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Research Article

# Exploring Elementary Teachers' Lived Experiences of Technology Integration in Classroom Instruction

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## Abstract

Technology integration has become an essential component of elementary education, enabling teachers to create more engaging, learner-centered, and meaningful classroom experiences. This study explored the lived experiences of elementary teachers in integrating technology into classroom instruction in selected public and private elementary schools in the Municipality of Compostela, Davao de Oro. Guided by the interpretivist paradigm, the study employed a qualitative phenomenological research design. Ten elementary teachers were purposively selected as participants. Data were gathered through semi-structured interviews and analyzed using Braun and Clarke's reflexive thematic analysis. The findings revealed that technology integration significantly benefited students by increasing engagement, confidence, independence, collaboration, and opportunities for flexible, self-paced, practical, and hands-on learning. Participants also reported that technology enhanced learners' comprehension, retention, and higher-order thinking while encouraging inquiry, creativity, and active participation in classroom activities. Teachers perceived technology as an essential pedagogical resource that strengthened learner engagement and collaboration, enhanced the overall teaching–learning process, and promoted advanced learning and idea exploration. Despite challenges related to limited technological resources and inconsistent internet connectivity, participants demonstrated instructional adaptability through purposeful pedagogical planning and learner-centered teaching strategies. The study concludes that meaningful technology integration depends on teachers' pedagogical competence, continuous professional development, institutional support, and equitable access to digital resources. The findings provide practical implications for teachers, school leaders, policymakers, and teacher education institutions in advancing sustainable and context-responsive technology integration in elementary education.

## Keywords

technology integration; elementary teachers; classroom instruction; qualitative phenomenology; educational technology; teaching practices; Philippines

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This study was conducted in accordance with ethical standards.

## INTRODUCTION

Education continues to evolve alongside rapid technological advancement, transforming not only the tools available in classrooms but also the ways teachers create meaningful learning experiences. Across the world, elementary educators are increasingly expected to integrate digital technologies into their daily instruction to foster engagement, collaboration, and learner-centered environments. Technology has demonstrated its capacity to enrich classroom interaction, support differentiated instruction, and encourage the development of essential twenty-first-century skills when thoughtfully aligned with pedagogy rather than used merely as an instructional supplement (Kimmons et al., 2020; Vogt & Westerlin, 2021). International organizations likewise emphasize that technology becomes most meaningful when teachers are adequately prepared, supported through continuous professional development, and guided by instructional goals that place learners at the center of the educational process (UNESCO, 2021; OECD, 2023). These perspectives affirm that successful technology integration depends not only on digital resources but also on the experiences, judgments, and professional growth of teachers who transform these tools into authentic learning opportunities.

Within the Philippine educational landscape, efforts to strengthen technology integration have become increasingly visible as schools respond to changing instructional demands and the digital realities experienced by today's learners. Although many elementary teachers have embraced digital tools to improve classroom engagement and instructional delivery, they continue to encounter challenges involving limited ICT resources, inconsistent internet connectivity, inadequate technical support, and insufficient professional preparation (Tortola, 2024; Guan & Despi, 2022; Reyes & Padilla, 2020). Similar realities are evident in the Municipality of Compostela, Davao de Oro, where teachers have gradually incorporated multimedia presentations, digital learning materials, and online resources into classroom instruction despite infrastructural and technological limitations. Their daily experiences reveal a continuous balancing act between innovation and practicality as they adapt instructional strategies, prepare alternative learning materials, and strive to provide meaningful learning experiences despite existing constraints. These realities highlight that technology integration is not merely a technical process but a deeply human experience shaped by the unique contexts in which teachers live and work.

Despite the growing body of literature on educational technology, much of the existing research has primarily focused on the effectiveness of digital tools, teacher competencies, or institutional readiness. While these studies provide valuable insights into technology integration, fewer investigations have explored the lived experiences of elementary teachers who continuously navigate both the opportunities and complexities of integrating technology into everyday classroom instruction, particularly within medium-sized municipalities such as Compostela. Existing literature provides limited understanding of how teachers personally interpret these experiences, overcome challenges, construct adaptive practices, and derive meaning from their technology integration journey within their specific educational context. This gap underscores the need for a phenomenological inquiry that gives voice to teachers' firsthand experiences and uncovers the realities that quantitative measures and institutional reports often fail to capture.

This study is significant because it seeks to illuminate the authentic experiences of elementary teachers whose dedication continues to shape meaningful learning in increasingly digital classrooms. By exploring their stories, struggles, adaptive strategies, and instructional insights, the study contributes a deeper understanding of technology integration as a lived educational phenomenon rather than simply a technical practice. The findings are expected to provide meaningful insights for teachers, school administrators, policymakers, and professional development providers in designing responsive support systems that strengthen technology-enhanced instruction. More importantly, the study recognizes the voices of teachers as valuable sources of knowledge whose lived experiences can inspire more context-sensitive educational policies, sustainable technology integration initiatives, and future qualitative research in elementary education.

## METHODOLOGY

### Design

The study was situated within the interpretivist paradigm, which assumes that reality is socially constructed through individuals' interactions with their social and professional environments. From this perspective, knowledge is derived from participants' interpretations of their lived experiences rather than from objective observation alone. The paradigm is appropriate for qualitative inquiry because it facilitates an in-depth understanding of how elementary teachers perceive, interpret, and assign meaning to technology integration within authentic classroom settings. By acknowledging the existence of multiple realities, the interpretivist perspective enabled the researcher to examine technology integration as a context-dependent educational phenomenon shaped by instructional practices, institutional conditions, professional beliefs, and individual experiences.

### Approach

A qualitative phenomenological approach was employed to investigate the lived experiences of elementary teachers integrating technology into classroom instruction. Phenomenology seeks to identify the essential structure of a shared experience through detailed descriptions provided by individuals who have directly encountered the phenomenon (Moustakas, 1994; Creswell & Poth, 2018). The approach was appropriate because the study aimed to understand how teachers experienced technology integration, the meanings they attributed to those experiences, the challenges they encountered, the adaptive strategies they developed, and the instructional insights they gained throughout the process. Unlike grounded theory, which aims to explain social processes, ethnography, which examines cultural practices, or case study research, which investigates bounded systems, phenomenology focuses on understanding the common essence of participants' lived experiences. Given that the objective of the present investigation was to describe and interpret teachers' experiences rather than generate theory or evaluate interventions, phenomenology provided the most appropriate methodological framework.

**Theoretical Lens**

The study was conceptually informed by the Technology Acceptance Model (Davis, 1989), which proposes that individuals' acceptance of technology is influenced primarily by perceived usefulness and perceived ease of use. Within the present investigation, the framework served as a conceptual lens for developing the interview guide and interpreting participants' narratives concerning technology integration in classroom instruction. Rather than testing the model quantitatively, the framework informed the exploration of teachers' perceptions regarding the instructional value, usability, and continued utilization of educational technologies within elementary classrooms.

**Rigor**

Methodological rigor was ensured through systematic research procedures designed to enhance the trustworthiness of the findings. The study adhered to the criteria of credibility, transferability, dependability, and confirmability proposed by Lincoln and Guba (1985). Credibility was established through prolonged engagement with the data, member checking, and peer debriefing. Transferability was supported through detailed descriptions of the research context and participant characteristics. Dependability was strengthened by maintaining comprehensive documentation of research procedures and analytical decisions, while confirmability was enhanced through reflexive memo writing and the maintenance of an audit trail. These procedures increased the transparency, consistency, and trustworthiness of the research process while ensuring that interpretations remained grounded in participants' narratives rather than researcher assumptions.

**Locale**

The study was conducted in selected public and private elementary schools in the Municipality of Compostela, Davao de Oro, Philippines, during the School Year 2025–2026. The municipality was selected because elementary schools within the area have progressively incorporated digital technologies into classroom instruction while experiencing varying levels of technological infrastructure, internet connectivity, instructional resources, and institutional support. These conditions provided an appropriate context for examining teachers' lived experiences of technology integration within authentic educational settings. The participating schools represented diverse instructional environments where digital technologies, including multimedia presentations, educational videos, learning management applications, laptops, televisions, and internet-based resources, were utilized to support classroom instruction. Although technology integration has become increasingly common, differences in resource availability and institutional capacity continue to influence teachers' instructional practices. These contextual variations allowed the study to capture diverse perspectives regarding technology use across comparable elementary school settings. The research setting was selected purposively because it reflected the phenomenon under investigation and provided access to participants with substantial experience in technology-enhanced instruction. Examining teachers within this educational context facilitated a comprehensive understanding of how contextual conditions influenced instructional decision-making, technology adoption, and classroom implementation.

**Participants**

Participants consisted of ten elementary school teachers employed in selected public and private schools in the Municipality of Compostela, Davao de Oro. Participant selection followed the principle of information richness, ensuring that individuals possessed substantial experience relevant to the phenomenon under investigation. Consistent with phenomenological inquiry, participant selection emphasized experiential knowledge rather than statistical representation. Eligible participants satisfied the following inclusion criteria: (a) employed as full-time elementary school teachers; (b) possessed a minimum of five years of teaching experience; (c) had direct experience integrating technology into classroom instruction; and (d) voluntarily agreed to participate through informed consent. Teachers without instructional experience in technology integration, newly employed teachers, and non-teaching personnel were excluded from participation. The final sample comprised ten participants. Sample adequacy was determined using the principle of information power, which suggests that studies involving a focused aim, specific participant characteristics, strong theoretical foundations, high-quality dialogue, and in-depth analysis require relatively smaller sample sizes to generate meaningful findings (Malterud et al., 2016). Data collection concluded when additional interviews produced no substantial conceptual expansion of the emerging themes.

**Strategy**

Purposive sampling was employed to recruit participants with direct experience of the phenomenon under investigation. This non-probability sampling technique is widely used in qualitative research because it enables the deliberate selection of participants capable of providing rich, relevant, and information-dense accounts of the research topic. Sampling decisions were guided by predefined inclusion and exclusion criteria to ensure that all participants possessed adequate experience integrating technology into elementary classroom instruction. Participant recruitment continued iteratively throughout the data collection process until sufficient information power had been achieved and subsequent interviews contributed minimal conceptual variation. This strategy enhanced the depth, relevance, and credibility of the collected data while maintaining methodological coherence with the phenomenological design. Following institutional approval, permission to conduct the study was obtained from the administrators of the participating schools. Eligible teachers were identified in collaboration with school administrators based on the established inclusion criteria. Potential participants received an invitation describing the objectives of the study, research procedures, expected duration of participation, ethical safeguards, and voluntary nature of involvement. Teachers who expressed interest were provided with an informed consent form outlining participant rights, confidentiality measures, potential risks, anticipated benefits, and the right to withdraw from the study at any stage without consequence. Recruitment continued until the predetermined sample size was achieved and the collected narratives demonstrated sufficient depth to address the research objectives.

**Instrument**

Data were collected using a semi-structured interview guide developed to address the research objectives and informed by the Technology Acceptance Model (Davis, 1989) and the relevant literature on technology integration in elementary education. The interview guide consisted of open-ended questions that encouraged participants to describe their experiences of integrating technology into classroom instruction, including instructional practices, perceived benefits, implementation challenges, coping strategies, institutional support, and professional insights. The interview protocol was designed to facilitate consistency across interviews while allowing sufficient flexibility to explore issues that emerged during the conversations. Follow-up and probing questions were used to clarify participants' responses, obtain detailed descriptions, and explore experiences that were relevant to the phenomenon under investigation. This flexible approach enabled participants to articulate their experiences using their own language while ensuring that the discussion remained aligned with the study objectives. Prior to data collection, the interview guide underwent expert review to establish content validity. The instrument was evaluated by specialists in qualitative research, educational technology, and research methodology with respect to clarity, relevance, coherence, and alignment with the research questions. Recommendations provided during the validation process were incorporated into the final interview guide to improve question wording, sequencing, and comprehensiveness. This process enhanced the content validity and methodological rigor of the instrument.

**Pilot Testing**

A pilot interview was conducted with an elementary teacher who satisfied the inclusion criteria but was not included in the final sample. The pilot interview assessed the clarity of the interview questions, estimated the duration of the interview, evaluated the appropriateness of the sequencing of questions, and identified potential issues that could affect data collection. Feedback obtained during the pilot interview resulted in minor revisions to the wording of several questions to improve clarity and facilitate richer participant responses. Data obtained during the pilot interview were excluded from the final analysis.

**Procedure**

Ethical approval and institutional permission were obtained prior to participant recruitment and data collection. School administrators from the participating schools were informed of the purpose of the study and granted permission for the conduct of the interviews. Eligible participants were subsequently contacted and provided with an information sheet explaining the objectives of the study, participation requirements, confidentiality procedures, and their rights as research participants. Written informed consent was obtained before the commencement of each interview. Individual interviews were scheduled at a time and location convenient for the participants to minimize disruption to instructional responsibilities and to facilitate open discussion. Depending on participants' language preference, interviews were conducted in either English or Filipino. Each interview lasted approximately 30–60 minutes and was audio-recorded with participants' permission. Field notes were maintained throughout the interviews to document contextual observations, non-verbal communication, and preliminary analytical reflections that supported subsequent data interpretation. Immediately following each interview, audio recordings were transcribed verbatim to preserve the accuracy of participants' narratives. Where interviews contained responses in Filipino or Cebuano, transcripts were translated into English using a meaning-based translation approach while preserving the contextual meaning of participants' statements. Transcript verification was undertaken through repeated comparison with the original recordings to ensure transcription accuracy prior to analysis.

**Analysis**

Data were analyzed using Braun and Clarke's (2006, 2021) reflexive thematic analysis. The analytical process commenced immediately after transcription and proceeded iteratively throughout data collection. This approach facilitated continuous comparison of emerging concepts and supported progressive refinement of developing themes. The analysis followed six phases. First, the researcher became familiar with the dataset through repeated reading of the interview transcripts while documenting preliminary analytical observations. Second, meaningful segments of text relevant to the research objectives were systematically coded. Coding was performed inductively to allow concepts to emerge directly from participants' narratives rather than from predetermined categories. Third, related codes were examined and organized into preliminary themes representing shared patterns across participants' experiences. Fourth, candidate themes were reviewed against both the coded extracts and the complete dataset to ensure conceptual coherence and distinctiveness. Fifth, themes were refined, clearly defined, and assigned descriptive labels that accurately reflected their underlying meaning. Finally, the themes were synthesized into a coherent narrative describing the essence of elementary teachers' lived experiences in integrating technology into classroom instruction. Throughout the analytical process, reflexive memo writing was used to document coding decisions, emerging interpretations, and methodological reflections. Qualitative analysis was characterized by constant comparison among transcripts, codes, and developing themes to ensure analytical consistency and conceptual depth. This iterative process strengthened the credibility, transparency, and trustworthiness of the findings while preserving participants' intended meanings.

**Ethical Considerations**

The study was conducted in accordance with internationally accepted principles for research involving human participants, including respect for persons, beneficence, justice, and respect for participants' autonomy. Ethical approval was obtained from the appropriate institutional ethics review committee prior to the commencement of data collection. Administrative permission was likewise secured from the Schools Division Office and the heads of the participating schools before participant recruitment and data collection were undertaken. Participation in the study was entirely voluntary. Eligible participants received a Participant Information Sheet describing the purpose of the study, research procedures, anticipated duration of participation, potential risks and benefits, confidentiality measures, and their rights as research participants. Written informed consent was obtained before each interview. Participants were informed that they could decline to answer any question or withdraw from the study at any stage without penalty or adverse consequences.

Confidentiality and participant anonymity were maintained throughout the research process. Personal identifiers were removed from all transcripts and replaced with participant codes to prevent identification. Information that could directly or indirectly reveal participants' identities or the identities of their schools was omitted from the research records and dissemination of findings. Only the researcher had access to the original audio recordings, interview transcripts, consent forms, and research documents. Potential risks associated with participation were considered minimal and were primarily limited to possible emotional discomfort while discussing professional experiences. To minimize these risks, interviews were conducted in locations selected by the participants and at schedules convenient to their professional responsibilities. Participants were reminded that they could pause, decline to answer any question, or terminate the interview whenever they wished without providing justification. Data protection procedures were implemented throughout the study. Audio recordings, electronic transcripts, and supporting documents were stored in password-protected digital storage accessible only to the researcher. Printed research documents were secured in a locked storage cabinet. Research records will be retained for the period required by institutional policy and will subsequently be destroyed through secure deletion of electronic files and confidential disposal of printed materials. The management of research data complied with the provisions of the Philippine Data Privacy Act of 2012 (Republic Act No. 10173) and institutional policies governing the protection of personal information. To strengthen the credibility and ethical integrity of the findings, participants were provided opportunities to verify the accuracy of their interview transcripts and clarify statements whenever necessary. Throughout the conduct of the study, the researcher maintained reflexive awareness to minimize personal bias and ensure that data interpretation remained faithful to participants' intended meanings. These ethical safeguards were implemented to protect participants' rights, preserve the integrity of the research process, and ensure responsible conduct of qualitative inquiry.

## RESULTS AND DISCUSSION

This section presents the findings for the third research question: What are the benefits experienced by students through the integration of technology into classroom instruction? Thematic analysis of the interview data generated four major themes: (1) Increased Engagement, Confidence, Independence, and Collaboration; (2) Flexible and Self-Paced Learning; (3) Practical and Hands-on Learning Experiences; and (4) Enhanced Learning Retention and Comprehension. Collectively, these themes illustrate how technology integration contributed to learners' academic, social, and cognitive development by creating more engaging, flexible, and meaningful learning experiences.

### Theme 1. Increased Engagement, Confidence, Independence, and Collaboration

The findings revealed that technology integration positively influenced students' engagement, confidence, independence, and collaborative learning. Participants consistently observed that learners became more enthusiastic, actively participated during classroom discussions, and demonstrated greater confidence in expressing their ideas when technology-supported instructional activities were implemented. Interactive digital resources encouraged learners to ask questions, share opinions, complete collaborative tasks, and assume greater responsibility for their own learning. Teachers likewise noted that technology motivated learners to explore instructional content independently while strengthening cooperation among classmates during group activities. Participants further explained that technology created learning environments where students felt more comfortable participating because multimedia resources, educational games, and interactive activities reduced anxiety commonly associated with traditional classroom instruction. Learners became more willing to communicate with peers, contribute to classroom discussions, and collaborate in completing technology-assisted learning tasks. These experiences indicate that technology supported both academic participation and learners' personal confidence within the classroom.

The findings demonstrate that technology integration promoted active learner engagement by fostering confidence, independence, and collaborative participation. Participants consistently described digital technologies as instructional resources that encouraged learners to become active contributors rather than passive recipients of information. This shift toward learner-centered participation reflects the capacity of technology to create classroom environments that encourage exploration, communication, and shared learning experiences. The findings support previous research indicating that educational technology enhances learner engagement by promoting active participation, motivation, and collaborative learning (Bond et al., 2024). Interactive learning environments encourage learners to communicate ideas, participate in discussions, and construct knowledge collaboratively, thereby strengthening both cognitive and social engagement. Similarly, learner autonomy develops when instructional technologies provide opportunities for exploration, self-directed learning, and active classroom participation (Schindler et al., 2020). The participants' experiences further demonstrate that confidence developed through repeated opportunities for successful participation in technology-enhanced activities. Learners gradually became more comfortable expressing their ideas, responding to questions, and interacting with peers because digital instructional resources reduced barriers to classroom participation. This finding reinforces the perspective that technology contributes to positive learning experiences when teachers create supportive instructional environments that encourage participation and recognize individual learner differences (UNESCO, 2021). Within the context of elementary schools in Compostela, increased engagement and confidence emerged through teachers' deliberate instructional planning rather than through technology alone. Participants carefully designed collaborative activities that encouraged interaction, creativity, and learner autonomy, highlighting that meaningful technology integration depends on pedagogical competence and purposeful instructional design (Falloon, 2020; Tondeur et al., 2020).

### Theme 2. Flexible and Self-Paced Learning

The findings revealed that technology enabled learners to study at their own pace by providing continuous access to instructional materials before, during, and after classroom instruction. Participants explained that learners could revisit

presentations, instructional videos, digital activities, and supplementary learning resources whenever additional review or reinforcement was needed. This flexibility allowed students to progress according to their individual learning needs while reducing the pressure associated with fixed classroom pacing. Teachers further observed that learners demonstrated greater independence because technology allowed them to search for additional information, review previous lessons, and complete learning tasks with minimal teacher assistance. Digital instructional resources encouraged students to assume greater responsibility for their learning while providing opportunities for continuous practice beyond classroom hours.

The findings indicate that technology integration promoted learner autonomy by supporting flexible and self-paced learning experiences. Participants consistently described technology as providing learners with opportunities to revisit instructional materials, reinforce previously learned concepts, and regulate their own learning according to individual needs. Such flexibility reflects one of the principal educational advantages of digital learning environments. These findings align with previous studies demonstrating that educational technologies facilitate self-directed learning by providing learners with continuous access to instructional resources and opportunities for independent study (OECD, 2023). Technology-supported learning environments encourage students to regulate their learning processes while promoting greater ownership of academic tasks. Likewise, digital learning resources contribute to learner autonomy by allowing students to review instructional content repeatedly until conceptual understanding is achieved (UNESCO, 2021). The present findings further suggest that self-paced learning became effective because teachers intentionally organized digital resources that were accessible, relevant, and aligned with instructional objectives. Consequently, flexibility should not be understood merely as unrestricted access to technology but as the result of deliberate instructional planning that supports independent learning while maintaining appropriate teacher guidance (Falloon, 2020).

**Theme 3. Practical and Hands-on Learning Experiences**

The findings revealed that technology integration provided students with practical and hands-on learning experiences that strengthened their understanding of lesson concepts through active participation. Participants consistently described that learners became more involved in classroom activities when they interacted directly with digital tools, educational applications, multimedia presentations, and computer-assisted learning tasks. Rather than merely listening to lectures, students actively manipulated learning resources, completed interactive exercises, explored educational content, and participated in technology-supported activities that required application of knowledge and problem-solving skills. These experiences enabled learners to connect theoretical concepts with authentic learning situations, making classroom instruction more meaningful and engaging. Participants also emphasized that practical technology-based activities promoted learners' curiosity and encouraged exploration beyond textbook content. Interactive educational games, simulations, digital exercises, and multimedia resources provided opportunities for learners to experiment, observe, and apply newly acquired knowledge in authentic classroom situations. Teachers observed that students demonstrated greater enthusiasm and confidence when they actively participated in technology-assisted learning activities because these experiences allowed them to learn through direct engagement rather than passive observation.

The findings indicate that technology integration enhanced learning by providing practical and experiential learning opportunities that promoted active participation and knowledge application. Participants consistently viewed technology as an instructional resource that transformed learners from passive recipients of information into active participants capable of exploring concepts, solving problems, and engaging directly with learning activities. These findings suggest that technology-supported experiential learning contributes to deeper conceptual understanding by allowing learners to construct knowledge through authentic interaction with instructional materials. The findings support previous research demonstrating that technology-enhanced learning environments promote experiential learning by encouraging learners to participate actively in inquiry, exploration, and problem-solving activities (Falloon, 2020). Interactive digital resources facilitate meaningful learning by enabling students to manipulate information, test ideas, and receive immediate feedback during classroom activities. Similarly, technology-supported instructional environments strengthen learners' critical thinking and application skills because they promote active engagement rather than passive information acquisition (Voogt et al., 2023). The participants' experiences further demonstrate that practical learning experiences emerged because teachers intentionally designed instructional activities that required learners to interact meaningfully with digital resources. Technology functioned as a pedagogical tool that supported authentic learning rather than as an end in itself. This observation reinforces previous evidence that the educational value of technology depends on teachers' ability to integrate digital resources into instructional strategies that encourage exploration, collaboration, and reflective learning (Tondeur et al., 2020). An important contribution of the present study is the finding that practical technology-assisted activities increased learners' confidence in applying newly acquired knowledge to classroom tasks. Participants observed that learners became more willing to experiment, ask questions, and solve instructional problems because technology created supportive learning environments that encouraged exploration without fear of failure. These experiences extend previous literature by illustrating how technology contributes to the development of both cognitive competence and learner self-efficacy within elementary education.

Within the educational context of Compostela, teachers demonstrated that meaningful experiential learning remained achievable despite variations in technological infrastructure. By adapting available digital resources and designing contextually appropriate classroom activities, participants ensured that learners continued to benefit from practical, technology-supported learning experiences. Consequently, the findings suggest that successful experiential learning depends not solely on sophisticated technologies but on teachers' pedagogical creativity, instructional competence, and responsiveness to learners' educational needs (OECD, 2023; UNESCO, 2021).

**Theme 4. Enhanced Learning Retention and Comprehension**

The findings revealed that technology integration improved students' retention and comprehension by presenting instructional content through engaging multimedia resources that facilitated deeper understanding. Participants consistently observed that learners remembered lessons more effectively when concepts were presented using videos, images, animations, audio materials, and interactive presentations. These instructional approaches enabled learners to connect visual and auditory information with classroom discussions, thereby strengthening conceptual understanding and long-term retention of lesson content. Teachers likewise reported that learners demonstrated improved recall during classroom discussions, assessments, and follow-up learning activities after participating in technology-enhanced instruction. Several participants explained that multimedia instruction simplified abstract concepts and enabled learners to retain information because they could repeatedly review digital learning materials whenever reinforcement was necessary. Students also demonstrated greater confidence in answering questions and applying previously learned concepts during succeeding classroom activities. Collectively, these experiences indicate that technology enhanced both immediate comprehension and sustained retention by making learning experiences more meaningful and memorable.

The findings demonstrate that technology integration contributed to improved learning retention and comprehension through the use of multimedia instructional approaches that supported meaningful cognitive processing. Participants consistently described visual presentations, educational videos, interactive activities, and digital learning resources as facilitating learners' ability to understand, organize, and remember instructional content. These findings indicate that technology strengthened conceptual learning by presenting information through multiple complementary representations that supported long-term memory formation. The findings corroborate previous research demonstrating that multimedia learning environments enhance learners' comprehension and retention when instructional resources integrate visual, auditory, and interactive elements in pedagogically meaningful ways (Di Fuccio et al., 2024). Learners are more likely to retain knowledge when they actively process information through multiple sensory channels and connect new concepts with existing knowledge structures. Similarly, educational technologies improve conceptual understanding when multimedia resources are purposefully aligned with learning objectives and guided by effective instructional practices (Falloon, 2020).

The participants' experiences further suggest that improved retention resulted from repeated opportunities to revisit instructional content through digital learning resources. Rather than limiting learning to classroom discussions, technology enabled learners to review presentations, videos, and supplementary materials independently, reinforcing conceptual understanding over time. This observation supports previous evidence indicating that technology-supported review and reinforcement strengthen long-term knowledge retention by promoting continuous engagement with instructional content (OECD, 2023).

Another important contribution of the present study concerns the relationship between comprehension and learner confidence. Participants observed that students who better understood instructional concepts became more willing to participate in discussions, answer questions, and apply previously learned knowledge during classroom activities. These findings extend previous literature by demonstrating that improved comprehension not only enhances academic performance but also promotes learners' confidence and willingness to participate actively in classroom learning. Within the context of elementary schools in Compostela, technology-enhanced retention and comprehension were achieved through teachers' purposeful integration of accessible multimedia resources despite contextual limitations in technological infrastructure. Participants demonstrated that meaningful learning outcomes depended on pedagogically sound instructional design rather than on technological sophistication alone. These findings reinforce the importance of strengthening teachers' digital pedagogical competence to maximize the cognitive benefits of technology integration while ensuring that instructional technologies remain aligned with learners' developmental needs and educational objectives (Tondeur et al., 2020; UNESCO, 2021). The findings demonstrate that technology integration generated substantial benefits for students by enhancing engagement, confidence, learner autonomy, practical learning experiences, and cognitive development. Participants consistently reported that digital technologies created learning environments in which students actively participated, collaborated with peers, explored instructional content independently, and developed stronger conceptual understanding through interactive and multimedia learning experiences. The findings further indicate that these benefits were not attributable to technology alone but resulted from teachers' deliberate pedagogical decisions, including the selection of appropriate instructional resources, the design of learner-centered activities, and the alignment of technology with curriculum objectives. Collectively, the findings reinforce the view that technology integration contributes to meaningful student learning when supported by effective teaching practices, continuous teacher professional development, and instructional environments that encourage active participation, collaboration, and reflective learning.

**Importance of Integrating Technology into Classroom Instruction**

This section presents the findings for the fourth research question: What is the importance of integrating technology into classroom instruction? The thematic analysis generated three interrelated themes: (1) Helps Promote Engagement and Collaboration; (2) Supports and Enhances the Teaching–Learning Process; and (3) Promotes Advanced Learning and Idea Exploration. These themes demonstrate that participants viewed technology not merely as an instructional resource but as a pedagogical tool that strengthened learner participation, improved instructional effectiveness, and facilitated higher-order learning experiences.

**Theme 1. Helps Promote Engagement and Collaboration**

The findings revealed that participants regarded technology integration as an essential strategy for promoting learner engagement and collaborative learning. Teachers consistently described that multimedia resources, interactive learning activities, educational applications, and digital instructional materials increased students' participation during classroom discussions and encouraged cooperation among peers. Technology-enabled instructional activities created opportunities for learners to communicate, exchange ideas, solve problems collaboratively, and participate more actively in classroom

learning. Participants further observed that learners became more motivated to attend classes and contribute to instructional activities whenever technology was integrated into lessons. Several participants emphasized that collaborative technology-assisted activities strengthened interpersonal relationships among learners while encouraging teamwork and mutual support. Through group presentations, educational games, collaborative projects, and interactive classroom exercises, students learned to communicate effectively, share responsibilities, and respect diverse perspectives. These experiences demonstrate that technology fostered both academic engagement and positive social interaction within the classroom environment.

The findings indicate that technology integration plays a significant role in promoting learner engagement by creating collaborative and interactive learning environments. Participants consistently associated meaningful technology use with increased classroom participation, stronger peer interaction, and greater learner motivation. These findings suggest that technology contributes to educational quality by facilitating instructional approaches that encourage active participation and collaborative knowledge construction. The findings are consistent with previous studies reporting that educational technologies enhance learner engagement by supporting collaborative learning experiences and interactive classroom participation (Bond et al., 2024). Technology-assisted instructional activities encourage learners to communicate, negotiate ideas, and construct knowledge collectively while increasing motivation and classroom involvement. Similarly, collaborative digital learning environments strengthen both cognitive engagement and interpersonal relationships because learners actively participate in shared learning experiences (Schindler et al., 2020).

The participants' experiences further reinforce the perspective that collaboration emerges from pedagogically purposeful instructional design rather than from technology alone. Teachers intentionally selected digital tools that encouraged discussion, cooperation, and shared problem-solving, demonstrating that technology becomes educationally valuable when integrated within learner-centered pedagogical practices (Falloon, 2020). Consequently, the importance of technology lies not only in improving instructional efficiency but also in strengthening social interaction and collaborative learning within elementary classrooms. Within the context of elementary schools in Compostela, participants demonstrated that meaningful collaboration remained achievable despite differences in technological infrastructure. Teachers adapted available digital resources to facilitate cooperative learning while maintaining learner participation under varying classroom conditions. These findings highlight that the educational value of technology depends fundamentally on teachers' instructional competence and their capacity to create collaborative learning environments supported by appropriate digital resources (Tondeur et al., 2020; UNESCO, 2021).

**Theme 2. Supports and Enhances the Teaching–Learning Process**

The findings revealed that participants perceived technology as an important resource for improving the overall teaching–learning process. Teachers consistently explained that digital technologies enhanced lesson preparation, instructional delivery, learner assessment, classroom interaction, and access to educational resources. Participants emphasized that multimedia presentations, educational videos, online references, interactive activities, and digital instructional materials enabled them to present lessons more effectively while improving learners' understanding of classroom content. Technology also facilitated timely feedback, continuous learner participation, and more organized classroom instruction. Participants further reported that technology supported efficient classroom management by simplifying instructional preparation and enabling more flexible implementation of classroom activities. The availability of digital resources allowed teachers to modify instructional approaches according to learners' responses while maintaining alignment with curriculum objectives. These experiences indicate that technology contributed to a more dynamic, efficient, and learner-centered instructional process. The findings demonstrate that technology integration strengthens the teaching–learning process by enhancing instructional planning, classroom delivery, learner participation, and assessment practices. Participants consistently described technology as a pedagogical resource that expanded instructional opportunities while improving the quality and effectiveness of classroom instruction. These findings suggest that technology contributes to educational improvement by supporting teachers' professional practice and facilitating meaningful learner engagement.

The findings corroborate previous evidence indicating that educational technologies enhance instructional effectiveness when integrated into pedagogically sound teaching practices (OECD, 2023). Technology provides teachers with access to diverse instructional resources that improve lesson organization, facilitate learner participation, and strengthen assessment practices. Likewise, digital instructional environments enable teachers to respond more effectively to learners' educational needs by providing flexible and adaptable instructional approaches (UNESCO, 2021). The participants' experiences further demonstrate that improvements in the teaching–learning process resulted primarily from teachers' professional competence rather than technology itself. Participants carefully selected, adapted, and implemented digital resources according to lesson objectives and learner characteristics, highlighting that successful technology integration requires pedagogical knowledge alongside technological competence. This observation supports previous research emphasizing that teachers remain the principal agents of effective technology integration because instructional quality depends on informed pedagogical decision-making rather than technological availability alone (Ertmer & Ottenbreit-Leftwich, 2013; Tondeur et al., 2020). Within the educational context of Compostela, participants demonstrated that technology enhanced instructional effectiveness despite contextual limitations related to technological infrastructure. Teachers maximized available digital resources through adaptive instructional planning and flexible classroom implementation, illustrating that meaningful technology integration is fundamentally driven by instructional expertise and reflective professional practice rather than technological sophistication alone.

**Theme 3. Promotes Advanced Learning and Idea Exploration**

The findings revealed that participants considered technology an important means of promoting advanced learning and encouraging learners to explore ideas beyond the prescribed curriculum. Teachers explained that digital technologies

enabled students to access diverse learning resources, investigate topics independently, and develop broader perspectives through online information, multimedia resources, and interactive educational platforms. Participants observed that learners became more curious, asked more meaningful questions, and demonstrated greater initiative in exploring concepts introduced during classroom instruction. Several participants emphasized that technology encouraged learners to think critically by exposing them to authentic information, multiple perspectives, and real-world examples. Learners were able to compare ideas, verify information, and apply newly acquired knowledge to classroom activities, thereby strengthening higher-order thinking skills and intellectual curiosity. The findings indicate that technology integration promotes advanced learning by expanding learners' opportunities for inquiry, independent exploration, and critical thinking. Participants consistently described technology as extending learning beyond textbook content by providing access to authentic information and diverse educational resources. These findings suggest that technology contributes to higher-order learning by encouraging learners to investigate concepts independently while developing analytical and reflective thinking skills. The findings align with previous studies demonstrating that educational technologies promote inquiry-based learning and critical thinking by providing learners with access to diverse digital information sources and interactive learning environments (Voogt et al., 2023). Technology encourages learners to evaluate information, synthesize knowledge from multiple sources, and construct deeper conceptual understanding through independent exploration. Similarly, technology-supported learning environments strengthen learners' capacity for innovation, creativity, and problem-solving when instructional activities emphasize active inquiry rather than passive information acquisition (OECD, 2023). The participants' experiences further demonstrate that advanced learning emerged because teachers intentionally designed instructional experiences that encouraged exploration rather than memorization. Technology became a vehicle for extending classroom learning by enabling learners to investigate questions, examine authentic examples, and connect classroom concepts with real-world contexts. This finding reinforces the argument that higher-order learning depends on pedagogical approaches that intentionally integrate technology with inquiry-based instructional strategies (Falloon, 2020).

Within the context of elementary schools in Compostela, technology supported intellectual curiosity despite limitations in digital infrastructure. Teachers successfully encouraged learners to explore ideas using accessible technological resources while adapting instructional strategies according to local classroom conditions. Consequently, the findings suggest that technology contributes to advanced learning not through technological sophistication itself but through teachers' capacity to facilitate inquiry, reflection, and meaningful knowledge construction within authentic educational contexts (UNESCO, 2021; Tondeur et al., 2020). The findings demonstrate that participants regarded technology integration as an essential component of effective elementary education because it promoted learner engagement, strengthened collaboration, enhanced instructional quality, and supported higher-order learning. Teachers consistently emphasized that technology enriched classroom instruction by facilitating interactive learning experiences, improving instructional delivery, and expanding opportunities for inquiry and independent exploration. The findings further indicate that the educational significance of technology was closely associated with teachers' pedagogical competence, instructional adaptability, and purposeful integration of digital resources into classroom practice. Although contextual limitations remained evident, participants demonstrated that meaningful technology integration was achievable through thoughtful instructional planning and learner-centered pedagogical approaches. Collectively, these findings reinforce the importance of sustained professional development, institutional support, and context-responsive technology integration to maximize educational outcomes in elementary classrooms.

**Summary**

The findings of the present study demonstrate that technology integration positively influenced classroom instruction by enhancing learner engagement, collaboration, instructional interaction, learner autonomy, and meaningful learning experiences. Participants likewise emphasized that effective technology integration depended on teachers' pedagogical competence, instructional adaptability, and purposeful use of digital resources despite limitations in technological infrastructure. These findings are consistent with previous studies reporting that technology enhances learner motivation, participation, and instructional effectiveness when integrated through learner-centered pedagogical approaches (Ross, 2020; McKnight et al., 2021; Bhat, 2023). Similarly, the participants' experiences support evidence that teachers' digital competence, continuous professional development, mentoring, and institutional support are fundamental to successful technology integration and sustained instructional innovation (Kopcha, 2010; Delaney et al., 2019; Hammond et al., 2017; Aldred, 2020; Paraschak, 2023). Furthermore, the findings reinforce recent research demonstrating that technology promotes differentiated instruction, practical learning experiences, learner confidence, and improved academic outcomes while expanding equitable learning opportunities in elementary education (Anderson et al., 2022; Asio, 2022; Azad, 2023; Bedenlier et al., 2020; DahlLeonard et al., 2024; UNICEF Philippines, 2023; World Bank, 2022). Collectively, these findings strengthen the growing body of evidence that meaningful technology integration is fundamentally a pedagogical process in which instructional expertise, supportive learning environments, and continuous professional growth are more influential than technology alone.

**Conclusion and Recommendations**

The study explored the lived experiences of elementary teachers in integrating technology into classroom instruction in selected public and private elementary schools in the Municipality of Compostela, Davao de Oro. The findings revealed that technology integration positively influenced instructional practices by enhancing learner engagement, collaboration, creativity, classroom interaction, lesson delivery, and students' understanding of instructional content. Participants consistently viewed technology as a valuable pedagogical resource that enabled more interactive, learner-centered, and meaningful classroom experiences. Despite contextual challenges such as limited technological resources and inconsistent internet connectivity, teachers demonstrated adaptability by employing innovative instructional strategies that maximized

the educational value of available digital tools. The study further concludes that the effectiveness of technology integration depends primarily on teachers' pedagogical competence, instructional planning, and professional adaptability rather than on technology alone. Meaningful integration was achieved when digital resources were purposefully aligned with curriculum objectives, learners' needs, and appropriate instructional strategies. Moreover, technology supported learners' academic and personal development by promoting engagement, collaboration, learner autonomy, practical learning experiences, and improved comprehension and retention. These findings emphasize that sustainable technology integration requires continuous professional development, supportive school leadership, adequate technological infrastructure, and collaborative educational policies that empower teachers to implement technology effectively within diverse classroom contexts.

Based on the findings of the study, school administrators and educational policymakers should continue strengthening institutional support for technology integration by improving access to digital infrastructure, ensuring reliable internet connectivity, and providing adequate instructional technologies across schools. Continuous professional development programs should likewise be implemented to strengthen teachers' digital pedagogical competence, particularly in instructional design, technology-enhanced assessment, differentiated instruction, and learner-centered teaching strategies. Teacher education institutions are also encouraged to reinforce technology integration within pre-service teacher preparation programs to equip future educators with the competencies required for technology-enhanced instruction. Future researchers are encouraged to extend the present investigation by conducting similar qualitative studies in different educational contexts, grade levels, and geographical locations to examine how contextual factors influence teachers' experiences of technology integration. Comparative, longitudinal, or mixed-methods studies may provide a broader understanding of technology integration across educational settings while further examining the relationships among digital competence, institutional support, instructional innovation, and learner outcomes. Such investigations may contribute to the continued development of evidence-based policies and practices that promote effective and sustainable technology integration in elementary education.

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