ASSESSING THE TECHNOLOGY INTEGRATION AS TEACHING STRATEGIES AMONG ELEMENTARY SCHOOL TEACHERS AT PANGLIMA ESTINO DISTRICT, DIVISION OF SULU

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ABSTRACT. This study employed a descriptive-correlational research methodology with 100 teachers selected through purposive sampling to evaluate technology integration as a teaching approach among elementary school educators in the Panglima Estino District of Sulu. The analysis involved frequency, percentage scores, weighted averages, standard deviations, and various statistical tests. It specifically examined technology integration concerning factors like competency, student engagement, and associated challenges, factoring in demographics such as age, gender, educational attainment, length of service, and position. The majority of respondents were female, aged 26 to 35, holding bachelor's degrees, with teaching experience of up to five years, and in the Teacher 1 position. Results indicated generally positive perceptions of technological integration among instructors, with consistent "Agree" responses across all subjects and no significant difference among demographic groups. A strong positive correlation aligned with the TPACK framework, suggesting an effective amalgamation of instructional strategies and technical skills to enhance learning outcomes. Additionally, findings supported the Technology Acceptance Model (TAM), illustrating that teachers' perspectives on technology use are heavily influenced by perceived usefulness. The study underscores the importance of robust digital infrastructure and targeted ICT funding to facilitate the transition to technology-driven instruction, thereby promoting academic improvement and the development of 21st-century skills.

KEYWORDS: *Technology Integration, Teaching Strategy, Technical skills, Digital Infrastructure, ICT, Academic Improvement, 21st Century Skills.*

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INTRODUCTION

Technology plays a crucial role in education in the twenty-first century, changing both instructional strategies and student experiences. UNESCO (2022) has identified technology integration as a vital enhancement component that promotes diversity, increases student involvement, and cultivates critical thinking abilities. Teachers can use creative, student-centered methods that go beyond the limitations of the traditional classroom thanks to the use of digital platforms, artificial intelligence, and online resources. Additionally, the OECD (2021) emphasizes

that effective teaching now requires digital competency, giving pupils the tools they need to thrive in a digital society.

The Philippines has acknowledged the significance of incorporating technology into the educational system on a national level. To provide schools with digital tools and support teachers' professional development in ICT-based instruction, the Department of Education (DepEd) launched a number of initiatives, including the DepEd Computerization Program (DCP) and the Information and Communication Technology (ICT) Framework for Education (DepEd, 2020).

In order to enhance Filipino students' creativity, collaboration, and problem-solving skills, the K–12 curriculum also encouraged technology integration in all academic areas (DepEd, 2019). Despite these initiatives, a lot of schools—especially those in rural and remote areas—still face problems like inadequate teacher preparation, a lack of digital equipment, and limited Internet connection (Sarmiento & Orale, 2016; Domingo, 2021).

The use of technology in the classroom was still in its infancy in the Panglima Estino District, Division of Sulu. Although educators recognize the value of incorporating digital technologies into the classroom, many nevertheless encounter ongoing obstacles that restrict their ability to use ICT efficiently. The complete implementation of technology-enhanced instruction continued to be hampered by issues like erratic Internet connectivity, inadequate or antiquated ICT facilities, a lack of digital learning resources, and inadequate technical support at both the school and division levels (Panglima Estino District, Division of Sulu, 2024). These limitations are in line with national research showing that ICT deficits in remote and rural schools in the Philippines have a detrimental impact on instructional strategies and student engagement (Department of Education, 2023).According to studies, teachers in geographically isolated and disadvantaged areas (GIDAs) frequently face challenges like inadequate infrastructure, inadequate training, and limited access to digital devices, which further impedes the advancement of technology integration in public schools (Marites & Dela Cruz, 2021). This notion is consistent with the findings of De Leon, Jumalon, Chavez, et al. all. (2024) It also demonstrated that there are barriers to implementing inclusive education in their classroom, such as lack of resources, lack of understanding, and denial of a chance. Understanding the level of technology integration among teachers in this district is crucial for identifying gaps and creating suitable interventions that can improve overall learner performance and teaching effectiveness in light of these ongoing challenges (Panglima Estino District, Division of Sulu, 2024).

The purpose of this study was to evaluate the degree to which teachers in the Panglima Estino District, Division of Sulu, use technology as a teaching tool. It specifically aimed to find out how proficient teachers are with technology, how often and how they utilize it in the classroom, and what obstacles they encounter when incorporating digital technologies. It is anticipated that the findings of this study will serve as a foundation for creating initiatives that enhance the use of technology in the classroom and are in line with both national objectives and international trends in digital learning.

LITERATURE

In educational research across international contexts, the incorporation of technology into instructional practices has emerged as a key area of interest. It is commonly acknowledged that in order to improve teaching and learning, true pedagogical integration must take place rather than just providing classrooms with digital gadgets (Chigona, Crompton, & Tunjera, 2024). A large portion of the international effort is guided by two major theoretical frameworks: the Substitution-Augmentation-Modification-Redefinition (SAMR) model and the Technological Pedagogical

Content Knowledge (TPACK) model.According to the TPACK framework, teachers must concurrently comprehend content knowledge (CK), pedagogical knowledge (PK), and technical knowledge (TK), as well as their intersections, in order to integrate technology effectively (Mishra & Koehler, as cited in Liu, 2013). Liu (2013) discovered, for instance, that elementary teachers in a Taiwanese professional development program combined PK and CK to create TPACK through group reflection and peer observations, transforming their technical operational skills into various instructional activities. This emphasizes the need for teachers' practices, knowledge, and beliefs to be in line with real integration.

The difficulties of integrating ICT become even more apparent in more isolated and resource-constrained environments like those in Mindanao. According to Alpuerto (2019), who looked at science instructors in Davao del Sur, teachers had to deal with a number of difficulties, such as inconsistent Internet access, a lack of technological assistance, and a dearth of training opportunities. Teachers showed resilience in the face of these difficulties by using coping strategies such group problem-solving, peer mentorship, and self-directed learning. The realities of educators in geographically isolated and disadvantaged areas (GIDAs), such as the Panglima Estino District in Sulu, where connectivity problems, a lack of digital infrastructure, and restricted access to professional development impede the full integration of technology in teaching and learning, are strongly reflected in these findings. The study highlights the significance of creating capacity-building initiatives and localized tactics that are suited to the particular requirements of educators in remote areas.

International research on the use of technology in the classroom emphasizes the global trend toward digital learning and its profound effects on pedagogy, student engagement, and instructional efficacy. Zounek and Šed'ová (2019) investigated how primary school teachers in the Czech Republic integrated information and communication technology (ICT) into English as a foreign language instruction using the Technological Pedagogical Content Knowledge (TPACK) framework. According to research by Chavez, Samilo, Cabiles, et al. (2026), students prioritize efficiency and vocabulary support but are concerned about correctness and privacy. Importantly, they believe that human teachers' cultural sensitivity and empathy cannot be replaced by artificial intelligence.According to their findings, teachers must be able to strike a balance between their technological expertise and their pedagogical and subject understanding in order for technology integration to be successful.

Similar to this, a study conducted in Estonia by Tondeur et al. (2020) found six profiles of K–12 teachers, ranging from "Motivating Facilitators" to "Efficiency Engineers," emphasizing the significant influence of educators' attitudes, motivations, and instructional goals on the use of technology in the classroom. Jones (2020) carried out a qualitative study on elementary teachers' experiences with digital integration in the United States and discovered that while limited access to resources and inadequate training remained obstacles, technology improved student involvement and academic outcomes. Worden (2007) also discovered that judicious use of digital technologies, like computers as learning stations and assessment tools, enhanced student motivation and performance even in classes with limited resources.

Numerous research have examined the use of technology in the classroom and how it affects student learning outcomes, instructional practices, and teacher performance in the Philippine setting. In a study titled The Impact of Technology Integration in Teaching Performance among Social Studies Teachers in Public Secondary Schools Under the K–12 Curriculum, Obando (2019) discovered that the use of technology greatly enhanced classroom engagement and teaching effectiveness. Higher productivity and student motivation were shown by teachers who regularly

employed digital resources like PowerPoint, multimedia movies, and online tests. This concept is consistent with Chavez and Lamorinas's (2023) findings, which are crucial to expanding our understanding of the various assessment techniques and approaches and how they affect the delivery.

In the analysis of technology integration in basic education, Dela Cruz (2020) emphasized that teachers' attitudes, digital competence, and resource availability are critical for effectively utilizing technology in instruction. Educators with a positive outlook towards technology tend to integrate it more successfully into their practices. Complementing this, a study by Castillo and Abao (2021) in Davao del Norte highlighted that despite possessing basic computer skills, elementary teachers, especially in rural areas, encounter substantial challenges, such as unreliable internet access and insufficient technological equipment. This situation aligns with the findings of Nazareth, Chavez, Dusaban, et al. (2026), which pointed out that the motivation for integrating technology is often linked to altruistic values and a commitment to social transformation, evident in their empathetic and responsive teaching methods. Furthermore, Santos and Peralta (2022) found that many public school teachers in the Visayas region primarily used technology for communication and lesson delivery due to a lack of technical support and training, limiting opportunities for student-centered learning activities.

All things considered, local research demonstrate both the advancements and ongoing difficulties in technology integration in Philippine schools. Together, they show that although educators recognize the importance of technology in improving instructional techniques and student learning, effective integration necessitates adequate training, administrative assistance, and access to dependable digital infrastructure. These results are especially pertinent to the Division of Sulu's Panglima Estino District, where teachers' capacity to successfully integrate technology in the classroom may be hampered by resource scarcity and remote location. Therefore, evaluating the degree of technology integration among primary school teachers in this domain offers important insights into resolving the discrepancies between the execution of policies and actual classroom practice.

METHODS

1. Research Design

Using a quantitative descriptive research methodology, the study investigated technology usage among elementary teachers in the Panglima Estino Division of Sulu. It aimed to collect data on perceived efficacy, comfort levels, types of technology, and frequency of digital tool use. Participants were chosen through purposeful sampling to ensure diversity across grade levels and schools, and the reliability of the questionnaire was verified before distribution. Data were analyzed using descriptive statistics to provide insights into effective strategies and improvement areas, assisting legislators and school administrators in decision-making regarding training and resources for technology integration in classrooms.

2. Research Local

The study was carried out in the Sulu Division's Panglima Estino District. The district was made up of multiple primary schools that catered to students from different barangays. Panglima Estino was selected as the study's location because it reflected a region where teachers encountered several difficulties incorporating technology into their lesson plans because of a lack of resources and internet access. This district's schools offered a perfect environment for evaluating how educators used technology to improve their teaching methods and raise student achievement.

3. Participants of the Study

One hundred elementary school teachers who now work in public schools in the Panglima Estino District, Division of Sulu, served as the study's respondents. Men and women from various grade levels who either utilize or have the ability to employ technology in their teaching were included. These educators' varied backgrounds and degrees of expertise ensure that the study presents a comprehensive picture of how technology is incorporated into instruction in this region.

4. Sampling Procedure

Purposive sampling was employed in this study to choose Panglima Estino District elementary school teachers with prior experience incorporating technology into their instruction (Scribbr, 2023). This strategy focuses on participants who can offer insightful opinions regarding the usage of technology in the classroom (Campbell, 2020). To ensure a complete view, teachers from all disciplines and grade levels were invited. Purposive sampling is appropriate for this study since it is frequently employed in education research to concentrate on participants with pertinent experience (Ruggiero, n.d.; Researcher Life, 2025).

5. Research Instrument

A structured questionnaire, modified from previous research by Obispo (2023) and De Jong (2004), was utilized to gauge educators' perceptions of technology in K–12 education. It comprises three main sections: the first collects demographic data (age, gender, education level, teaching experience, and technology access); the second assesses technology's role in lesson design, teaching delivery, student involvement, assessment, and professional development; and the third evaluates the effectiveness of technology in classrooms and identifies the challenges educators encounter.

6. Data Gathering Procedure

To evaluate technology integration among elementary school teachers in the Panglima Estino District of Sulu, researchers conducted a systematic data collection process. After obtaining necessary permissions, validated questionnaires were distributed to teachers through school principals, ensuring confidentiality and voluntary participation. The researchers manually collected the surveys to guarantee accuracy. The findings and recommendations were based on the data's encoding, tabulation, and statistical analysis, facilitating the assessment of technology integration levels.

7. Ethical Considerations

The validity and trustworthiness of research depend on ethical issues. In order to ensure that the data collected complies with ethical standards, researchers must adhere to a number of fundamental principles: preventing harm to respondents, respecting their rights and dignity, preserving confidentiality and anonymity, maintaining objectivity in analyses and discussions, getting respondents' voluntary consent, and obtaining ethics clearance by fulfilling all requirements set forth by the Ethics Committee.

RESULTS

1. What is the extent of technology integration as a teaching strategy among elementary school teachers at Panglima Estino District, Division of Sulu in terms of: Technology and Competence; Teaching and Student Engagement; and Challenges and Attitudes?

Table 1.1 In terms of Technology and Competence

No	Statements	Mean	S.D.	Description

1	I frequently integrate technology into my teaching lessons.	3.74	.92791	Agree
2	I use multimedia presentations (videos , slides) during my lessons.	3.36	1.16792	Moderately Agree
3	Learners regularly use digital tools (apps , simulations) in my classroom.	3.22	1.08786	Moderately Agree
4	I encourage learners to use technology for research and projects.	4.05	.88048	Agree
5	Technology is available and accessible for use in my classroom.	3.51	1.07774	Agree
6	I feel confident using new technology for teaching.	3.83	.98530	Agree
7	I can troubleshoot common problems when using educational technology.	3.64	.94836	Agree
8	I am skilled at creating my own digital teaching materials.	3.57	.99752	Agree
9	I have received adequate training to use educational technology effectively.	3.61	1.10914	Agree
10	I am comfortable using online platforms for assessment and quizzes.	3.56	.99818	Agree
	Weighted Mean	**3.609**	**.83607**	**Agree**

Legend: (5) 4.50 – 5.00=Strongly Agree; (4) 3.50 – 4.49=Agree; (3) 2.50 – 3.49=Moderately Agree; (2)1.50 – 2.49=Disagree; (1)1.00 – 1.49=Strongly Disagree

Table 1.1 reveals that primary school teachers in the Division of Sulu's Panglima Estino District had a composite mean score of 3.609, which indicates that they "Agree" with the use of technology in the classroom. The statement encouraging students to use technology for research received the highest score of 4.05, followed by 3.83 for confidence in utilizing new technology and 3.74 for frequent incorporation of technology into lessons, all of which were rated as "Agree."

Table 1.2 In terms of Teaching and Student Engagement

No	Statements	Mean	S.D.	Description
1	Technology integration improves my teaching effectiveness.	4.21	.87957	Agree
2	Technology helps me deliver lessons in more engaging ways.	4.00	.99494	Agree
3	Technology allows me to cater to different learning styles.	3.98	1.06344	Agree
4	Integration of technology fosters higher-order thinking skills in learners.	4.03	.78438	Agree
5	The use of technology reduces the time I spend on lesson preparation.	3.93	.93479	Agree
6	Technology makes learners more engaged during lessons.	3.96	.80302	Agree
7	Learners understand complex concepts better with technology.	3.96	.82780	Agree
8	Technology motivates learners to participate actively in class.	4.16	.70668	Agree
9	Learners demonstrate improved academic performance through technology use.	3.82	.97835	Agree
10	Technology supports collaboration among students during activities.	3.99	.90448	Agree
	Weighted Mean	**4.004**	**.78611**	**Agree**

Legend: (5) 4.50 – 5.00=Strongly Agree; (4) 3.50 – 4.49=Agree; (3) 2.50 – 3.49=Moderately Agree; (2)1.50 – 2.49=Disagree; (1)1.00 – 1.49=Strongly Disagree

Table 1.2 displays information on the use of technology in the classroom by elementary teachers in Sulu's Panglima Estino District, emphasizing instruction and student involvement. Teachers' total composite mean score is 4.004, which is rated as "Agree." "Technology integration improves my teaching effectiveness" had the highest score (4.21), followed by "Technology motivates learners to participate actively" (4.16) and "Integration of technology fosters higher-order thinking skills" (4.03), all of which were classified as "Agree."

Table 1.3 In terms of Challenges and Attitudes

No	Statements	Mean	S.D.	Description
1	Lack of technological resources limits my ability to integrate technology.	3.95	.80873	Agree

2	Internet connectivity issues hinder effective technology use in the classroom.	3.88	.81995	Agree
3	I face time constraints when planning technology-based lessons.	3.62	.87363	Agree
4	Some learners do not have equal access to technology outside schools.	3.98	.73828	Agree
5	Technical problems frequently disrupt lessons involving technology.	3.81	.86100	Agree
6	I am willing to try new technologies to improve my teaching.	4.02	1.07290	Agree
7	Technology integration is essential for modern education.	4.08	1.04137	Agree
8	I believe technology will continue to play a bigger role in teaching.	4.17	1.11966	Agree
9	School administration supports the use of technology in classrooms.	4.05	.88048	Agree
10	I would like more professional development focused on technology integration.	4.05	.84537	Agree
	Weighted Mean	**3.961**	**.74791**	**Agree**

Legend: (5) 4.50 – 5.00=Strongly Agree; (4) 3.50 – 4.49=Agree; (3) 2.50 – 3.49=Moderately Agree; (2)1.50 – 2.49=Disagree; (1)1.00 – 1.49=Strongly Disagree

Table 1.3 shows the degree of technology integration among elementary school teachers in the Division of Sulu's Panglima Estino District. With a composite mean score of 3.961 (SD =.74791), there is broad consensus about difficulties and attitudes. "I think technology will continue to play a bigger role in teaching" had the highest score (4.17; SD = 1.1966), followed by "Technology integration is essential for modern education" (4.08; SD = 1.04137). Other noteworthy results are 4.05 (SD =.88048 and SD =.84547, respectively), categorized as "Agree," for "School administration supports the use of technology" and "I would like more professional development focused on technology integration."

2. Is there a significant difference in the extent of technology integration as a teaching strategy among elementary school teachers at Panglima Estino District, Division of Sulu when the data are grouped according to the demographic profile of the teacher-respondents in terms of: Age; Gender; Educational attainment; Length of service; and Position?

Table 2.1 According to Age

SOURCES OF VARIATION		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**	**Description**
Technology and competence	Between Groups	1.798	4	.449	.633	.640	Not
	Within Groups	67.404	95	.710			Significant
	Total	69.202	99				
Teaching and student engagement	Between Groups	.505	4	.126	.198	.939	Not
	Within Groups	60.673	95	.639			Significant
	Total	61.178	99				
Challenges and attitudes	Between Groups	.663	4	.166	.288	.885	Not
	Within Groups	54.714	95	.576			Significant
	Total	55.378	99				

Significance at alpha 0.05

Table 2.1 examines how elementary teachers in Sulu's Panglima Estino District integrate technology into their lessons, paying particular attention to age disparities. The hypothesis that age does not significantly affect perceptions of technology in teaching is accepted since the results, as shown by F-ratios and P-values, show no significant variation in opinions on technology integration across age groups.

Table 2.2 According to Gender

VARIABLES	Grouping Gender	Mean	S. D.	Mean Difference	t	Sig.	Description
Technology and competence	Male	3.709	.73219	.12832	.634	.528	Not
	Female	3.580	.86536				Significant
Teaching and student engagement	Male	4.063	.73972	.07646	.401	.689	Not
	Female	3.987	.80249				Significant
Challenges and attitudes	Male	3.922	.72698	-.04907	-.270	.787	Not
	Female	3.971	.75797				Significant

Significance at alpha 0.05

Table 2.2 reveals that male and female instructors in Panglima Estino District, Division of Sulu, have similar opinions about technology integration. The idea that gender has no bearing on the degree of technology integration as a teaching approach is supported by the fact that both genders consistently respect it.

Table 2.3 According to Educational Attainment

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Technology and competence	Between Groups	1.571	2	.785	1.126	.328	Not
	Within Groups	67.631	97	.697			Significant
	Total	69.202	99				
Teaching and student engagement	Between Groups	.677	2	.338	.543	.583	Not
	Within Groups	60.502	97	.624			Significant
	Total	61.178	99				
Challenges and attitudes	Between Groups	.792	2	.396	.704	.497	Not
	Within Groups	54.586	97	.563			Significant
	Total	55.378	99				

Significance at alpha 0.05

Table 2.3 demonstrates that there is no discernible variation in the use of technology as a teaching approach among elementary school teachers in the Division of Sulu's Panglima Estino District according to educational attainment. The idea that educational achievement has no bearing on technological integration is accepted since teachers with bachelor's, master's, or doctoral degrees have identical opinions on it.

Table 2.4 According to Length of Service

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Technology and competence	Between Groups	2.748	3	.916	1.323	.271	Not
	Within Groups	66.454	96	.692			Significant
	Total	69.202	99				
Teaching and student engagement	Between Groups	3.157	3	1.052	1.741	.164	Not
	Within Groups	58.021	96	.604			Significant
	Total	61.178	99				
Challenges and attitudes	Between Groups	3.208	3	1.069	1.968	.124	Not
	Within Groups	52.170	96	.543			Significant

	Total	55.378	99			

Significance at alpha 0.05

Table 2.4 demonstrates that there is no discernible variation in the use of technology among Panglima Estino District elementary school teachers according to their tenure. The hypothesis that technology integration levels are comparable independent of teaching experience is supported by the constant F-ratios and P-values.

Table 2.5 According to Position

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Technology and competence	Between Groups	.749	4	.187	.260	.903	Not Significant
	Within Groups	68.453	95	.721			
	Total	69.202	99				
Teaching and student engagement	Between Groups	1.611	4	.403	.642	.634	Not Significant
	Within Groups	59.567	95	.627			
	Total	61.178	99				
Challenges and attitudes	Between Groups	3.116	4	.779	1.416	.235	Not Significant
	Within Groups	52.262	95	.550			
	Total	55.378	99				

Significance at alpha 0.05

Table 2.5 demonstrates the degree of technology integration among elementary teachers in Sulu's Panglima Estino District according to their roles. The results show that F-ratios and P-values do not significantly differ, suggesting that different teaching ranks have similar opinions about technology integration. Therefore, it is acknowledged that positions have no bearing on the degree of technology integration.

3. Is there a significant correlation among the subcategories subsumed under the extent of technology integration as a teaching strategy among elementary school teachers at Panglima Estino District, Division of Sulu?

Variables	Pearson *r*	Sig.	N	Description
Technology and competence Teaching and student engagement	.874**	.000	100	Very High Correlation
Challenges and attitudes	.749**	.000	100	Very High Correlation
Teaching and student engagement Challenges and attitudes	.892**	.000	100	Very High Correlation

Legend: ** *Correlation Coefficient is significant at alpha .01 level*

Correlation Coefficient Scales Adopted from Hopkins, Will (2002): 0.0-0.1=Nearly Zero; 0.1-0.30=Low; 0.3-0.5 0=Moderate; 0.5-0.70=High; 0.7-0.9= Very High; 0.9-1=Nearly Perfect

Table 3 indicates that elementary teachers in Panglima Estino District, Sulu, exhibit a strong positive correlation with technology integration in teaching, particularly concerning student engagement and attitudes (r=.892; sig=.000). This implies that higher student participation aligns with positive attitudes. Moreover, technology proficiency is significantly related to teaching engagement (r=.874; sig=.000), highlighting its role in enhancing student interaction. Additionally, a correlation exists between technology competence and attitudes (r=.746; sig=.000), suggesting that administrative support is crucial for fostering positive attitudes through technical skills. These findings challenge the hypothesis of no significant relationships and advocate for increased training investment to enhance teacher competency and student performance.

DISCUSSION

1.) On the Extent of technology integration as a teaching strategy among elementary school teachers at Panglima Estino District, Division of Sulu

According to the study, primary school teachers in Panglima Estino District, Sulu, routinely use technology integration as a teaching approach across major domains, and there is broad agreement on its significance. Teachers gave teaching and student involvement especially excellent ratings, highlighting how technology may improve academic results, pedagogy, and creativity. These findings are consistent with research by Jones (2020), who found that technology improved student involvement and learning outcomes, and Park and Son (2020), who found gains in creativity and participation. In line with the findings of Pastor and Pedro (2020) and Peralta-Ruales and Adriano (2024), instructors in the field encounter difficulties despite acknowledging the importance of technology in contemporary education, such as little resources, poor internet connectivity, and inadequate technical support. As stressed by Dela Cruz (2020) and further supported by Castilo and Abao (2021) and Bautista and Mendoza (2023), teachers exhibit favorable attitudes and sufficient ICT abilities, but their classroom utilization is still irregular, underscoring the need for improved access to resources.

2.) On difference in the Extent of technology integration as a teaching strategy among elementary school teachers at Panglima Estino District, Division of Sulu

Regardless of demographic characteristics, elementary school teachers in Panglima Estino District, Division of Sulu, do not significantly differ in the degree of technology integration as a teaching strategy. The findings indicate that teachers' perceptions of technology integration do not vary according to age, gender, educational attainment, length of service, or position. This consistent outcome suggests a unified approach toward integrating technology into instructional practices among teachers. This finding is supported by Ertmer Peggy A. (2005), who emphasized that teachers' beliefs and institutional support play a greater role in technology integration than demographic variables. Similarly, Bingimlas Khalid A. (2009) found that access to training and school support systems contributes more significantly to technology adoption than teachers' personal characteristics.

3.) Correlation among the subcategories subsumed under the usage of multimedia presentations in enhancing classroom instruction in selected public secondary schools in Sulu

These findings reveal a very high positive and significant relationship among the subcategories of technology integration as a teaching strategy in Panglima Estino District, Sulu. The strongest correlation exists between teaching and student engagement, as well as challenges and attitudes, suggesting that teachers' positive attitudes toward technology improve as instructional effectiveness and student participation increase. Moreover, the significant relationship between technology and competence and teaching and student engagement indicates that teachers' technical skills enhance their ability to utilize technology effectively in engaging students.This supports the study of Mishra Punya and Koehler Matthew J. (2006), who emphasized that technological competence strengthens effective teaching practices and student learning experiences. Likewise, Adalia, Chavez, and Hayudini et al. (2025) highlighted that social learning and technology-based exposure significantly enhance student learning and engagement. Although the relationship between technology competence, challenges, and attitudes is slightly weaker, it still demonstrates that competence fosters positive attitudes, which are influenced by external support systems such as administrative assistance. Consequently,

institutional investments in training and technical support can significantly improve teachers' competence, attitudes, and student engagement, thereby promoting academic progress.

CONCLUSION

The study's findings show that young, married women between the ages of 26 and 35 make up the majority of the teacher workforce in Panglima Estino District, Sulu. The majority of these women have bachelor's degrees and are employed as Teacher 1. The use of technology in the classroom is seen favorably, developing into a pedagogical perspective that acknowledges both its advantages and disadvantages. Despite technical and psychological obstacles, the results show that technology is seen as a motivator and an enhancer of teaching efficacy. When teachers were grouped by age, gender, education level, length of service, or position, no discernible disparities in technology integration were found. The study supports the TPACK paradigm by demonstrating a strong association across multiple domains of technology integration, demonstrating how teachers combine pedagogical tactics with technical expertise to enhance learning. It also emphasizes the importance of technology in student-centered knowledge building, which is consistent with constructivist learning theory. The study also supports the Technology Acceptance Model (TAM), showing that instructors' opinions regarding the usage of technology are greatly influenced by perceived usefulness. Finally, it is consistent with Rogers' Diffusion of Innovation theory, which emphasizes how social and institutional compatibility allows technology to become embedded in educational culture.

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