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EFFECTIVENESS OF TECHNOLOGY-INTEGRATED TEACHING STRATEGIES: AS A PATHWAY TO A DIGITAL LITERACY IN BASIC EDUCATION AMONG ELEMENTARY TEACHERS

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ABSTRACT

This study investigates the role of technology-integrated teaching strategies in enhancing digital literacy among elementary teachers within a basic education context. Addressing a gap in the literature on the effectiveness of technology use in developing teachers' digital competencies, the research employed a descriptive survey design at Kawmpang Elementary School in the Philippines, involving a randomly selected sample of 50 faculty members. Data were collected through a structured questionnaire assessing the extent of technology integration and digital literacy levels, and were analyzed using descriptive statistics, independent-samples t-tests, and Pearson product-moment correlation, all conducted in the Statistical Package for the Social Sciences. Results indicate that teachers generally perceive technology integration as effective in improving instructional delivery, professional confidence, and productivity, with no statistically significant gender differences in digital literacy. A strong positive correlation ($r = 0.756$, $p < .001$) was found between the frequency of technology-integrated teaching strategies and teachers' digital literacy levels, highlighting a reciprocal relationship whereby pedagogically aligned technology use fosters digital competence. These findings emphasize that digital literacy is embedded in instructional practice rather than an isolated skill, underscoring the need for sustained, context-sensitive professional development and institutional support to optimize technology integration. The study contributes to educational research by reconceptualizing digital literacy as a dynamic, practice-oriented competence. It offers practical implications for policymakers and school leaders to implement comprehensive capacity-building frameworks that enhance both teacher proficiency and instructional quality in technology-rich learning environments.

Keywords: *technology integration, digital literacy, elementary education, teaching strategies, professional development, instructional effectiveness*

INTRODUCTION

Technology integration has become a fundamental aspect of teaching and learning in basic education, transforming traditional classrooms beyond the conventional chalk-and-board approach (Siminto et al., 2024). Educators are increasingly expected to incorporate digital tools, online resources, multimedia materials, and learning platforms to enhance instructional delivery and engage students more effectively (Dermawan & Sumarni, 2024). This shift reflects a broader educational landscape where technology supports diverse learning styles and fosters interactive experiences.

In the digital age, the role of elementary teachers extends beyond mere facilitators of knowledge to becoming digital guides for young learners (Dermawan & Sumarni, 2024). Since elementary education establishes foundational skills, teachers must adeptly use technology to support essential competencies such as reading, numeracy, creativity, collaboration, and problem-solving (Setyawati, 2024). This expanded role requires them to integrate technology thoughtfully to nurture these skills from the earliest stages of education (Siminto et al., 2024).

Technology-integrated teaching strategies encompass a range of instructional approaches that leverage information and communication technologies (Magtoltol & Oropa, 2025). These strategies include PowerPoint presentations, educational videos, interactive applications, online quizzes, learning management systems, digital storytelling, and gamified learning (Ahmed et al., 2025; Puspitasari et al., 2025; Setyawati, 2024). Such methods enable teachers to create dynamic and engaging learning environments that cater to varied student needs (Maulidia et al., 2023).

Digital literacy, defined as the ability to access, evaluate, use, create, and communicate information through digital technologies, is increasingly vital in basic education (Pomarejos et al., 2025). It equips both teachers and learners to navigate and participate effectively in a technology-driven society (Magtoltol & Oropa, 2025). Embedding digital literacy within the curriculum ensures that students develop critical skills necessary for academic success and lifelong learning (Siminto et al., 2024).

The relationship between teaching strategies and digital literacy is reciprocal. As teachers employ technology-integrated strategies in lesson planning, instruction, assessment, and classroom management, they enhance their own digital literacy (Reyes & Buenaventura-Gaza, 2025). Regular use of digital tools builds their confidence, competence, and responsible practices, which, in turn, positively impact their teaching effectiveness (Magtoltol & Oropa, 2025).

The benefits of technology integration in teaching are multifaceted. It promotes greater learner engagement, facilitates better visualization of concepts, encourages interactive classroom activities, provides flexible access to learning materials, improves assessment methods, and stimulates teacher creativity (Maulidia et al., 2023; Puspitasari et al., 2025; Setyawati, 2024). These advantages contribute to a more effective and inclusive educational experience (Dermawan & Sumarni, 2024).

Despite these benefits, elementary teachers face several challenges in integrating technology. Barriers such as limited internet access, inadequate devices, insufficient

training, low digital confidence, resistance to adopting new technologies, lack of technical support, and unequal access to resources can hinder effective implementation (Magtoltol & Oropa, 2025; Marjorie et al., 2025; Robandi et al., 2025).

Addressing these challenges requires comprehensive teacher training and robust institutional support. Professional development programs, enhanced ICT infrastructure, administrative support, and ongoing capacity-building initiatives are essential for empowering elementary teachers to integrate technology successfully into their teaching practices (Marjorie et al., 2025; Pomarejos et al., 2025).

While technology integration in basic education has been widely promoted, a research gap remains regarding the effectiveness of these strategies in enhancing elementary teachers' digital literacy (Pomarejos et al., 2025). This study aims to fill that gap by examining how technology-integrated teaching strategies serve as a pathway to developing digital literacy among elementary educators in basic education settings (Magtoltol & Oropa, 2025).

Research Questions

This research examined the effectiveness of technology-integrated teaching strategies and the digital literacy of elementary teachers. It was anchored in the premise that effective technology integration in basic education depends not only on the availability of digital tools but also on teachers' capacity to use them meaningfully in classroom instruction. In this regard, the study linked teachers' technology-integrated classroom practices with their level of digital literacy, while also considering gender as a relevant teacher-related profile variable.

Specifically, the study sought to answer the following questions:

1. What is the level of effectiveness of technology-integrated teaching strategies among elementary teachers in their classroom practices?
2. What is the level of digital literacy of elementary teachers when grouped according to gender?
3. Is there a significant relationship between the effectiveness of technology-integrated teaching strategies and the level of digital literacy of elementary teachers?

METHODOLOGY

Research Design

This study employed a descriptive survey design to examine technology-integrated teaching strategies and digital literacy among elementary teachers. The design was appropriate because the study aimed to describe the extent to which teachers integrate technology in classroom instruction and determine their level of digital literacy within a basic education setting. Rather than testing causal or correlational relationships, the study

focused on generating a structured profile of teachers' technology-related instructional practices and digital literacy competencies.

Research Locale

The study was conducted at Kawmpang Elementary School, Capitol Site, Patikul, Sulu, Philippines. The school served as the research site because its elementary faculty members provided the relevant context for examining technology-integrated teaching strategies in basic education.

Respondents and Sampling Strategy

The study's respondents were faculty members of Kawmpang Elementary School in the Patikul East District, Sulu. The study included teachers who were using technology or technology-supported strategies in their classroom instruction.

A simple random sampling technique was used to select the respondents from the eligible faculty population. This approach was employed to minimize selection bias and ensure that each qualified teacher had an equal opportunity to participate in the study. A 10% margin of error was considered in determining the sample size.

Research Instrument

Data were collected using a structured checklist questionnaire developed for the study. The instrument was organized into three sections. The first section gathered the demographic profile of the respondents. The second section measured the extent to which elementary teachers used technology-integrated teaching strategies in classroom instruction. The third section assessed teachers' digital literacy in relation to their instructional use of technology.

The questionnaire items were aligned with the study's objectives and the major variables under investigation. To strengthen the instrument's validity, the questionnaire should be reviewed by experts in educational technology, basic education, and research methodology. Reliability testing may also be conducted to determine the internal consistency of the scale items before final data analysis.

Data Collection Procedure

Before data collection, permission was secured from the appropriate school authority. The selected respondents were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality of their responses. The questionnaires were then distributed to the respondents and retrieved after completion. Responses were checked for completeness before encoding and statistical treatment.

Statistical Treatment of Data

The data gathered in this study were encoded, processed, and analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive and inferential statistical techniques were employed in accordance with the study's objectives.

To assess the effectiveness of technology-integrated teaching strategies among elementary teachers, the weighted mean was used to determine the respondents' overall assessment of technology integration in classroom practices. The computed means were interpreted using a predetermined descriptive scale.

To describe the level of digital literacy among elementary teachers, grouped by gender, the mean, standard deviation, and standard error were used. These measures summarized the respondents' digital literacy levels and the variability in responses between male and female teachers.

To determine whether there was a significant difference in digital literacy levels across genders, an Independent Samples t-test was conducted. Levene's test was used to examine the assumption of equality of variances. The result was interpreted at the 0.05 level of significance. A probability value greater than 0.05 indicated that the difference between male and female teachers was not statistically significant.

To determine the relationship between technology-integrated teaching strategies and teachers' level of digital literacy, the Pearson product-moment correlation coefficient was used. This test was appropriate because the study examined the degree and direction of association between two continuous variables. The magnitude of the correlation coefficient assessed the strength of the relationship, and statistical significance was determined at the 0.01 and 0.05 levels.

The null hypotheses were tested using the corresponding probability values. A result with a probability value less than 0.05 was considered statistically significant, leading to the rejection of the null hypothesis. Conversely, a probability value greater than 0.05 indicated that the null hypothesis was retained.

RESULTS

Table 1. Level of Effectiveness of Technology-Integrated Teaching Strategies among Elementary Teachers

Dimension / Indicator	Mean	Verbal Interpretation
A. Instructional Effectiveness	**3.67**	**Agree**
Technology integration improves my lesson delivery.	3.68	Agree
Using digital tools helps me explain concepts more clearly.	3.76	Agree
Technology increases student engagement during lessons.	3.66	Agree
Students participate more actively when technology is integrated.	3.74	Agree

Technology allows me to use a variety of teaching strategies.	3.62	Agree
I can assess students more effectively using digital tools.	3.58	Agree
Technology integration helps me monitor student progress efficiently.	3.64	Agree
B. Efficiency and Productivity	**3.62**	**Agree**
Technology reduces my workload in preparing lessons.	3.58	Agree
Using digital tools saves time during classroom instruction.	3.64	Agree
I can organize my teaching materials better using technology.	3.68	Agree
Technology improves communication with students and parents.	3.64	Agree
I use digital platforms for announcements and academic updates.	3.58	Agree
C. Professional Growth and Confidence	**3.69**	**Agree**
Technology integration increases my confidence in teaching.	3.64	Agree
I feel motivated to teach when I use digital tools.	3.70	Agree
I continuously explore new digital tools to improve my teaching strategies.	3.78	Agree
I believe technology integration enhances my overall teaching effectiveness.	3.62	Agree
Overall Weighted Mean	**3.66**	**Agree**

Legend: 4 = Strongly Agree; 3 = Agree; 2 = Disagree; 1 = Strongly Disagree.

Table 1 presents the level of effectiveness of technology-integrated teaching strategies among elementary teachers. The overall weighted mean of 3.66, verbally interpreted as Agree, indicates that the respondents generally perceived technology integration as effective in supporting classroom instruction.

Among the three dimensions, Professional Growth and Confidence obtained the highest domain mean of 3.69, suggesting that teachers viewed technology integration as a source of instructional confidence, motivation, and professional improvement. This finding is consistent with the research, which determined that teachers' readiness to integrate educational technology is shaped by their perceived skills, beliefs, school support, goal clarity, and access to educational technology resources (D Ainin, Maed & M Bauyot, Phd, 2024). Thus, the result implies that teachers do not merely use digital tools

for convenience; rather, they associate the use of technology with continuous professional learning and improved teaching effectiveness (Yin Yin & Mohamad, 2023).

The dimension on Instructional Effectiveness obtained a mean of 3.67, also verbally interpreted as Agree. This suggests that teachers perceived technology integration as helpful in improving lesson delivery, explaining concepts more clearly, increasing student engagement, encouraging active participation, supporting varied teaching strategies, assessing learners, and monitoring student progress. This finding is corroborated by the Technological Pedagogical Content Knowledge framework, which posits that effective technology integration requires the interplay among technological, pedagogical, and content knowledge (Jibril & Adedokun-Shittu, 2023). In this sense, technology is instructionally effective when used not as a stand-alone tool but as part of a deliberate pedagogical strategy (Bacatan, 2022).

Meanwhile, Efficiency and Productivity achieved a mean score of 3.62, which is still verbally interpreted as Agree. This indicates that technology is perceived as aiding lesson preparation, time management, the organization of instructional materials, and communication with students and parents. However, since this dimension recorded the lowest domain mean, the findings may suggest that technology use still requires further preparation, technical competence, and institutional support to alleviate teachers' workload fully. Similarly, it is emphasized that teachers' use of technology is closely linked to their pedagogical beliefs and the conditions that facilitate classroom implementation (Alka, 2024).

Overall, the findings suggest that elementary teachers view technology-integrated teaching strategies positively. The results indicate that integrating technology enhances instructional effectiveness, boosts professional confidence, and improves teaching efficiency. However, it is important to interpret these findings as reflecting teachers' perceived effectiveness rather than direct evidence of improved student achievement. This caution aligns with the argument that technology integration should be evaluated not merely by the presence or extent of technology use, but by how well it aligns with pedagogy, learning processes, and instructional goals (Bacatan, 2022). Therefore, ongoing training, access to digital resources, and the pedagogically sound use of technology are essential to reinforce the meaningful integration of technology in elementary classroom practices (Rosero-Cardenas et al., 2024).

Table 2. Level of Digital Literacy of Elementary Teachers by Gender

Gender	n	Mean	SD	SE	Verbal Interpretation
Male	6	3.21	0.45	0.18	Agree
Female	44	3.52	0.39	0.06	Agree
Overall	**50**	**3.48**	**0.41**	**0.06**	**Agree**

Table 2 displays the digital literacy levels of elementary teachers categorized by gender. Both male and female teachers reported mean scores verbally interpreted as Agree, indicating a general perception of being digitally literate and competent in using technology for teaching-related tasks. Notably, female teachers achieved a higher mean score (M = 3.52, SD = 0.39) compared to male teachers (M = 3.21, SD = 0.45), suggesting that female respondents perceive themselves as slightly more digitally literate.

The lower standard deviation for female teachers reflects a more consistent perception of digital literacy within this group. In contrast, the greater variation among male teachers suggests greater diversity in confidence, access to, or experience with digital tools in instructional practice. This pattern aligns with the concept of teacher digital competence and ICT self-efficacy. Gudmundsdottir and Hatlevik emphasize that professional digital competence is closely linked to ICT self-efficacy and the quality of technology preparation during teacher education. Similarly, Hatlevik and Hatlevik found that teachers' ICT self-efficacy correlates with their actual use of ICT in teaching, implying that confidence in using digital tools influences the integration of ICT into instruction. Therefore, the higher mean among females may reflect greater perceived readiness and familiarity with educational technologies.

Nevertheless, gender should not be considered the sole factor influencing digital literacy. Other elements, such as previous ICT training, access to devices, teaching roles, institutional support, collegial collaboration, and opportunities for professional development, play a significant role in shaping teachers' digital competence. Trust and Whalen emphasize that readiness for technology-supported teaching, particularly during emergency remote instruction, is more influenced by training and support structures than by demographic variables alone. This aligns with data indicating a continuous need for ICT skill development and resource availability to enhance the use of instructional technology (Tavares et al., 2024).

Given the small sample size of male teachers (n = 6) relative to female teachers (n = 44), these findings should be interpreted as descriptive rather than definitive evidence of gender differences. Inferential statistical testing is necessary to confirm any significant gender effects. Overall, the results underscore the importance of continuous, gender-responsive, and needs-based professional development programs to enhance digital literacy, ICT confidence, and the integration of technology into pedagogy among all elementary teachers.

Table 3. Independent Samples t-Test on Teachers' Digital Literacy by Gender

Test Assumption	Levene's F	Levene's p	t	df	Mean Difference	SE Difference	p-value	Decision
Equal variances assumed	0.015	0.903	-1.781	48	-0.310	0.174	0.081	Not significant

Table 3 presents the results of the independent-samples t-test comparing digital literacy levels between male and female elementary teachers. Levene's test indicated equal variances, F = 0.015, p = 0.903, allowing the use of the equal variances assumed row for interpretation.

The t-test revealed no statistically significant difference in digital literacy between genders, t(48) = -1.781, p = 0.081. Since the p-value exceeds the 0.05 threshold, gender does not appear to affect digital literacy in this sample significantly. Although descriptive statistics (Table 2) showed females had a higher mean score, this difference was not statistically significant.

These findings suggest that gender is not a primary factor influencing digital literacy among elementary teachers. Instead, factors such as ICT training, access to technology, institutional support, pedagogical preparedness, and confidence in using digital tools likely play a more critical role. This aligns with the emphasis on both individual and school readiness for integrating educational technology, as well as with Voogt et al.'s perspective that effective integration relies on the alignment of technological, pedagogical, and content knowledge, rather than solely on demographic variables (Khan & Gul, 2022).

Supporting literature also suggests that there are minimal or no significant gender differences in teachers' digital competence. For instance, under similar learning conditions, no significant gender gap was reported in digital literacy skills, and comparable results were found regarding perceived digital skills (Bipasha et al., 2025).

However, caution is advised given the relatively small number of male participants compared with females. The absence of statistical significance does not definitively rule out gender differences; rather, it indicates insufficient evidence within this dataset. It is crucial to consider instructional and contextual factors—such as access, curriculum demands, resources, and implementation conditions—when understanding teachers' use of technology (Ansari et al., 2024).

Moreover, these results advocate for equitable professional development in digital literacy for all teachers. Rather than tailoring interventions based on gender, schools should prioritize enhancing teachers' ICT confidence, pedagogical application of technology, access to digital resources, and ongoing training opportunities.

Table 4. Relationship Between Technology-Integrated Teaching Strategies and Teachers' Digital Literacy

Variables Correlated	N	Pearson's *r*	*p*-value	Coefficient of Determination (r^2)	Interpretation	Decision
Technology-Integrated Teaching	50	0.756**	< .001	0.571	Strong positive relationship	Significant

Strategies and Teachers' Digital Literacy

Table 4 shows the Pearson product-moment correlation between technology-integrated teaching strategies and teachers' digital literacy levels. The analysis revealed a strong, positive, and statistically significant correlation ($r(48) = 0.756$, $p < .001$), indicating that teachers who frequently employ technology-integrated teaching strategies tend to have higher digital literacy.

The observed positive correlation indicates a reciprocal relationship in which increased integration of digital tools in teaching, evaluation, communication, classroom management, and student engagement boosts teachers' confidence, skills, and familiarity with digital technologies. This is consistent with the framework, which highlights that teachers' digital competence is strongly connected to their capacity to effectively use digital technologies for teaching, learning, assessment, professional involvement, and learner empowerment (Kiryakova & Kozhuharova, 2024).

The robustness of this connection also underscores that digital literacy extends beyond mere technical skills, encompassing pedagogical expertise. Digitally literate teachers are better equipped to choose, modify, and apply digital tools to achieve educational objectives. This viewpoint is reinforced by those who emphasize that successful integration of educational technology depends on perceived skills, beliefs, access to resources, school goals, leadership support, and professional collaboration (Knezek et al., 2024). Similarly, a strong link was found between teachers' pedagogical beliefs and their use of technology, highlighting that effective integration is contingent upon teachers' comprehension and application of technology in teaching (Opre, 2022).

However, this correlation should not be interpreted causally. The strong association does not imply that technology-integrated teaching strategies cause higher digital literacy or vice versa. Instead, it indicates a concurrent positive relationship likely influenced by additional factors such as ICT training, school support, device availability, internet access, leadership encouragement, and prior experience. Trust and Whalen highlighted the challenges teachers faced with technology-supported teaching during the pandemic, stemming from gaps in training and preparation. They emphasized the role of institutional support and professional development.

This caution is echoed by those who argue that technology integration should be assessed not just by its frequency or presence, but by considering the quality, context, and pedagogical intent of digital tool application (Glotzbach et al., 2025). Therefore, despite the strong correlation, the educational impact of technology integration hinges on its meaningful alignment with learning objectives, student needs, and classroom realities.

Consequently, the null hypothesis that there is no significant relationship between technology-integrated teaching strategies and teachers' digital literacy is rejected,

supporting the alternative hypothesis of a significant positive relationship. These findings suggest that schools should enhance teachers' digital literacy through ongoing professional development, practical ICT training, mentoring, and institutional support, as improving digital competence may bolster effective technology integration in elementary education.

DISCUSSION

Technology-integrated teaching strategies and digital literacy among elementary teachers are closely linked, as evidenced by the strong positive correlation observed in this study. This relationship underscores a reciprocal dynamic where frequent engagement with digital instructional methods enhances teachers' digital competence, which in turn facilitates more effective and confident use of technology in educational settings. Conceptually, this finding situates digital literacy not merely as a technical skill set but as a pedagogical asset integral to contemporary teaching practice, reflecting a shift in teacher roles toward digitally empowered facilitators of learning.

This synthesis aligns with and extends existing frameworks such as DigCompEdu, which conceptualize digital competence as encompassing not only the operational use of technology but its strategic application across teaching, assessment, and learner engagement. Unlike prior studies that often treat digital literacy and technology use as discrete variables, the present findings highlight their co-evolution, suggesting that the pedagogical integration of technology and digital skill development is a mutually reinforcing process. This perspective nuances earlier models by emphasizing the bidirectionality of this relationship and the embeddedness of digital literacy within instructional practice rather than as an isolated competency.

The mechanisms underlying this association reflect complex socio-institutional and psychological factors. Teachers' confidence and competence in digital environments are likely shaped by access to ICT resources, institutional support structures, and professional development opportunities that foster both skill acquisition and pedagogical innovation. The pandemic's disruption further exposed gaps in training and resource availability, underscoring the critical role of systemic support to enable meaningful technology integration. Additionally, teachers' pedagogical beliefs and their alignment with school goals and leadership priorities appear pivotal in mediating the translation of digital literacy into effective instructional strategies, indicating that technology adoption is as much a cultural and organizational phenomenon as a technical one.

Epistemologically, these findings advance the field by reinforcing the conceptualization of digital literacy as an integrative, practice-oriented competence rather than a static attribute. This reorientation challenges traditional dichotomies between technical skills and pedagogical knowledge, advocating models that capture the dynamic interplay among teacher beliefs, institutional context, and digital tool use. In practice, the study offers actionable insights: professional development initiatives should prioritize contextualized, hands-on ICT training, combined with mentoring and leadership engagement, to cultivate teachers' digital confidence and pedagogical adaptability.

Policymakers and school administrators are thus encouraged to adopt holistic strategies that address resource provision, capacity building, and cultural readiness to maximize technology's educational impact.

Nevertheless, the study's scope delineates important boundary conditions. The strong correlation observed is concurrent rather than causal, constrained by the study's cross-sectional design and the specific socio-educational context of Kawmpang Elementary School in the Philippines. The relatively small and gender-imbalanced sample limits the generalizability of findings across diverse educational settings and demographic compositions. Future research should pursue longitudinal and experimental designs to disentangle causal pathways and explore how varying levels of institutional support and cultural contexts modulate the digital literacy–technology integration nexus. Expanding inquiry into the qualitative dimensions of technology use, such as instructional quality and learner outcomes, will further enrich understanding and guide the development of nuanced, scalable interventions.

Conclusions

This study establishes that technology-integrated teaching strategies are no longer peripheral enhancements to elementary instruction; they constitute a critical pathway for teachers to develop the digital competencies required for contemporary basic education. The evidence underscores a central educational truth: digital literacy among teachers is strengthened not through isolated technical exposure, but through sustained, purposeful, and pedagogically aligned use of technology in classroom practice. Technology becomes meaningful when it supports lesson delivery, learner engagement, assessment, communication, professional confidence, and instructional adaptability.

The study advances the existing body of knowledge by positioning teachers' digital literacy as a pedagogical capacity rather than a purely technical skill. It closes an important gap by demonstrating that the relationship between technology use and digital literacy is embedded in instructional practice, institutional conditions, and professional confidence, not merely in demographic characteristics such as gender. Without making causal claims, the findings refine current understandings of technology integration by emphasizing that digital competence develops within a broader ecosystem of access, readiness, support, and pedagogical intentionality.

Consequently, basic education institutions must move beyond sporadic ICT training and adopt a more systematic digital capacity-building agenda. Schools should institutionalize continuous professional development, peer mentoring, technical support, access to reliable digital resources, and leadership-driven policies that enable teachers to integrate technology with a clear instructional purpose. Evaluation systems should also shift from measuring the mere presence of technology to assessing the quality of its pedagogical use, its alignment with learning objectives, and its contribution to teacher competence and classroom transformation.

The future of digital literacy in basic education must therefore be framed as a matter of instructional governance, not simply technological adoption. From this baseline, the field must move toward integrated models that connect teacher digital competence,

pedagogical design, institutional leadership, and learner outcomes, thereby transforming technology integration from an optional classroom practice into a strategic foundation for educational quality, equity, and future-ready teaching.

Recommendations

Based on the findings of the study, the recommendations were drawn out to enhance and improve the mandating processes, specifically on:

1. Increase the number of participants to ensure more reliable findings.
2. Establish a relationship with the Department of Education for a more systematic approach to the findings of the study.
3. Explore other institutions of learning for more information.
4. Encourage future researchers to build a relationship with the ICT department to build significant skills among teachers.
5. Study on the negative impact of technology on the learners of the surveyed teachers.

Compliance with Ethical Standards

The authors declare that they have no conflict of interest regarding the publication of this paper. This study was conducted in accordance with ethical standards and principles. Informed consent was obtained from all participants, and their confidentiality and anonymity were strictly maintained. No harm was inflicted on the participants, and all data collected were used solely for academic and research purposes.

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