

# Educational Technology Proficiency and Classroom Integration: A Profile-Based Analysis of Public School Teachers

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## ABSTRACT

This study assessed the level of educational technology (EdTech) proficiency and its integration into classroom practices among public school teachers in Teachers of San Miguel 1 District", San Miguel, Surigao del Sur. Using a quantitative descriptive research design, the study examined teachers' profiles in terms of age, gender, position, highest educational attainment, length of service, and EdTech-related training. It further determined the level of EdTech proficiency across four domains: digital literacy, integration of technology into the curriculum, capability to use technology, and enhancement of digital competencies. In addition, the study evaluated the extent of EdTech integration in classroom practices based on Results-Based Performance Management System (RPMS) indicators, including lesson exemplars, technologically enhanced class activities, assessment practices, and student feedback.

Data were gathered through a structured survey questionnaire administered to all teachers in the school using total enumeration sampling. The results revealed that respondents generally demonstrated a proficient level of EdTech competence and integration, with the highest level observed in curriculum integration and lesson exemplars. However, assessment technology integration emerged as the lowest area, indicating a gap in the use of digital tools for evaluating student learning. These findings suggest that while teachers are capable of integrating technology in instruction, there is a need to strengthen their competencies in digital assessment and advanced applications of EdTech.

Based on the findings, an intervention plan (Project i-TEACH) was proposed to enhance teachers' digital skills, promote continuous professional development, and improve the overall quality of technology integration in teaching. The study highlights the importance of sustained training, mentoring, and institutional support in advancing effective and meaningful use of educational technology.

**Keywords:** EdTech proficiency, technology integration, RPMS, digital literacy, public school teachers

## INTRODUCTION

This study examines how public school teachers' characteristics relate to their ability to use and integrate educational technology in classroom practice. In the context of increasing demands for technology-driven instruction, it aims to assess the level of EdTech proficiency among teachers and how this proficiency is reflected in their actual teaching performance aligned with the Results-Based Performance Management System (RPMS). Specifically, it investigates the profile of respondents in terms of age, gender, position, highest educational attainment, length of service, and trainings attended related to EdTech; determines their level of proficiency in digital literacy, integration of technology into the curriculum, capability to use technology, and enhancement of digital competencies; and examines the extent of EdTech integration in lesson exemplars, technologically enhanced class activities, assessment practices, and student feedback. Through this, the study seeks to provide a comprehensive understanding of teachers' readiness and capacity to effectively utilize educational technology in improving teaching and learning outcomes.

Various studies have emphasized the critical role of educational technology (EdTech) proficiency in enhancing teaching effectiveness and improving student learning outcomes. Existing literature suggests that teachers'

ability to integrate technology is influenced by a combination of their digital literacy, pedagogical knowledge, and access to professional development opportunities. For instance, Mishra and Koehler (2006) highlighted through the Technological Pedagogical Content Knowledge (TPACK) framework that effective technology integration occurs when teachers can meaningfully connect content, pedagogy, and technology. Similarly, Ertmer and Ottenbreit-Leftwich (2010) argued that teachers' beliefs, confidence, and competence significantly affect their willingness to adopt and sustain technology use in the classroom. In addition, studies by Tondeur et al. (2017) and Instefjord and Munthe (2017) revealed that continuous training and exposure to digital tools are essential in developing teachers' competence and readiness for technology integration. Moreover, research has shown that demographic and professional factors such as age, teaching experience, and educational attainment also shape teachers' adoption of EdTech, with younger and more professionally developed teachers often demonstrating higher levels of engagement with digital tools (OECD, 2019). These findings collectively underscore the importance of strengthening teachers' technological and pedagogical capacities to ensure effective and meaningful integration of EdTech in classroom instruction.

Despite the growing body of literature on educational technology integration, there remains a significant gap in understanding how EdTech proficiency translates into actual classroom practice in specific local contexts, particularly in rural and technology-challenged schools. While existing studies have examined general trends in teachers' digital competence, limited research has focused on how teachers' profiles influence both their level of proficiency and their alignment with performance-based standards such as RPMS. In the case of Bolhoon Elementary School in San Miguel, Surigao del Sur, challenges such as limited access to digital resources, unstable internet connectivity, and insufficient continuous training may affect teachers' ability to fully integrate technology into their instructional practices. Moreover, there is a lack of localized empirical evidence that captures the interplay between teachers' demographic and professional characteristics, their EdTech proficiency, and their actual classroom integration of technology. This gap highlights the need for context-specific analysis to better understand the realities faced by teachers in Bolhoon Elementary School and to generate data-driven insights that can inform targeted interventions and policy decisions.

This study is significant as it directly addresses the identified gap by providing a localized and evidence-based analysis of teachers' EdTech proficiency and its actual integration in classroom practices within Bolhoon Elementary School, San Miguel, Surigao del Sur. By examining how teachers' profiles relate to their technological competence and alignment with RPMS indicators, the study offers a clearer understanding of the strengths and areas for improvement in technology integration in a rural school context. The findings can serve as a basis for designing targeted intervention programs, capacity-building initiatives, and context-responsive training that address specific needs rather than relying on generalized approaches. Moreover, the study contributes to school administrators, policymakers, and stakeholders by providing data that can guide resource allocation, professional development planning, and policy formulation aimed at improving instructional quality. Ultimately, this research supports the broader goal of enhancing teaching effectiveness and ensuring that learners, even in technology-challenged environments, benefit from meaningful and equitable integration of educational technology.

## Statement of the Problem

This study aims to examine the level of educational technology (EdTech) proficiency and its integration into classroom practices among public school teachers, particularly within the framework of the Results-Based Performance Management System (RPMS). Specifically, it aims to answer the following questions:

1. What is the profile of respondents in terms of:
  - 1.1 age;
  - 1.2 gender;
  - 1.3 position;
  - 1.4 highest educational attainment;
  - 1.5 length of service; and
  - 1.6 trainings attended related to EdTech?

2. What is the level of EdTech proficiency among respondents in terms of:

- 2.1 digital literacy;
- 2.2 integration of technology to the curriculum;
- 2.3 capability to use technology;
- 2.4 to enhance digital competencies?

3. What is the level of EdTech integration to RPMS rating in terms of:

- 3.1 technology used in lesson exemplars;
- 3.2 technologically enhanced class activities;
- 3.3 assessment technology integration; and
- 3.4 feedback of students?

4. Based on the findings of the study, what intervention plan can be proposed?

## RESEARCH METHODOLOGY

This study employed a quantitative research design, specifically utilizing a descriptive survey approach. This design is appropriate because the study aims to describe and assess the respondents' profile, determine their level of EdTech proficiency, and examine the extent of technology integration in classroom practices based on RPMS indicators. A descriptive design allows the researcher to systematically gather quantifiable data and present an accurate picture of existing conditions without manipulating any variables (Creswell & Creswell, 2018). It is particularly suitable for studies that focus on profiling respondents and measuring levels of competencies and practices.

The respondents of the study were public school teachers of San Miguel 1 District, San Miguel, Surigao del Sur. These teachers were selected as they are directly involved in classroom instruction and are expected to integrate educational technology in their teaching practices. Their experiences and competencies provide relevant data in assessing EdTech proficiency and integration in a real classroom setting.

The locale of the study was San Miguel, Surigao del Sur, a public elementary schools situated in a rural area of San Miguel, Surigao del Sur. The school represents a technology-challenged environment where access to digital resources and infrastructure may be limited, making it an appropriate setting for examining the realities of EdTech integration in public schools.

The study utilized a total enumeration sampling method, wherein all teachers in the school were included as respondents. This approach ensures that the data gathered represent the entire population of interest, thereby increasing the reliability and comprehensiveness of the findings.

For the statistical treatment of data, descriptive statistics were used. Specifically, frequency and percentage were employed to describe the respondents' profile, while weighted mean was used to determine the level of EdTech proficiency and the extent of technology integration in RPMS indicators. These statistical tools are appropriate for summarizing and interpreting quantitative data in descriptive studies.

The data gathering procedure began with securing permission from the school head to conduct the study. After approval, the researcher distributed a structured questionnaire to the respondents. The instrument consisted of two parts: the first part gathered demographic information, while the second part measured EdTech proficiency and classroom integration using a Likert scale. The questionnaires were administered personally to ensure clarity of instructions and were retrieved after completion. The collected data were then encoded, organized, and analyzed using appropriate statistical tools.

One limitation of the study is its focus on a single school, which may limit the generalizability of the findings. Future studies are encouraged to include multiple schools or districts to provide a broader and more representative analysis of EdTech integration practices.

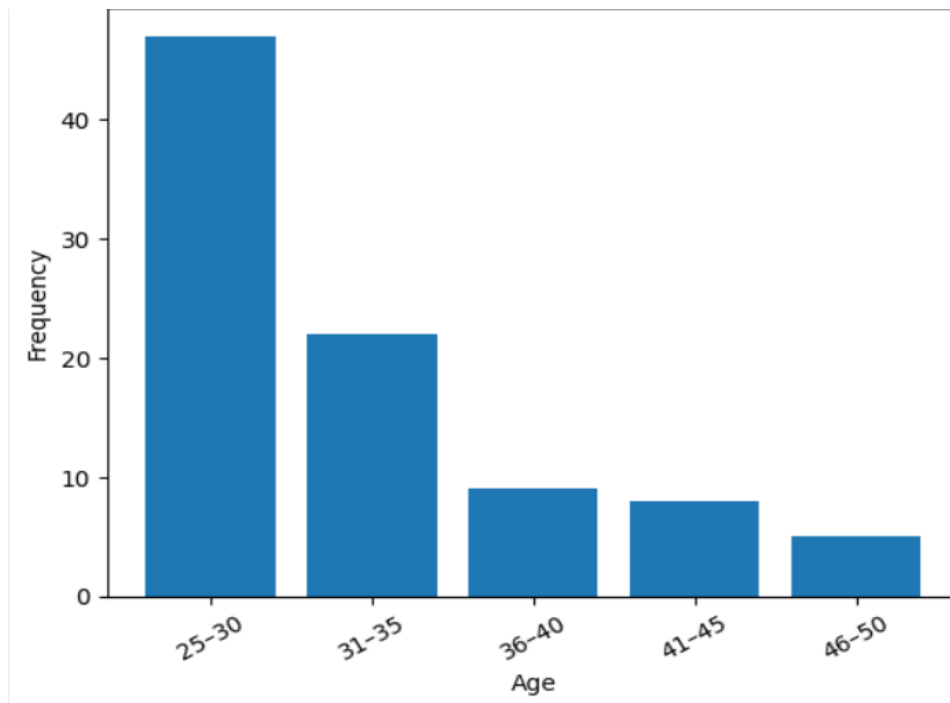
Further a limitation of this study is the exclusive use of a quantitative approach, which may not fully capture the lived experiences and contextual realities of teachers in integrating educational technology. Future studies may adopt a mixed-methods design to provide deeper and more comprehensive insights.

In conducting the study, ethical considerations were strictly observed. Participation of respondents was voluntary, and informed consent was obtained prior to data collection. Respondents were assured of the confidentiality and anonymity of their responses, and all information gathered was used solely for academic purposes. The study adhered to the principles of respect, beneficence, and confidentiality to protect the rights and welfare of the participants

## RESULTS AND DISCUSSION

This section presents the results, analysis, and interpretation of the data gathered from the respondents of the study. The findings are organized and discussed in accordance with the sequence of the research questions stated in the Statement of the Problem.

Figure 1. Profile of the Respondents as to Age

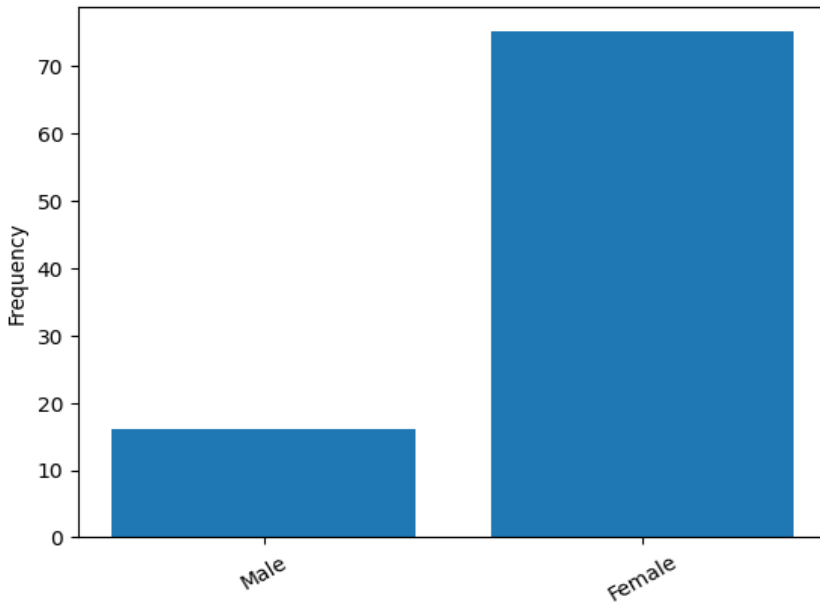


The figure shows the age distribution of the respondents, revealing that most teachers fall within the 25–30 years old bracket (47 respondents), followed by those aged 31–35 years (22 respondents). Only a small proportion belongs to older age groups, with 36–40 (9), 41–45 (8), and 46–50 (5). This indicates that the teaching workforce in the study is predominantly young and early in their professional careers.

This pattern suggests that many respondents are likely digitally inclined and more adaptable to educational technology (EdTech), as younger teachers are often more exposed to digital tools and innovations. Studies have shown that younger educators tend to demonstrate higher confidence and openness in integrating technology into instruction due to greater familiarity and prior exposure (Tondeur et al., 2017; Instefjord & Munthe, 2017). However, being early-career professionals, they may still require structured guidance, mentoring, and pedagogical support to effectively translate technological skills into meaningful classroom practices.

The dominance of younger teachers presents a strong opportunity for successful EdTech integration initiatives. Schools and policymakers can leverage this demographic advantage by providing targeted capacity-building programs, such as hands-on training, coaching, and collaborative learning communities. At the same time, sustained professional development is essential to ensure that technological familiarity evolves into pedagogically sound and student-centered instruction, rather than superficial use of digital tools.

Figure 2. Profile of the Respondents as to Gender

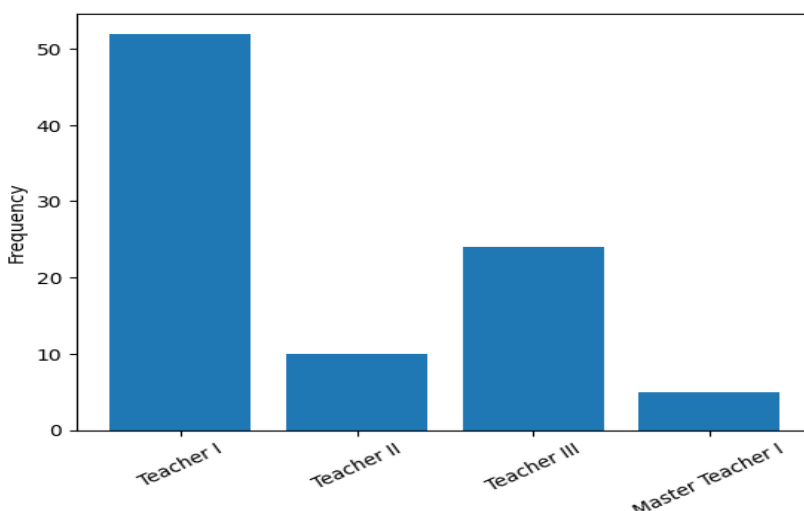


The figure presents the gender distribution of the respondents, showing a clear predominance of female teachers (75) compared to male teachers (16). This indicates that the teaching workforce in the study is female-dominated, which is consistent with broader trends in basic education, particularly in elementary levels where women constitute most educators.

This distribution suggests that the teaching environment is largely shaped by female educators, who are often recognized for strong communication skills, collaborative tendencies, and nurturing approaches to teaching. Research indicates that gender does not necessarily limit technological capability; in fact, female teachers have been found to demonstrate positive attitudes toward technology integration, especially when they perceive its relevance to teaching and learning (Jatileni et al., 2024; Scherer et al., 2021). Thus, the dominance of female respondents does not imply a disadvantage in EdTech adoption but may instead support effective implementation when combined with proper training and institutional support.

The results imply that professional development programs on EdTech should be designed to leverage the strengths of a predominantly female teaching workforce, particularly in areas of collaboration, peer mentoring, and shared learning communities. Since gender was not shown to be a limiting factor in technology use, interventions should focus more on capacity-building, access to resources, and continuous training rather than demographic differences. Additionally, fostering inclusive participation of male teachers in training and leadership roles may help ensure balanced perspectives in technology integration initiatives.

Figure 3. Profile of the Respondents as to Position Distribution

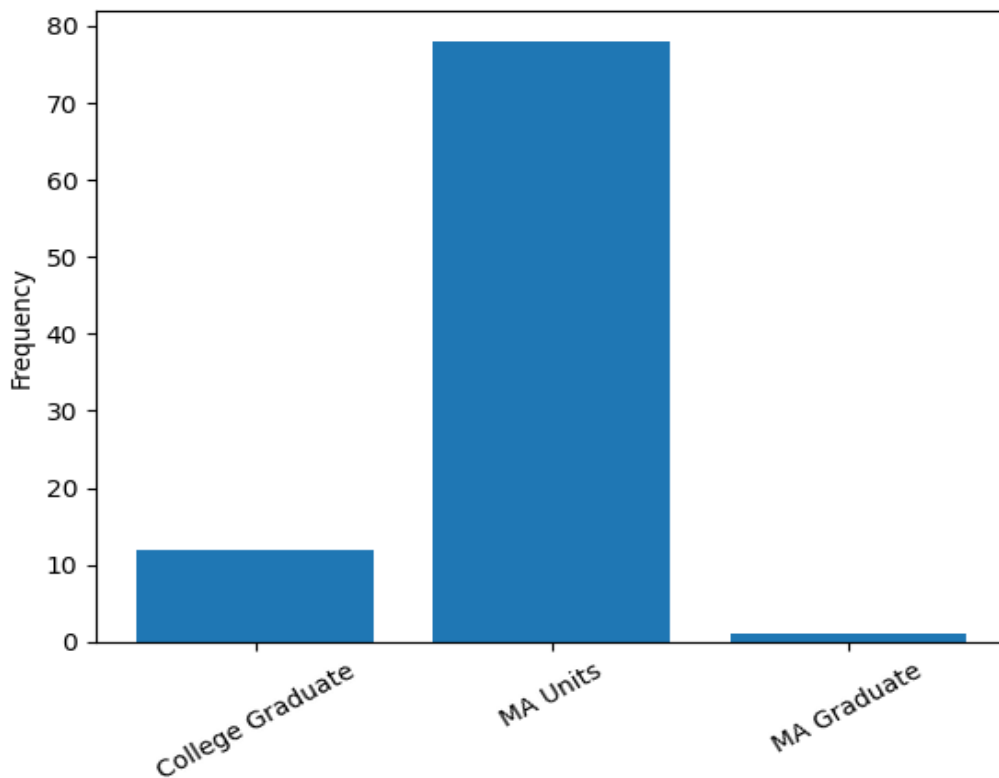


The figure illustrates the position distribution of the respondents, showing that the majority are Teacher I (52), followed by Teacher III (24), Teacher II (10), and a small number of Master Teacher I (5). This indicates that most respondents are in the entry-level teaching position, with fewer teachers occupying higher-ranked or leadership roles. This pattern suggests that the workforce is largely composed of early-career educators, who are typically in the process of developing their instructional competencies and professional identity. Research highlights that teachers in the early stages of their careers tend to be more open to innovation and receptive to new teaching approaches, including the integration of educational technology (EdTech). However, they may still require structured guidance to effectively apply these innovations in classroom practice (Darling-Hammond et al., 2017).

The relatively small number of Master Teachers also implies limited availability of in-school mentors or instructional leaders who can provide coaching and technical support, particularly in specialized areas such as EdTech integration. Studies emphasize that mentorship and instructional leadership play a critical role in enhancing teaching quality and facilitating the adoption of innovative practices (Kraft et al., 2018).

The findings suggest a strong need for structured mentoring and capacity-building programs, where experienced teachers (e.g., Master Teachers) are strategically engaged to support less experienced teachers. Schools should strengthen professional learning communities (PLCs), peer coaching, and leadership development programs to ensure that early-career teachers are guided in translating their technological skills into effective pedagogical practices. Additionally, investing in leadership roles and instructional support systems can enhance the overall quality and sustainability of EdTech integration in schools.

Figure 4. Profile of the Respondents as to Educational Attainment



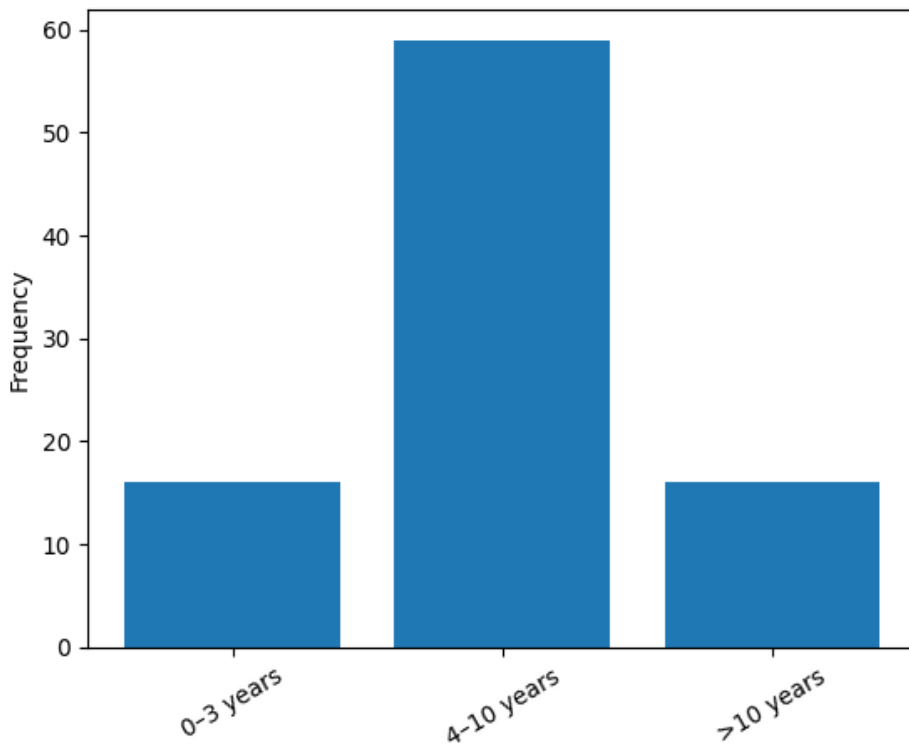
The figure presents the educational attainment of the respondents, showing that the majority are with MA units (78), followed by college graduates (12), and only a very small number are MA graduates (1). This indicates that most teachers have pursued graduate studies but have not yet completed their master's degree.

This pattern reflects a workforce that is academically advancing but still in transition toward higher qualifications. The high number of teachers with MA units suggests strong motivation for professional growth and compliance with DepEd and professional standards, which encourage continuous learning and graduate education. However, the very low number of completed MA degrees may indicate barriers such as time constraints, financial limitations, workload, or lack of institutional support, which hinder completion.

Research shows that higher educational attainment is associated with enhanced pedagogical knowledge, critical thinking, and more effective integration of technology in teaching (Guskey, 2002; Darling-Hammond et al., 2017). Teachers who complete graduate programs are more likely to apply research-based strategies and demonstrate deeper instructional competence, including the meaningful use of EdTech.

The findings highlight the need for institutional support systems to help teachers complete their graduate degrees, such as scholarship programs, flexible study arrangements, reduced teaching loads, or incentives for degree completion. Supporting teachers in finishing their MA programs can significantly enhance their instructional quality, leadership capacity, and ability to integrate technology effectively. This, in turn, can contribute to improved student learning outcomes and stronger overall school performance

Figure 5. Profile of the Respondents as to Length of Service



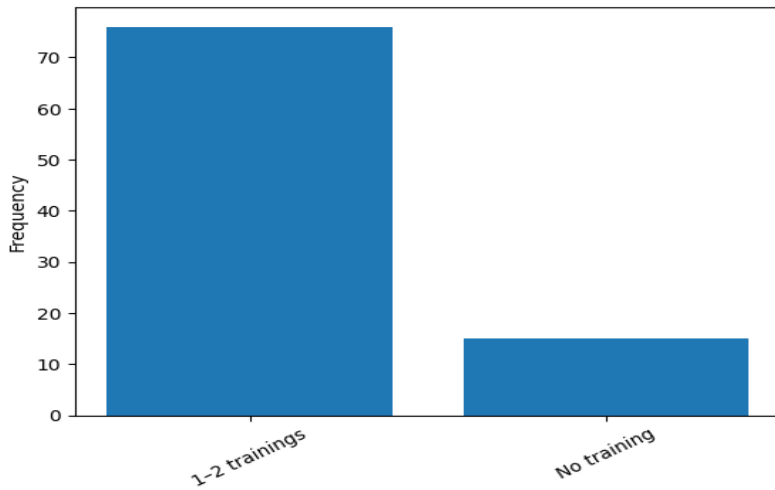
The figure shows the length of service distribution of the respondents, where the majority of teachers fall within the 4–10 years of service (59 respondents). In contrast, smaller but equal groups are observed among those with 0–3 years (16) and more than 10 years (16). This indicates that the teaching population is largely composed of mid-career educators, with fewer novice and highly experienced teachers.

This pattern suggests a workforce that has already gained substantial classroom experience while still maintaining a degree of adaptability and openness to innovation. Mid-career teachers are often at a stage where they have developed confidence in their teaching practices and are more capable of integrating new strategies, including educational technology (EdTech), into their instruction. Research supports that teachers in this stage tend to balance experience and flexibility, making them more effective in adopting and sustaining innovative practices (Day & Gu, 2007; OECD, 2019).

Meanwhile, the presence of early-career teachers highlights the need for mentoring and foundational skill development, while those with more than 10 years of service may require continuous upskilling, especially in digital competencies, to remain aligned with evolving educational demands.

The results imply that professional development initiatives should be differentiated. Mid-career teachers can be tapped as key implementers or champions of EdTech integration, while novice teachers should receive structured mentoring and guidance. Experienced teachers, on the other hand, may benefit from targeted training programs that update their technological skills. A balanced approach that supports all experience levels can strengthen overall teaching effectiveness and promote sustainable integration of technology in education.

Figure 6. Profile of the Respondents as to Trainings attended related to EdTech



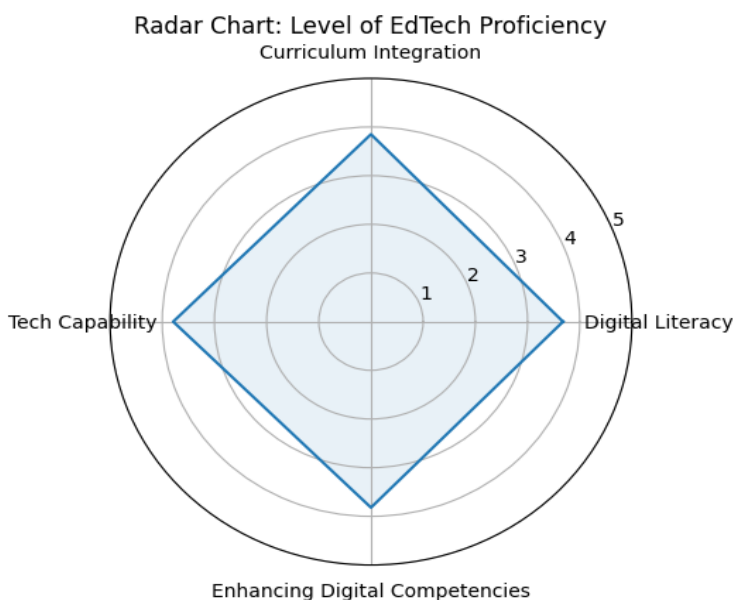
The figure presents the distribution of respondents based on EdTech-related trainings attended, showing that the majority of teachers have attended 1–2 trainings (76 respondents), while a smaller group (15 respondents) reported having no training at all. This indicates that most teachers have had some exposure to professional development in educational technology, although the frequency remains relatively limited.

This pattern suggests that while access to EdTech training exists, it may be infrequent or not sustained, which can limit the depth of teachers’ technological and pedagogical competencies. Attending only one or two trainings per year may not be sufficient for developing mastery, especially given the rapidly evolving nature of digital tools in education. Research emphasizes that effective technology integration requires continuous, hands-on, and context-specific professional development, rather than one-time or sporadic training sessions (Desimone & Garet, 2015; Darling-Hammond et al., 2017).

The presence of teachers with no training also highlights a gap in inclusivity and access to capacity-building opportunities, which may contribute to disparities in EdTech proficiency and classroom implementation.

The findings imply a need to strengthen sustained and structured professional development programs in EdTech. Schools and education leaders should move beyond one-shot training and implement continuous learning models, such as coaching, mentoring, learning action cells (SLAC), and follow-up support. Additionally, efforts must be made to ensure that all teachers, including those who have not yet attended training, are given equal access to professional development opportunities. Strengthening training programs can significantly enhance teachers’ competence, confidence, and consistency in integrating technology into teaching and learning.

Figure 7. The level of EdTech Proficiency among Respondents



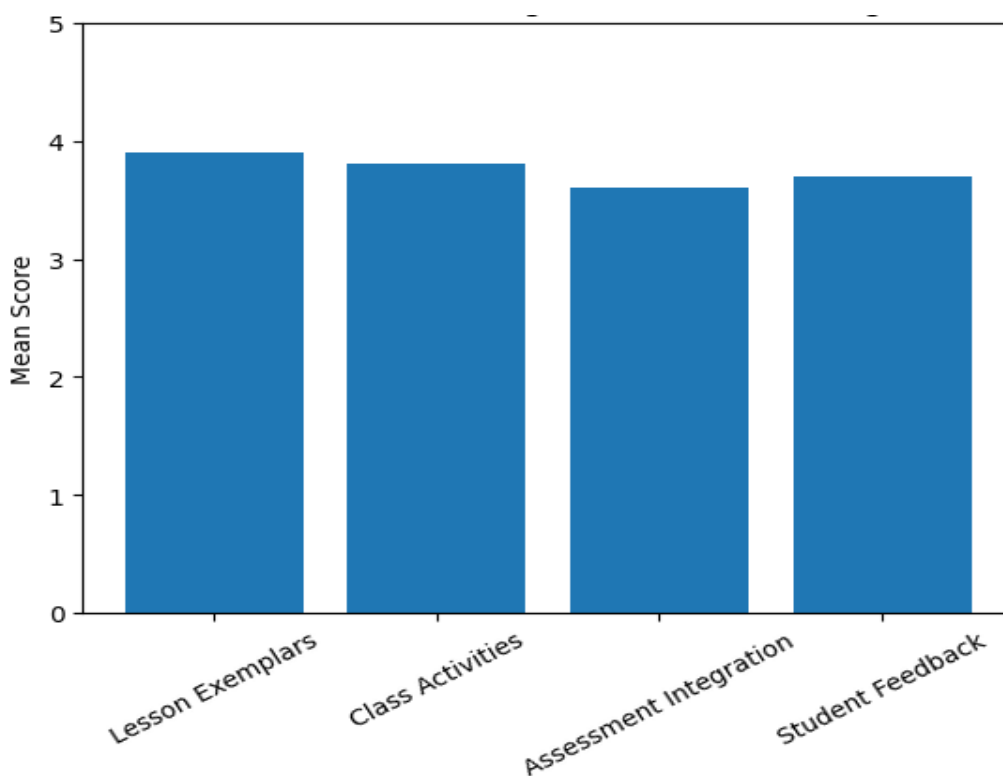
The radar chart illustrates the level of EdTech proficiency among respondents across four key domains: digital literacy, curriculum integration, technology capability, and enhancing digital competencies. All indicators fall within a relatively close range (approximately 3.6 to 3.9), indicating an overall “proficient” level of competence among the teachers.

Among the four domains, integration of technology into the curriculum shows the highest value, suggesting that teachers are more confident in embedding technology into lesson planning and instructional delivery. This implies that respondents are not only familiar with digital tools but are able to align them with pedagogical goals. Meanwhile, digital literacy appears slightly lower compared to the other domains, indicating a potential gap in foundational or advanced technical skills. The indicators for technology capability and enhancing digital competencies are also within the proficient range, reflecting that teachers can operate digital tools and support student learning through technology, although there is still room for improvement.

The relatively balanced shape of the radar chart suggests that teachers possess a well-rounded but moderately developed EdTech proficiency, rather than having extreme strengths or weaknesses in any one area. This aligns with the idea that teachers are generally capable of integrating technology but may not yet demonstrate mastery or highly advanced application.

The findings imply that while teachers are already functioning at a proficient level, there is a need to move toward higher levels of expertise, particularly in strengthening digital literacy as a foundational skill. Professional development programs should focus on deepening technical skills alongside pedagogical integration, ensuring that teachers can maximize the use of technology in more innovative and transformative ways. Continuous, hands-on, and context-based training—such as coaching, mentoring, and collaborative learning (e.g., SLAC sessions)—can help elevate proficiency from functional use to strategic and student-centered application. Strengthening these competencies will contribute to more effective teaching practices and improved learner outcomes.

Figure 8. The level of EdTech Integration to RPMS Rating



The chart presents the level of EdTech integration in RPMS rating across four indicators: technology used in lesson exemplars, technologically enhanced class activities, assessment technology integration, and student feedback. All indicators fall within a narrow range of approximately 3.6 to 3.9, which corresponds to a “proficient” level of integration.

Among the four areas, technology used in lesson exemplars registers the highest mean score, indicating that teachers are most consistent in integrating digital tools during lesson planning and instructional delivery. This suggests that technology is already embedded in the preparation phase of teaching. Technologically enhanced class activities and student feedback also show relatively high levels, reflecting that teachers are incorporating digital tools to engage learners and gather responses, although not at a highly advanced level. In contrast, assessment technology integration has the lowest mean, implying that teachers are less confident or less consistent in using technology for evaluating student learning, such as through digital assessments, analytics, or automated feedback systems.

The overall pattern suggests that while teachers are capable of integrating technology in instructional and engagement-related aspects, assessment remains a weaker area, which is consistent with existing literature that identifies digital assessment as one of the more complex components of EdTech integration.

The findings imply that teachers have reached a functional level of EdTech integration, particularly in lesson delivery and classroom interaction, but there is a need to strengthen their capacity in technology-based assessment practices. Schools and educational leaders should prioritize training on digital assessment tools, data-driven instruction, and feedback systems, as these are critical for improving learning outcomes and aligning with RPMS standards. Continuous professional development, particularly in designing and implementing digital assessments, can help teachers move from basic to more advanced and transformative use of technology in education.

### **Intervention Plan**

Based on the findings of the study, the proposed intervention plan, Project i-TEACH, is expected to produce meaningful improvements in teachers' use of educational technology in the classroom. Specifically, the output of the program includes a group of teachers who are more competent in digital literacy, more confident in integrating technology into lesson planning and classroom activities, and more capable of utilizing digital tools for assessment and student feedback.

Through structured training, mentoring, and continuous professional development activities such as SLAC sessions, teachers are expected to develop technology-enhanced lesson exemplars, interactive class activities, and data-driven assessment tools aligned with RPMS indicators. In addition, the program will generate contextualized digital instructional materials and strengthen collaborative practices among teachers.

Overall, the intervention is designed to transform teachers from basic users of technology into more strategic and effective practitioners, ultimately leading to improved instructional quality and enhanced student learning outcomes.

### **CONCLUSIONS**

Based on the findings of the study, it can be concluded that public school teachers demonstrate a generally proficient level of educational technology (EdTech) competence and classroom integration, indicating that they are capable of incorporating digital tools into teaching and learning processes. The respondents are largely composed of young to mid-career teachers, most of whom have begun pursuing graduate education and have attended at least some EdTech-related training, suggesting a workforce that is both developing professionally and open to innovation. In terms of proficiency, teachers show strength in integrating technology into the curriculum and classroom activities, while digital literacy and assessment technology integration remain relatively weaker areas, pointing to the need for deeper technical and pedagogical skill development.

Furthermore, the findings reveal that while technology is already being utilized in lesson delivery and student engagement, its application in assessment and feedback practices is less consistent, indicating a gap in more advanced and data-driven uses of EdTech. Overall, the study affirms that teachers possess the foundational competencies necessary for technology integration; however, there is still a need to move from basic or functional use toward more strategic, innovative, and transformative practices. This highlights the importance of sustained professional development, targeted training, and institutional support to further enhance teachers'

capacity and ensure more effective and meaningful integration of educational technology in improving teaching quality and student learning outcomes.

## RECOMMENDATIONS

Based on the findings of the study, it is recommended that schools strengthen sustained and structured professional development programs that integrate both technical and pedagogical aspects of EdTech, with particular focus on digital literacy and technology-based assessment. Establishing mentoring and coaching systems, such as SLAC sessions, peer collaboration, and guided practice, can further support teachers in effectively integrating technology. In addition, school administrators should ensure the provision of adequate infrastructure and resources, including reliable internet access and digital tools, to facilitate implementation. Teachers should also be encouraged to pursue continuous professional development and graduate studies to enhance instructional competence.

For future research, it is recommended to explore contextual factors such as infrastructure, institutional support, and student readiness, as these significantly influence technology integration. Researchers are also encouraged to use validated instruments to improve data reliability and adopt mixed-methods approaches to gain deeper insights into teachers' experiences and challenges. Expanding the study to include multiple schools or districts will improve generalizability, while longitudinal research can assess the long-term impact of interventions such as Project i-TEACH.

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