show that the influence is weak, since the extent of teachers' use of ICT explains only about 4.9 % of the variation in their teaching competence. This suggests that ICT is a useful but not the only factor in teachers' competence, and that teaching experience, professional training, classroom management skills, and subject mastery also matter.

These findings support the studies of Huang (2023) and Viberg (2021)**,** which found that technology can help improve teaching practices when used effectively. However, technology alone is not enough to make a teacher highly competent. Continuous learning, experience, and professional support remain important in developing effective Mathematics teachers.

Table 11. Significant Influence of the Extent of Teachers' use of ICT into the Level of Competence in Teaching Mathematics

Regression Weights	**Beta Coefficient**	**R**	**R^2**	**F**	**t-value**	**p-value**
Use of ICT to Teaching Competence	0.197	.221[a]	0.049	7.583	2.754	0.007

*$p<0.05$

Overall, the findings suggest that the use of ICT is a useful tool that can help improve teaching competence, but it should be combined with other professional development opportunities to achieve better teaching outcomes.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary, conclusions and recommendations of the study to determine if the extent of teachers' use of ICT significantly influence their competence in teaching Mathematics teachers in the District of Pototan I and II, Schools Division of Iloilo for School Year 2025-2026.

Specifically, this study sought to answer the following questions:

1. What is the profile of Mathematics teachers in terms of age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

2. What is the extent of teachers' use of ICT in teaching Mathematics when taken as a whole and when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

3. What is the level of teachers' competence in teaching Mathematics when taken as a whole and when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

4. Are there significant differences in the extent of teachers' use of ICT in teaching Mathematics when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

5. Are there significant differences in the level of teachers' competence in teaching Mathematics when classified according to age, sex, educational attainment, number of ICT trainings attended, type of school and grade level taught?

6. Does the extent of teachers' use of ICT significantly influence their competence in teaching Mathematics?

FINDINGS OF THE STUDY

1. The majority of Mathematics teachers in the Schools Districts of Pototan I and II were older (67.8%), female (83.9%), and a bachelor's degree holder (75.8%). Most of the teachers had attended only one to three ICT trainings (78.5%), were assigned in small schools (55.7%), and were teaching at the primary (Kindergarten – Grade 3) level (59.7%).
2. Mathematics teachers often used ICT in teaching, as reflected by the overall mean score of **3.98**, interpreted as "**High"**. When grouped according to their profile, young teachers (M = 4.16), male teachers (M = 4.01), and teachers from big schools (M = 4.07) obtained slightly higher mean score, although all groups possessed "High" extent of use of ICT. Notably, teachers with doctorate degrees (M = 4.67) and those who attended four or more ICT trainings (M = 4.27) reached the "Very High" extent of use of ICT.
3. Teachers have "**Very High" level of competence** in teaching Mathematics with an overall mean score of **4.49**. These mean scores remained consistent across all profile groups, ranging from **4.44 to 4.80**.
4. There were no significant differences in the extent of ICT use according to sex (T = −0.280, p = .780), type of school (T = 1.628, p = .106), and grade level taught (T = 0.571, p = .569). Significant differences were found according to age (T = 2.726, p = .007) and number of ICT trainings attended (T = −3.287, p = .001). The ANOVA for educational attainment was also significant (p = .045), with post hoc tests showing that teachers with doctorate degrees used ICT significantly more than those with bachelor's degrees (MD = .815, p = .007) and master's degrees (MD = .590, p = .003).

5. There were no significant differences in teachers' competence when classified according to age ($T = -0.621$, $p = .536$), sex ($T = -0.458$, $p = .648$), number of ICT trainings attended ($T = 0.376$, $p = .708$), type of school ($p = .715$), grade level taught ($p = .084$), and educational attainment. The null hypothesis was therefore accepted for all profile variables. These results mean that, in this sample, teachers rated their competence at a uniformly high level regardless of their background.
6. The regression analysis showed that the extent of ICT use significantly influenced teaching competence, $F(1, 147) = 7.583$, $p = .007$, with a positive coefficient ($b = .197$). The R of .221 and R^2 of .049, however, indicate a weak relationship, since ICT use explained only about 4.9% of the variation in competence. The influence is therefore statistically significant but modest. This supports continued ICT integration and training, while acknowledging that other factors not measured in this study also contribute to teaching competence.

Conclusions

Based on the findings of the study, the researcher concluded that:

1. The Mathematics teaching workforce in the Schools District of Pototan I and II is generally composed of seasoned educators who have relatively limited exposure to ICT professional development opportunities.

2. Mathematics teachers in the Schools District of Pototan I and II frequently integrate technological tools, digital resources, and digital platforms into their educational and instructional tasks.

3. The mathematics teachers demonstrate excellent knowledge, skills, attitudes, and abilities needed to perform their teaching duties effectively. They are capable of delivering quality Mathematics instruction regardless of differences in age, sex, educational attainment, number of ICT trainings attended, type of school, and grade level taught.

4. Teachers' extent of use of ICT differed when classified by age, educational attainment, and the number of ICT trainings attended. Technology serves not only as a teaching aid but also as a means of enhancing teachers' professional capabilities and responsiveness to the evolving demands of education.

5. The uniformly very high self-rated competence across all profile groups can be viewed as a favorable baseline. Teachers in the Schools Districts of Pototan I and II, regardless of age, sex, educational attainment, number of trainings, type of school, or grade level, perceive themselves as competent. Professional development may therefore be focused on strengthening the use of ICT, particularly among groups with lower use, and on higher-order questioning and conceptual explanation, and not on competence in general.

6. The use of ICT positively influences teachers' competence in teaching Mathematics. While technology contributes positively to teaching competence, it is most effective when combined with strong pedagogical skills, continuous professional growth, and commitment to quality education.

Recommendations

Based on the findings and conclusions of the study, the following recommendations were suggested by the researcher:

1. The Department of Education (DepEd), Schools Division Office, and District Supervisors should provide more ICT-related training programs, workshops, and seminars for Mathematics teachers, particularly those who have attended only one to three ICT trainings. Since the study found that teachers who attended four or more ICT trainings demonstrated higher ICT utilization, increasing access to professional development opportunities can further strengthen teachers' ability and confidence in integrating technology into instruction.
2. School Heads should continuously encourage and support Mathematics teachers in enhancing their ICT knowledge and skills through school-based training, mentoring, coaching, and peer-learning activities.

Regular exposure to technological tools and best practices can help teachers maximize the use of ICT in lesson preparation, classroom instruction, assessment, and communication.

3. The Department of Education, Local Government Units (LGUs), School Heads, and community stakeholders should work together to strengthen ICT integration in schools by ensuring the availability of adequate technological resources, internet connectivity, and digital learning materials. Providing teachers and learners with sufficient ICT resources will help create more interactive and meaningful Mathematics learning experiences.
4. School Heads, Master Teachers, and Department Heads should sustain teachers' very high level of teaching competence by providing continuous instructional support, professional development activities, and opportunities for career advancement. Such efforts can help maintain the quality of Mathematics instruction regardless of teachers' age, sex, educational attainment, school type, or grade level assignment.
5. Future researchers should conduct further studies on other factors that may influence teaching competence, such as teaching experience, instructional practices, motivation, school support, and classroom environment. Since ICT was found to have only a small influence on teaching competence, exploring other variables may provide a deeper understanding of the factors that contribute to effective Mathematics teaching. They are encouraged to combine self-ratings with other sources of evidence, such as structured classroom observations, review of lesson plans and instructional materials, ratings from supervisors or peers, and indicators of learner performance. An instrument with a wider response range or more demanding items may also reduce ceiling effects and make differences among teacher groups easier to detect. Triangulating these sources would strengthen the validity of findings on teachers' ICT use and competence.

REFERENCES

1. Agyei, D. D. (2021). *Integrating ICT into schools in Sub-Saharan Africa: from teachers' capacity building to classroom implementation.* Retrieved from Springer Nature Link : https://link.springer.com/article/10.1007/S10639-020-10253-W
2. Al-Rahmi, A. M. (2021). *Exploring the Factors Affecting Mobile Learning for Sustainability in Higher Education.* Retrieved from Mdpi : https://www.mdpi.com/2071-1050/13/14/7893
3. Atika Qazi, N. H.-A. (2021). *Gender differences in information and communication technology use & skills: a systematic review and meta-analysis.* Retrieved from Springer Nature Link : https://link.springer.com/article/10.1007/s10639-021-10775-x
4. Attard, C., & Holmes, K. (2020). An exploration of teacher and student perceptions of blending digital technologies into mathematics classrooms. *The Journal of Mathematical Behavior*, *60*, Article 100820. HYPERLINK "https://www.google.com/search?q=https://doi.org/10.1016/j.jmathb.2020.100820" \t "_blank" https://doi.org/10.1016/j.jmathb.2020.100820
5. Balaban, I. (2023). *Information Communication Technology (ICT) and Education.* Retrieved from Mdpi : https://www.mdpi.com/2076-3417/13/22/12318
6. Bhutoria, A. (2022). *Patterns of cognitive returns to Information and Communication Technology (ICT) use of 15-year-olds: Global evidence from a Hierarchical Linear Modeling approach using PISA 2018.* Retrieved from Science Direct : https://www.sciencedirect.com/science/article/abs/pii/S0360131522000185
7. Borba, J. E. (2023). *Recent developments in using digital technology in mathematics education.* Retrieved from Springer Nature Link : https://link.springer.com/article/10.1007/s11858-023-01530-2
8. Cueva, A. (2021). *Information and Communication Technologies for Education Considering the Flipped Learning Model.* Retrieved from Mdpi : https://www.mdpi.com/2227-7102/12/3/207
9. Darling-Hammond, L. (2016). Research on teacher knowledge and performance: How teacher qualifications and development matter for student achievement. *Education Policy Analysis Archives*, *24*(14),1–25.HYPERLINK "https://www.google.com/search?q=https://doi.org/10.14507/epaa.24.2121" \t "_blank" https://doi.org/10.14507/epaa.24.2121
10. Dela Fuente, J., & Biñas, L. (2020). *Teachers' Competence in Information and Communications Technology (ICT) as an Educational Tool in Teaching: An Empirical Analysis for Program Intervention*. 5, 61-76.

11. Dockendorff, M. (2024). *Successfully preparing future mathematics teachers for digital technology integration: a literature review.* Retrieved from Tayor & Francis : https://www.tandfonline.com/doi/abs/10.1080/0020739X.2024.2309273
12. Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education*, *59*(2), 423–435. HYPERLINK "https://www.google.com/search?q=https://doi.org/10.1016/j.compedu.2012.02.001"\t"_blank" https://doi.org/10.1016/j.compedu.2012.02.001
13. Galindo-Domínguez, H. (2024). *Relationship between teachers' digital competence and attitudes towards artificial intelligence in education.* Retrieved from Science Direct : https://www.sciencedirect.com/science/article/pii/S0883035524000673
14. Gasaymeh, A. M., & Al-Rsa'i, M. S. (2021). *The Attitudes of Science and Mathematics Teachers toward the Integration of Information and Communication Technology (ICT) in Their Educational Practice: the Application of the Unified Theory of Acceptance and Use of Technology (UTAUT).* Retrieved from ERIC : https://eric.ed.gov/?id=EJ1290705
15. Gómez-Fernández, N. (2022). *Factors Influencing Teachers' Use of ICT in Class: Evidence from a Multilevel Logistic Model.* Retrieved from Mdpi : https://www.mdpi.com/2227-7390/10/5/799
16. Gonzalo Almerich, J. S.-R. (2021). *The influence of using ICT in high-skills competences and ICT competences. A structural model.* Retrieved from Springer Nature Link : https://link.springer.com/article/10.1007/s10639-021-10437-y
17. Graham, M. A. (2021). *Integrating Classroom Technology: South African Mathematics Teachers.* Retrieved from Taylor & FRancis : https://www.tandfonline.com/doi/abs/10.1080/07380569.2021.1953951
18. Guillén-Gámez, F. D. (2021). *Analysis of Teachers' Pedagogical Digital Competence: Identification of Factors Predicting Their Acquisition.* Retrieved from Springer Nature Link : https://link.springer.com/article/10.1007/s10758-019-09432-7
19. Hasin, I., & Nasir, M. K. (2021). *The Effectiveness of the Use of Information and Communication Technology (ICT) in Rural Secondary Schools in Malaysia.* Retrieved from ERIC : https://eric.ed.gov/?id=EJ1289656
20. Huang, C.-K. (2023). *Coaching for change: preparing mathematics teachers for technology integration in differentiated classrooms.* Retrieved from Springer Nature Link : https://link.springer.com/article/10.1007/s10639-023-11684-x
21. Ika Dhian Lestari, A. J. (2026). *The Role of Information and Communication Technology (ICT) in Mathematics Education: A Systematic Literature Review.* Retrieved from Springer Nature Link : https://link.springer.com/chapter/10.1007/978-981-97-3883-0_17
22. João C. Silva, J. C. (2023). *Factors influencing the use of information and communication technologies by students for educational purposes.* Retrieved from Springer NAture Link : https://link.springer.com/article/10.1007/s10639-023-12132-6
23. Joshi, D. R. (2023). *Developing and integrating digital resources in online mathematics instruction and assessment during Covid-19.* Retrieved from Taylor & Francis : https://www.tandfonline.com/doi/full/10.1080/2331186X.2023.2230394
24. Lars Jenßen, K. E.-G. (2023). *Comparison of pre- and in-service primary teachers' dispositions towards the use of ICT.* Retrieved from Springer Nature Link: https://link.springer.com/article/10.1007/s10639-023-11793-7
25. Lavidas, K. (2022). *Challenges and Opportunities of Mathematics in Digital Times: Preschool Teachers' Views.* Retrieved from Mdpi : https://www.mdpi.com/2227-7102/12/7/459
26. Lazarides, C. R. (2023). *A Systematic Review of Research Examining Teachers' Competence-Related Beliefs About ICT Use: Frameworks and Related Measures.* Retrieved from Spribger Nature Link : https://link.springer.com/chapter/10.1007/978-3-658-37895-0_8
27. Lee Yong Tay, S.-S. L. (2021). *Implementation of Online Home-Based Learning and Students' Engagement During the COVID-19 Pandemic: A Case Study of Singapore Mathematics Teachers.* Retrieved from Spriger NAture Link : https://link.springer.com/article/10.1007/s40299-021-00572-y

28. Liu, Y. (2022). *The Impact of Teacher Competence in Online Teaching on Perceived Online Learning Outcomes during the COVID-19 Outbreak: A Moderated-Mediation Model of Teacher Resilience and Age.* Retrieved from Mdpi : https://www.mdpi.com/1660-4601/19/10/6282
29. López Pérez, et al. (2022) and Cabellos, et al. (2023) — cited as supporting literature on teacher-centered vs. student-centered ICT use patterns
30. Lucas, M. (2021). *The relation between in-service teachers' digital competence and personal and contextual factors: What matters most?* Retrieved from Science Direct : https://www.sciencedirect.com/science/article/abs/pii/S0360131520302505
31. McGarr, O. (2021). *Exploring the digital competence of pre-service teachers on entry onto an initial teacher education programme in Ireland.* Retrieved from Taylor & Francis : https://www.tandfonline.com/doi/abs/10.1080/03323315.2020.1800501
32. Mensah, R. O. (2023). *Assessing the effect of information and communication technology usage on high school student's academic performance in a developing country.* Retrieved from Taylor & Franis : https://www.tandfonline.com/doi/full/10.1080/2331186X.2023.2188809
33. Mohammadi, M. K. (2021). *Investigating the challenges and factors influencing the use of the learning management system during the Covid-19 pandemic in Afghanistan.* Retrieved from Springer Nature Link : https://link.springer.com/article/10.1007/s10639-021-10517-z
34. Moodley, C. N. (2021). *ICT in mathematics education: an HLM analysis of achievement, access to and use of ICT by African Middle School Students.* Retrieved from Springer Nature Link : https://link.springer.com/article/10.1007/s43545-021-00230-6
35. Mustafa Cevikbas, J. K. (2023). *Empirical research on teacher competence in mathematics lesson planning: recent developments.* Retrieved from Springer ature Link : https://link.springer.com/article/10.1007/s11858-023-01487-2
36. Onoshakpokaiye, E. (2022). *ICT Utilization in Teaching-Learning Mathematics: A Call for Proper Integration and Enhancing Teachers-Students' Performance in the Developing Countries*. Indonesian Journal of Elementary Teachers Education, 3(2)
37. Osés, u. G. (2022). *The Negative Impact of Information and Communication Technologies Overuse on Student Performance: Evidence From OECD Countries.* Retrieved from Sage Journal : https://journals.sagepub.com/doi/full/10.1177/07356331221133408
38. Pant, B. P., & Shrestha, I. M. (2022). *ICT Tools for Remote Teaching and Learning Mathematics: A Proposal for Autonomy and Engagements.* Retrieved from ERIC : https://eric.ed.gov/?id=ED643115
39. Potari, D. (2023). *Tools and resources for mathematics teaching and mathematics teacher education.* Retrieved from Springer Nature Link : https://link.springer.com/article/10.1007/s10857-023-09576-5
40. Rodríguez-Jiménez, C. (2023). *Teaching and Learning Mathematics in Primary Education: The Role of ICT-A Systematic Review of the Literature.* Retrieved from Mdpi : https://www.mdpi.com/2227-7390/11/2/272
41. Rodríguez-Muñiz, L. J. (2021). *Secondary Mathematics Teachers' Perception of Their Readiness for Emergency Remote Teaching during the COVID-19 Pandemic: A Case Study.* Retrieved from Mdpi : https://www.mdpi.com/2227-7102/11/5/228
42. Rossella Santagata, J. K. (2021). *Mathematics teacher learning to notice: a systematic review of studies of video-based programs.* Retrieved from Springer NAture Link : Rossella Santagata, Johannes König
43. Sailer, M. (2021). *Technology-related teaching skills and attitudes: Validation of a scenario-based self-assessment instrument for teachers.* Retrieved from Sciece Direct : https://www.sciencedirect.com/science/article/pii/S0747563220303721
44. SEAMEO (2023). *Integrating ICT in Mathematics Education*. Southeast Asian Ministers of Education Organization
45. Skantz-Åberg, E. (2022). *Teachers' professional digital competence: an overview of conceptualisations in the literature.* Retrieved from Tayor & Francis : https://www.tandfonline.com/doi/full/10.1080/2331186X.2022.2063224
46. Tondeur, J., Forkosh-Baruch, A., Prestridge, S., Albion, P., & Edirisinghe, S. (2020). Responding to challenges in teacher professional development for ICT integration in education. *Educational Technology Research and Development*, *68*(4), 2133–2153. HYPERLINK "https://www.google.com/search?q=https://doi.org/10.1007/s11423-020-09805-9"\t"_blank" https://doi.org/10.1007/s11423-020-09805-9

47. Viberg, O. (2021). *Integrating digital technology in mathematics education: a Swedish case study.* Retrieved from Taylor & Francis : https://www.tandfonline.com/doi/full/10.1080/10494820.2020.1770801
48. Yang, X. (2022). *The impact of mathematics teachers' professional competence on instructional quality and students' mathematics learning outcomes.* Retrieved from Science Direct: https://www.sciencedirect.com/science/article/pii/S2352154622001310
49. Yuan, Z. (2023). *Facilitating Conditions as the Biggest Factor Influencing Elementary School Teachers' Usage Behavior of Dynamic Mathematics Software in China.* Retrieved from Mdpi : https://www.mdpi.com/2227-7390/11/6/1536
50. https://doi.org/10.1007/s11423-020-09805-9
51. Viberg, O. (2021). *Integrating digital technology in mathematics education: a Swedish case study.* Retrieved from Taylor & Francis : https://www.tandfonline.com/doi/full/10.1080/10494820.2020.1770801
52. Yang, X. (2022). *The impact of mathematics teachers' professional competence on instructional quality and students' mathematics learning outcomes.* Retrieved from Science Direct: https://www.sciencedirect.com/science/article/pii/S2352154622001310
53. Yuan, Z. (2023). *Facilitating Conditions as the Biggest Factor Influencing Elementary School Teachers' Usage Behavior of Dynamic Mathematics Software in China.* Retrieved from Mdpi : https://www.mdpi.com/2227-7390/11/6/1536

APPENDIX "A"

Research Questionnaire

Part I. Personal Information

Direction: This questionnaire aims to determine the Mathematics teachers' use of Information and Communication Technology (ICT) and teaching competence in the Districts of Pototan I and II for the School Year 2025-2026. Please provide the needed information as honestly as you can. Rest assured that your responses will be treated with utmost confidentiality.

Name (Optional): _____

Age: _____ years old

Sex: ☐ Male ☐ Female

Civil Status: ☐ Single ☐ Married ☐ Widow

Educational Attainment: ☐ Bachelor's ☐ Master's ☐ Doctorate

Number of ICT Trainings Attended: ☐ 1-3 ☐ 4 and more

Type of School: ☐ big school ☐ small school

Grade level taught: ☐ Kinder ☐ Grade 1 ☐ Grade 2 ☐ Grade 3
☐ Grade 4 ☐ Grade 5 ☐ Grade 6

PART II. Questionnaire on the Extent of Teachers' Use of Information Communications Technology (ICT) in Teaching Mathematics

Directions: Please read each statement carefully and answer each item by checking the column provided below. Your choices can be

5- Always

4- Often

3- Sometimes

2- Seldom

1- Never

	Use of Information Communications Technology (ICT) As a teacher, I …	**5**	**4**	**3**	**2**	**1**
1	browse/search the internet to collect information to prepare my lessons.					
2	browse/search the internet to collect resources to be used during lessons.					
3	use applications (like word processing packages, Spreadsheets, graphical applications, etc.) to prepare presentations for my lessons.					
4	download/upload/browse material from a learning platform.					
5	use ICT to provide feedback and/or assess students' learning.					
6	use video to supplement teaching.					
7	use PowerPoint to supplement lectures.					
8	communicate online with parents.					
9	let students share downloaded materials in class.					
10	use ICT as platform for teaching.					
11	use slide show presentation to supplement other teaching strategies.					
12	prepare grades using excel.					
13	use ICT to document and prepare reports.					
14	use emails to communicate with others.					
15	look for online professional development opportunities.					

PART III. Questionnaire on Teachers' Competence in Teaching Mathematics

Directions: Please read each statement carefully and answer each item by checking the column provided below. Your choices can be

5- Strongly agree

4- Agree

3- Undecided

2- Disagree

1- Strongly disagree

	Mathematics Teachers' Teaching Competence As a teacher, I…	**5**	**4**	**3**	**2**	**1**
1	present subject matter clearly and systematically.					
2	use varied ways/approaches in teaching.					
3	show fairness in dealing with students.					
4	adjust my methods of instruction to students' learning abilities.					
5	relate subject matter to other fields or current situations.					
6	create interesting situation to stimulate learning.					
7	attend to the needs of students.					

8	interpret abstract ideas and theories clearly and support with example, comparison and facts.					
9	explain assignment clearly and completely.					
10	present motivating activities before introducing the new lessons.					
11	encourage students to think critically.					
12	ask challenging questions.					
13	explain clearly the grading system used.					
14	made myself available beyond official time for students' consultation.					
15	have willingness to accept criticisms and mistakes.					

Thank you!

APPENDIX "G"

Reliability Test Result

Reliability results for Teachers' Use of ICT

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.917	0.919	15

Reliability results for Teachers' Competence

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.92	0.924	15