Administrative Assistance in Relation to Teachers' Readiness in the Integration of Technology in Teaching

Madonna M. Yap
Graduate School Student of Colegio de Santa Rita de San Carlos, Inc.

Dr. Cybill Ann A. Ramirez
Graduate School Faculty of Colegio de Santa Rita de San Carlos, Inc.

Abstract:

This study examined the level of administrative assistance and its relationship to teachers' readiness to integrate technology in teaching in schools of District 3, Cluster 5 of San Carlos City, during the School Year 2025- 2026. It addressed the lack of empirical research focusing on rural public elementary school particularly in District 3, Cluster 5 of San Carlos City regarding how administrative assistance specifically influences teachers' readiness in the rural school settings. Specifically, it assessed administrative assistance in terms of leadership, resources and training; teachers' readiness in terms of skills, motivation, confidence and openness; and technology integration in teaching in terms of students' engagement; improved strategies; and 21st century skills. A quantitative correlational research design was employed. Data were collected from 94 public elementary school teachers selected through a purposive sampling technique from eight (8) public elementary schools using a validated survey questionnaire. Descriptive and inferential statistics were used for the data analysis. The findings of the study revealed a very high level of administrative assistance, teachers' readiness, and technology integration in teaching, showing that these variables are strongly and positively correlated. When school administrators consistently provide strong leadership, resources, and training, teachers feel more confident and prepared to integrate technology in meaningful ways. This readiness allows them to go beyond simply using digital tools, instead apply them to enhance instruction, engage students more actively, and promote the development of 21st century skills. The results also emphasize the importance of continuous professional development and structured training, as these initiatives strengthen teachers' competence and confidence. Overall, sustained leadership support, adequate resources, and ongoing training are essential to ensure that teachers' readiness and technology integration in teaching remain effective, purposeful, and sustainable in schools.

Chapter 1

INTRODUCTION

Background of the Study

The digital transformation of education has accelerated dramatically, particularly during the COVID- 19 pandemic. Globally, schools have moved beyond emergency remote teaching toward more intentional and structured technology- enhanced learning environments. This shift has reshaped how teaching and learning are delivered, placing greater emphasis on digital competence, innovation, and adaptability. Research highlights that administrative assistance expressed through clear vision, adequate resources and a supportive school culture plays a foundational role in strengthening teachers' readiness to embrace technological change (Schmitz et al., 2023). At the same time, teachers' readiness is no longer viewed as merely possessing technical skills; it now encompasses motivation, beliefs, confidence, and openness to innovation (Chui et al., 2022). While many global initiatives have focused on providing access to digital tools, less attention has been given to understanding how administrative assistance directly influence teachers' readiness and how this readiness translates into meaningful, student- centered technology integration.

In Southeast Asia and similar contexts, the urgent transition to digital learning has exposed persistent and systemic challenges. In the Philippines, studies have reported concerns such as unstable internet connectivity, limited resources and consistent professional development opportunities, and fragmented administrative support systems (Chin et al., 2022). School leaders often face difficulties in navigating digital governance, forming external partnerships, and providing timely and contextualized assistance to teachers (Pettersson et al., 2024. Moreover, while digital tools may be introduced in schools, teachers sometimes develop only mechanical familiarity with these tools without fully integrating them into pedagogically sound instructional practices (Garjas, 2025). This disconnect underscores the need to examine not just access to technology but the deeper organizational and human factors that shape its effective use

In the Philippines, the implementation of blended and online learning has further revealed inequities in infrastructure, training, and sustained support. Curriculum structures often remain anchored in traditional instructional approaches, leaving teachers challenged to align technology use with intended learning outcomes (Garjas, 2025). Consequently, the effectiveness of technology integration depends greatly on the interplay between leadership practices and teacher preparedness. Schmitz et al. (2023) found that transformational leadership among school heads positively influences teachers' perceptions of technology's value, clarifies educational goals, promotes collaboration, and strengthens confidence in applying technological and pedagogical knowledge. These findings suggest that leadership behavior significantly shapes teachers' readiness and their capacity to implement technology in ways that enhance student learning.

Locally, schools in District 3, Cluster 5 of San Carlos City are situated in rural and far-flung areas where access to modern technology and strong administrative assistance remains limited. These contextual realities present unique challenges that may hinder teachers' readiness and the overall effectiveness of technology-integrated instruction. Although prior studies, such as Mananay et al. (2023), have explored the evolving landscape of technology integration in higher education in Central Visayas, limited research has focused specifically on the relationship between administrative assistance and teachers' readiness at the basic education level, particularly in public elementary schools that are geographically isolated. This gap highlights the need for a deeper

investigation into how leadership assistance can empower teachers and sustain meaningful technology integration in rural educational settings in the future. This study is particularly important in the context of empirical research for focusing on rural public elementary schools, particularly in District 3, Cluster 5 of San Carlos City, regarding how administrative assistance specifically influences teachers' readiness in the Philippine context.

Most existing studies are situated in urban or better-resourced settings, leaving limited understanding of how these factors work in geographically isolated schools where teachers face technological constraints and the realities of rural education. Addressing this gap, the present study aims to determine the level of administrative assistance in terms of leadership, resources, and training as well as the level of teachers' readiness to integrate technology for effective instruction in terms of skills, confidence, motivation, and openness. Ultimately, this study seeks to investigate how administrative assistance influences teachers' readiness to integrate technology, thereby, contributing to more effective instructional practices in rural elementary schools.

Therefore, addressing this gap is important because it will give voice to the experiences of teachers in District 3, Cluster 5, of San Carlos City. Understanding their struggles and strengths can help educational leaders design more responsive programs and policies that truly support teachers' readiness and ensure that no school whether near or far is left behind in the pursuit of quality, technology-driven education.

Review of Related Literature

The review of related literature discusses various concepts and research studies related to the topics of this study. This section includes both local and international literature that provides insights and support for the present investigation.

Conceptual Literature

On Administrative Assistance

Administrative assistance plays a crucial role in shaping teachers' readiness to integrate technology into classroom instruction and learning. When school leaders provide clear direction, consistent encouragement, and a shared vision for digital learning, teachers feel supported and empowered to embrace innovation. Leadership that models effective technology use, promotes collaboration, and nurtures a growth mindset, helps cultivate a school culture where technology integration becomes a natural part of everyday teaching practice (AlAjmi, 2022; Schmitz, 2023; Olaniyan & Uzorka, 2024). Strong digital leadership significantly influences teachers' motivation, confidence and willingness to adopt instructional technologies. When administrators actively demonstrate technology use, allocate sufficient resources, and communicate clear expectations, teachers are more likely to integrate digital tools purposeful and meaningful ways (AlAjmi, 2022). Moreover, effective leadership ensures that digital transformation efforts are aligned with schools' goals and that teachers are actively involved in planning and decision-making processes (Chui et al., 2022; Panakaje, 2024). When teachers feel that their voices are heard and valued, their sense of ownership and readiness to implement technology increases. Okunlola and Naicker (2025) further emphasized that principals who exhibit strong digital leadership competencies inspire teachers to adapt to the demands of 21st century education and the evolving landscape shaped by the Fourth Industrial Revolution. Such leadership fosters adaptability, innovation, and continuous professional growth among educators.

Beyond vision-setting and policy direction, administrative assistance encompasses professional development and mentoring. Lewis (2024), highlighted that ongoing instructional coaching plays a vital role in building teachers' confidence and competence in integrating technology into their teaching practices. Job-embedded support, where teachers receive real time feedback and encouragement, has been shown to strengthen both readiness and sustained technology use. In

addition, Rasdiana et al. (2024) underscored the importance of professional learning communities fostered by school leaders. These collaborative platforms encourage teachers to share best practices, reflect on experiences, and innovate collectively, thereby enhancing readiness and deepening the quality of technology integration.

Furthermore, administrative support should extend beyond providing technical training. Caneva et al. (2023), emphasized the importance of creating an empowering environment where teachers feel trusted, valued, and supported. When educators perceived genuine encouragement form their leaders, they become more open to experimenting with new instructional technologies and strategies. In this way, administrative assistance not only equips teachers with skills but also nurtures the confidence, motivation, and professional culture necessary for meaningful and sustainable technology integration.

Training is another vital form of administrative assistance. Continuous, relevant, and practiced-based professional development helps teachers strengthen their technological, pedagogical, and content knowledge. Training that includes mentoring, coaching, and peer collaboration allows teachers to translate abstract digital concepts into practical classroom strategies (Liao, 2022; Huang et al., 2024). Also when teachers receive sustained support and time to apply what they learn, their confidence, competence, and willingness to use technology meaningfully increase (Theodorio, 2024; Amemasor, 2025).

In addition, another important indicator is the resources, which serve as the foundation for successful technology integration. Even the most inspired leaders and well- trained teachers struggle to implement digital tools without sufficient devices, stable internet connections, and technical assistance especially in the far-flung schools like the District 3 Cluster 5. According to Granstrom, 2025; Chui et al., 2022 schools that invest in infrastructure and ensure equitable access empower teachers to focus on teaching rather than troubleshooting. Significantly, with accessible and reliable resources, teachers can experiment with new digital platforms and create engaging, technology-enhanced learning experiences for their students.

In summary, administrative assistance through leadership, training, and resources forms an interconnected framework that promotes teachers' readiness in far flung schools like in District 3, Cluster 5 to integrate technology. Leadership provides direction and inspiration, while training develops knowledge and confidence, and resources make implementation possible. When these three align, teachers become more capable, motivated, and prepared to use technology in meaningful way, student-centered ways leading to improved teaching practices and more engaged learners (AlAjmi, 2022; Schmitz, 2023; Huang et al., 2024; Granstorm, 2025)

On Teachers' Readiness on Technology Integration

Teachers' readiness to integrate technology is a crucial element in the success of digital transformation in education. It encompasses teachers' skills, motivation, confidence and openness toward using technology to enhance teaching and learning. As Huang et al., (2024) explain that readiness is not limited to knowing how to operate digital tools; it also involves having the mindset and adaptability to apply these tools creatively and meaningfully in the classroom. Teachers who are ready to integrate technology demonstrate a combination of technical competence, positive attitudes, and a willingness to experiment with new instructional methods (Amemasor, 2025)

According to Huang et al., (2024), readiness is a multidimensional construct that includes teachers' technological competence, self-efficacy, and willingness to innovate. When teachers are ready, they are more likely to design lessons that promote collaboration, creativity, and critical thinking among students.

Expanding this notion, Chui et al., (2022) emphasize that teachers who perceive technology as useful and compatible with their teaching styles tend to integrate it more effectively. Similarly,

Granstrom, (2025) found that teachers' readiness is largely influenced by their confidence in managing digital tools and their belief that technology enhances learning outcomes. In contrast, teachers who feel anxious or perceive technology as an extra burden often avoid using it, even when resources are available (AlAjmi, 2022).

Technological skills form the foundation of readiness. These include the ability to use educational software, manage online platforms, and design technology enhanced lessons (Chui et al., 2022). Teachers who possess strong digital literacy can better connect classroom goals with appropriate technologies, improving the quality of instruction (Liao, 2022). Continuous training and exposure to technology- rich environments further develop these skills and help teachers keep pace with innovations in education (Olaniyan & Uzorka, 2024).

Motivation also plays a vital role in shaping teachers' willingness to integrate technology. When teachers recognize the benefits of technology for student engagement and learning outcomes, they are more likely to adopt it in their practice (Panakaje, 2024). Intrinsic motivation is the genuine desire to improve teaching and it tend to produce more sustainable and meaningful technology use compared to external pressures (Kumar and Chand, 2023). Also Schmitz, (2023) states that administrative encouragement, peer collaboration, and visible classroom success stories further strengthen teachers' motivation.

Another one is teachers' confidence, which refers to teachers' self- efficacy or belief in their ability to effectively use technology for teaching (Granstrom, 2025). AlAjmi, (2022) also states that teachers with high confidence feel empowered to try new digital tools and overcome challenges that arise in integrating them into lessons. Conversely, low confidence can lead to avoidance or minimal use of technology despite available resources. However, Theodorio, (2024) states that building confidence requires supportive professional development and a non- judgmental environment that allows experimentation and reflection.

Teachers' openness to change determines how teachers respond to new technological innovations. Open- minded teachers are more adaptable, willing to learn, and receptive to feedback (Huang et al., 2024). As education continually evolves, openness enables teachers to rethink traditional methods and adopt more student- centered, technology- driven approaches (Amemasor, 2025). Together, these four dimensions – skills, motivation, confidence and openness interact to shape a teachers' readiness for technology integration. When strengthened through training, support, and a positive school culture, these factors lead to more effective and meaningful technology use in teaching and learning.

Another important aspect that can help teachers' readiness is professional development. Ongoing and context- based training strengthens teachers' technological, pedagogical, and content knowledge (TPACK), enabling them to plan and deliver more engaging digital lessons (Liao, 2022; Amemasor, 2025). However, according to Theodorio, (2024); Olaniyan & Uzorka, (2024) short, one- time seminars are often insufficient; teachers need continuous mentoring, collaborative learning and communities, and hands- on experiences to build lasting readiness.

Furthermore, institutional and administrative support also plays a vital role in teachers' readiness. Effective leadership provides vision and encouragement, while access to proper infrastructure and technical assistance reduces barriers to technology integration (Schmitz, 2023; Panakaje, 2024). Therefore, when teachers feel supported by their administrators and have reliable tools, they are more confident and motivated to explore new digital strategies.

Overall, teachers' readiness for technology integration is not a fixed trait but a dynamic condition shaped by leadership, professional development, resources and personal attitudes. Schools that nurture these elements are more likely to foster teachers who are not only technically skilled but also pedagogically prepared and emotionally confident to integrate technology in transforming learning experiences (Huang et al., 2024; Chui et al., 2022)

On the Integration of Technology in Teaching

The integration of technology in education serves as a transformative approach to enhance the quality of teaching and learning in the 21st century. When technology is effectively utilized, it promotes student engagement, strengthens instructional strategies, and develops essential 21st century skills such as communication, collaboration, creativity, and critical thinking. According to Huang et al., (2024), technology integration creates interactive and student- centered learning environments where learners become active participants rather than passive recipients. This engagement results from multimedia content, gamified lessons, and online collaboration tools that make learning more meaningful and enjoyable (Kumar & Chand, 2023; Panakaje, 2024).

When teachers and schools thoughtfully blend technology into learning, the classroom becomes more than a place for information transfer it becomes a space where learners actively participate, explore, and create. In far- flung schools like the District 3, Cluster 5 technology integration looks and feel different because teachers work with weak internet, limited resources and sometimes even unstable electricity. These realities shape how learning happens and push schools to use practical, low- bandwidth tools like pre- loaded tablets, community learning hubs, radios, and printed modules supported with occasional digital access (Mustafa, 2024; Okoye, 2025). Even with these limitations, technology can spark curiosity and engagement when used meaningfully, especially when teachers connect digital tasks to real community issues or the contextualization of the lessons, use offline interactive lessons, and guide students through hands- on projects that let them explore, create, and share (Maphosa, 2024; ACM Digital Library, 2023).

In terms of improved teaching strategies, technology provides teachers with diverse and innovative methods for instruction. Digital tools allow for differentiated learning, real- time assessment, and flexible lesson delivery that address students' varied learning needs (Alvarez, 2023; Liao, 2022). Teachers who integrate technology effectively are also able to shift from traditional teaching to more collaborative, inquiry- based, and project- based learning models (Schmitz, 2023; Amemasor, 2025)

However, some research shows that in far- flung schools, technology improves strategies not through big, expensive devices but through localized and contextualized learning, lending printed work like modules, offline apps, and teacher collaboration circles to create flexible learning experiences. Sustainable change happens when teachers receive ongoing coaching, peer support, and pre- designed lesson guides that they can adapt to local culture and language, instead of short one- time seminars (Sum, 2022; Roshid, 2024). Through continuous professional development and administrative support, teachers enhance their technological- pedagogical- content knowledge (TPACK), leading to improved teaching practices aligned with modern learning standards (Olaniyan & Uzorka, 2024)

Finally, technology integration nurtures 21st century skills, which is the core competencies that learners need to thrive in a digital society. Students learn to collaborate through online platforms, communicate across diverse media, and think critically when analyzing digital information (Chui et al., 2022; Granstrom, 2025). However, beyond engagement and pedagogy, students in rural settings can develop 21st century skills like communication, collaboration, creativity, critical thinking, and digital literacy when tech- supported lessons are rooted in real- life problem solving and guided reflection (Almazroa, 2023; Zou, 2025). Additionally, researchers emphasize that technology alone is not enough, it only becomes powerful when teachers design lessons that are authentic, achievable with available resources, and grounded in learners' lived realities (Ahiaku, 2025; Bergdahl, 2024). Furthermore, by engaging in digital problem- solving, students also cultivate creativity and innovation, which are essential for future careers in an increasingly technology- driven world (Theodorio, 2024; Huang et al., 2024).

Concluding these studies, this assumes that technology integration directly influences student engagement, improved strategies, and 21st century skill development. When teachers are provided with the proper support, training, and resources, technology becomes a powerful catalyst for active learning, effective teaching, and holistic skill formation. On the other hand, successful integration of technology adoption in far- flung schools depends on local support systems, community partnerships, and a long- term commitment to equitable access and sustained teacher development (Mustafa, 2024; Okoye, 2025). Ultimately, preparing both educators and learners for success in the digital era.

Related Studies

Foreign Literature

Administrative assistance is the practical, everyday support that school administrators provide especially in public schools so teachers can teach not just in general but specifically when introducing and sustaining technology in classrooms. In practice this assistance shows up as leadership (a principal's vision, modelling, and distributed responsibilities), training (an ongoing, job- embedded professional development and coaching), and resources (devices, internet connectivity, technical support, and locally usable content). These three indicators work together when leadership provides direction and the willingness to try new things, when training builds teachers' skills and confidence, and when resources turn those intentions into lessons that actually run (Schmitz et al., 2023; AlAjmi, 2022; Mustafa et al., 2024).

Expanding this topic, leadership support have been consistently identified as a key driver of teachers' readiness for technology use in schools. Nguyen et al., (2022) found that school leaders who actively model technology usage and foster collaborative digital practices significantly influence teachers' willingness to integrate ICT. Similarly, El-Sayad et al., (2021) emphasized that continuous motivation, shared technological vision, and transformational leadership create positive attitudes toward educational innovation among teachers. When school administrators prioritize technology adoption and encourage exploration of digital platforms, teachers develop a stronger belief in the value of technology- enabled instruction, which contributes to a more committed and skilled teaching workforce.

Moreover, school administrators play a vital role in shaping teachers' readiness to integrate technology into classroom instruction. Their assistance through effective leadership, proactively providing capacity- building training, and provision of adequate resources is essential for meaningful digital transformation in education. According to the studies of Schmitz et al., (2023); AlAjmi, (2022) transformational and digital leadership is vital for school heads who actively champion technology, protect teacher time for learning, and share responsibility with teacher-leaders consistently appear in international studies as the spark that makes other supports work. On the other hand, strong instructional leadership from school heads also motivates teachers to adopt technology by providing clear vision, support, and encouragement. Finally, research on low – resource and rural contexts emphasize that without practical resources, leadership and training often cannot translate into classroom change however administrators who manage budgets and partner for infrastructure create the conditions for real integration (Mustafa et al., 2024; Zhao, 2024)

Likewise, systematic reviews of pandemic era training and professional development show that technology- enable professional development that is ongoing, coaching- based, and linked to actual classroom tasks builds teacher capacity far better than one- off workshops (Huang et al., 2024). This opportunities enhance teachers' readiness and capacity to integrate digital tools effectively. According to Joo et al., (2021), structured digital training increases teachers' self- efficacy and technological competence, leading to a more frequent and effective technology use in the classrooms. In another study of Trang & Diep, (2021) highlighted that ongoing workshops and mentorship programs support teachers in adapting to emerging technologies, improving their

instructional strategies, and fostering a culture of continuous learning. These opportunities help teachers overcome fear or hesitation related to technology use by equipping them with relevant skills and confidence to innovate in teaching- learning process.

Moreover, resources and infrastructure play an essential role in enabling teachers to implement technology- based instruction. Alshammari, (2021) reported that schools with sufficient digital devices, stable internet connectivity, and user- friendly learning platforms tend to have higher levels of technology integration among teachers. Meanwhile, Bello&Johnson, (2022) emphasized that sustained investment in ICT infrastructure provides teachers with the tools necessary to create interactive and collaborative learning environments. When schools ensure that teachers have access to relevant digital devices, learning management systems and tech support services, they encourage more consistent and successful classroom technology use.

Summarizing these studies, it collectively highlight the strong, positive relationship between administrative support and teachers' readiness to integrate technology. Effective school leadership, meaningful training programs, and equitable access to digital resources build teachers' confidence, strengthen their technological skills, and enhance their motivation to innovate classroom instruction. With sustained administrative assistance and collaboration, teachers become more empowered to embrace digital learning and prepare students especially in far- flung schools in District 3, Cluster 5 for the demands of the modern, technology- driven world.

Teachers' readiness in technology integration is shaped by their knowledge base, training support, and sense of competence in implementing digital tools. Recent evidence shows that teachers' technological self- efficacy strongly predicts their readiness to use technology in instruction, particularly when supported through structured professional learning (Zeng, Wang, & Li, 2022). Similarly, motivation and digital competence are strengthened when professional training explicitly develops teachers' TPACK and fosters reflective practice (Revuelta- Dominguez et al., 2022; Sulistiani, 2024). Participation in professional development programs also helps teachers transition from basic tool usage to meaningful integration that enhances student learning outcomes (Futterer, Backfisch, & Lachner, 2024). These studies emphasize that developing teacher readiness requires not only technical training but also intentional pedagogical guidance and long- term capacity building.

A teachers' motivation and confidence play a crucial role in sustaining technology- enhanced instruction. Teachers who view technology as meaningful for student engagement and instructional improvement demonstrate higher willingness and confidence to integrate digital tools (Celik, 2023; Lai, 2023). Moreover, teacher narratives indicate that motivation increases when digital innovation is aligned with classroom realities and supported through collaborative learning environments (Gomez- Trigueros et al., 2024). Administrative support, such as leadership encouragement and access to instructional resources, further cultivates confidence and motivates educators to explore innovative teaching strategies with technology (Pandita & Kiran, 2023). These insights highlight the importance of intrinsic motivation combined with institutional encouragement to ensure effective technology adoption.

Finally, teachers' openness to technology is strengthened when school systems actively support innovation through clear direction, adequate resources, and sustained professional development. Research demonstrates that teachers are more likely to adopt digital tools when school administrators promote a culture of technology- supported pedagogy and provide accessible training opportunities (Bergdahl & Nouri, 2024). Continued access to high- quality professional learning environments helps teachers internalize digital skills, fostering long- term readiness and openness to technology advancement in the classroom (Futterer et al., 2024). New frameworks are emerging to evaluate and guide technology integration in education, reinforcing the importance of administrative structures and training systems as drivers of teacher readiness and future- ready instruction

(Educational Technology Research and Development, 2025). In short, teacher openness to technology improves where leadership, training, and digital infrastructure are aligned toward sustained innovation.

Effective integration of technology in classrooms does more than digitize lesson, it re- imagines how students engage, how teachers teach, and what skills learners develop for a rapidly changing world. Recent international studies highlight three interrelated outcomes of strong technology integration: increased student engagement, improved instructional strategies, and enhanced development of 21st century skills.

When technology is embedded in purposeful classroom design, student engagement rises, not merely in behavior but cognitively and emotionally students become more curious, self- directed, and willing to take risks (Maricic et al., 2024). For example, in Science, Technology, Engineering, Arts, and Mathematics (STEAM) environments where emerging technologies were used, student participation and persistence increased markedly. Emerging research also shows that blended learning models like combining digital and face- to- face activities tend to produce higher levels of active student engagement compared with traditional lessons (Joshi, Zhalte, Mahajan et al., 2023). Importantly, engagement appears strongest when teachers use technology to create interactive, collaborative, and real life relevant tasks, rather than simply digitizing worksheets (Ramaila & Molwele, 2022)

Technology integration shifts instructional strategies from teacher- led lectures to more student-centered, inquiry- based, and collaborative models. According to review work, the most effective instructional strategies leverage technology to support differentiated learning paths, real time feedback, and peer- collaboration (Laid & Adlaon, 2024). Teachers who integrate technology with thoughtful pedagogy redesign lessons around exploration, problem solving, and digital collaboration rather than passive presentation. This shift toward improved strategies will be facilitated when schools provide not just devices but professional development in how to redesign pedagogy for digital formats (Maricic et al., 2024).

Beyond student engagement and improved strategies, technology integration plays a key role in developing 21st century skills: communication, collaboration, creativity, critical thinking, and digital literacy. Studies in life- sciences teaching found that technology integration fostered these competencies in teachers' classrooms (Ramaila & Molwele, 2022). Furthermore, in a recent study of emerging technologies like virtual reality, researchers found positive relationships between immersive digital tools and the development of higher- order thinking skills among learners (Frontiers in Psychology, 2024). However, a consistent finding is that these skills don't automatically emerge from technology use- they emerge when technology is used in well- designed tasks that challenge students and invite creativity, reflection, and collaboration (Maricic et al., 2024).

Taken together, the literature suggest that when teachers and schools integrate technology deliberately (with attention to pedagogy and context), students engage more deeply, instructional strategies improve, learners develop 21st century skills. The foreign research underscores that device- deployment alone is insufficient; meaningful integration demands redesign of task, sustained teachers support, and alignment with real- world skill development (Ramaila & Molwele, 2022; Joshi et al., 2023; Maricic et al., 2024).

Local Studies

In the Philippine context, administrative assistance is schools commonly takes the practical form of school leadership that champions ICT use, organized teacher training, and the mobilization of resources (devices, internet connectivity, technical help). Research during and after the pandemic shows principal's digital leadership including articulating a clear digital vision, allocating time for teacher learning, and coordinating device access, strongly influences how teachers respond to ICT

initiates (Tanucan, 2022). Studies of school management and support likewise report that when administrators actively plan for procurement, maintenance, and simple help- desk procedures, teachers are less likely to abandon new digital practices and more likely to sustain blended or online modes (Potane, 2024; QCU study). These Philippine studies highlight that administrative assistance is most effective when leadership, professional development, and resources are intentionally aligned rather than handled as separate tasks (Tanucan, 2022; Potane, 2024).

Local investigations show that professional development which is contextual, school- embedded, and practice- oriented builds teacher capacity better than one- time seminars. DLSU conference papers and provincial studies documented that Filipino teachers reported greater confidence and classroom uptake when training included hands- on lesson design, modelling by master teachers, and follow- up support (Navarro, 2021; Arcueño, 2021). Studies of blended- learning readiness in regions such as Nueva Viscaya point to the value of teacher clusters and peer mentoring as low-cost, high- impact professional development strategies appropriate for many public schools (Ibasco, 2023). These findings suggest that for administrative assistance to translate into readiness, training programs must be ongoing, locally relevant, and linked to teachers' everyday planning and assessment tasks (Navarro, 2021; Ibasco, 2023).

Furthermore, resource constraints remain a defining issue for many Philippine schools, especially in far- flung and rural areas. Local reviews and case studies document common barriers: limited device ratios, unstable internet connectivity, limited access to electricity, and a lack of onsite technical support, and they show how these barriers shape what administrators can realistically promise and implement (Lausa, 2024). Some local projects illustrate practical adaptations (device rotation, preloaded offline content, radio or TV supplements, and community learning hubs) that administrators and local governments can use to extend access without unrealistic budgets (Pabro, 2024; QCU assessment). The Philippine literature therefore frames resources as the "enabling" arm of administrative assistance hence without planned provisioning and simple maintenance plans, leadership and training have limited classroom effect (Lausa, 2024; Pabro, 2024).

In addition, multiple local studies examine Filipino teachers' readiness across four dimensions: skills, motivation, confidence (self- efficacy), and openness to change. TPACK focused work among Filipino senior high teachers found varied levels of technological knowledge and pedagogical adaptation, with gaps most pronounced in subject- specific digital content and advanced tool use; these gaps correlate with lower readiness for deep integration (Navarro, 2021; Arcueño, 2021). Studies of online teaching readiness and coping strategies (private and public schools) emphasize that teacher motivation and confidence improved when administrators provided clear expectations, time to practice, and visible classroom wins (Simbajon, 2021; Lausa, 2024). Research on blended learning readiness in provincial divisions indicates that teachers who receive ongoing mentoring and small- group professional development report greater openness to experimenting with new strategies especially when administrators protect tome for collaboration (Ibasco, 2023; Lausa, 2024). Overall, Philippine studies suggest teacher readiness is not static; it improves when administrative assistance actively targets both skills and the psychological conditions (motivation, confidence, openness) that sustain classroom change (Simbajon, 2021; Navarro, 2021).

Expanding this perspective, local empirical work links stronger administrative assistance and higher teacher readiness with classroom outcomes in three areas: student engagement, improved instructional strategies, and 21st century skills development. Philippine studies on learner's engagement under remote modalities show that when teachers used interactive tasks even offline tied to local contexts, student participation and task completion improve. It is an effect amplified where administrators supported teachers with materials and time (Pabro, 2024; Casilao, regional study). Case studies of blended/active learning projects in public schools report that teacher training in digital pedagogy led them to adopt more inquiry-based and collaborative strategies which, in

turn, supported problem solving and communication skills among students (QCU assessment; Navarro, 2021). The literature cautions, however, that 21st century skills develop best when tasks are intentionally designed and scaffolded; device provision alone does not guarantee these outcomes (Lausa, 2024; Pabro, 2024).

Taken together, Tanucan, (2024); Ibasco, (2023); Lausa, (2024); Pabro, (2024) stated that Philippine studies make clear, practical case: administrative assistance matters, and it matters in specific ways. Leadership that models and protects time for professional development, training that is practiced- based and sustained, and resource planning that fits local constraints are the three pillars that increase teacher skills, boost motivation and confidence, and cultivate openness; all of which then support meaningful technology integration and better student outcomes.

Synthesis

The literature consistently shows that administrative assistance is a central factor in shaping teachers' readiness to integrate technology into instruction. Effective school leadership provides direction, establishes a supportive climate, and creates the structural conditions necessary for technology adoption. When administrators set clear expectations, encourage innovation, and protect time for professional learning, teachers are more likely to develop confidence and openness toward using digital tools in their teaching.

Professional development also emerges as a key form of administrative support. Training that is continuous, contextualized, and aligned with classroom needs helps teachers build stronger technological and pedagogical skills. When teachers receive coaching, follow- up support, and hands- on learning opportunities, they become more prepared and self- assured in applying technology meaningfully. Access to adequate resources such as ICT tools, stable Internet connectivity, and proper maintenance, further strengthens their readiness, as teachers can only integrate technology effectively when they require infrastructure that is available and reliable.

Across the studies reviewed, teachers' readiness was shown to develop through the combined effects of leadership, training, and resources. These supports enhance teachers' skills, confidence, motivation and willingness to innovate, ultimately leading to improved instructional strategies and higher student engagement. Overall, the literature underscores that strong administrative assistance creates the environment, opportunities, and encouragement teachers need to successfully integrate technology into the teaching- learning process.

Theoretical Framework

The integration of technology in education is not solely dependent on the availability of digital resources but also on teachers' preparedness to effectively utilize them in classroom instruction. Teachers' readiness is shaped by various factors, among which administrative assistance plays a vital role. School administrators, through leadership, vision, provision of resources, and encouragement. To better understand this relationship, this study is anchored in contemporary theories and frameworks that highlight the interplay between leadership, teacher knowledge, and motivation in technology integration.

Recent applications of the Path- Goal Theory emphasize the leaders clarify goals, remove obstacles, and provide support to achieve desired outcomes. Originally proposed by Robert House, this theory highlights how leaders can motivate and guide members towards successful task completion. In education, this theory has been adapted to explain how administrators guide and encourage teachers in technology integration through supportive and participative leadership behaviors (Boonk & van der Schoot, 2025). By fostering clear direction and creating enabling environments, administrators enhance teachers' readiness for technology adoption.

Transformational leadership theory is recognized as a critical factor in digital transformation, particularly in schools. First introduced by James MacGregor Burns and later expanded by Bernard

Bass, this leadership approach emphasizes inspiring followers, modeling innovation, and fostering personal growth. Recent studies indicate that school leaders who inspire, model innovation, and provide individualized support contribute to teachers' willingness to integrate technology more effectively (Lorenz et al., 2023; AlAjmi, 2022). This type of leadership cultivates motivation and readiness by making teachers feel empowered to innovate in their instructional practices.

The Technological Pedagogical Content Knowledge (TPACK) framework- recently extended with Contextual Knowledge (XK) emphasizes that successful technology integration is influenced not only by teachers' technological, pedagogical, and content knowledge but also by their understanding of contextual factors such as school policies, infrastructure, and available resources (Niess, 2022). Administrative assistance plays a critical role in shaping these contextual factors, thereby directly influencing teachers' readiness for technology-enhanced instruction.

Self- determination theory explains how autonomy, competence, and relatedness drive intrinsic motivation. A recent longitudinal study demonstrated that leader, expert, and peer support foster teachers' psychological needs, resulting in more persistent and higher-quality technology integration (Hsu & Ching, 2022). Thus, administrative support not only provides resources but also nurtures teachers' motivation and readiness to adopt digital tools in teaching.

In summary, these theories provide a strong conceptual foundation for examining the relationship between administrative support and teacher readiness. Path- goal theory and Transformational Leadership highlight the role of leadership in guiding and motivating teachers; Technological Pedagogical Content Knowledge (TPACK) with Contextual Knowledge shows how organizational context affects readiness; and self- determination theory emphasizes how support structures fulfill psychological needs essential for technology adoption. Collectively, these frameworks affirm that administrative assistance is a key determinant of teacher readiness for effective technology integration in instruction.

Conceptual Framework

This study aims to know the relationship between Administrative Assistance and Teachers' Readiness in the Integration of Technology in Teaching for effective instruction in Schools of District III, Cluster 5. The following respondents are the teachers in District III, Cluster 5 of San Carlos City. They will evaluate the administrative assistance in terms of leadership, resources and training being administered to them.

Teacher will also evaluate their readiness to use technology in terms of their skills, confidence, motivation, and openness to assess themselves if they are confident and skillful enough in the integration of technology for effective instructions.

The researcher also aims to know the level of technology integration in student engagement, improved strategies and the 21st century skills to know the effectiveness of the integration of technology in the learning process.

The findings of this study will be utilized in the formulation of a faculty development plan.
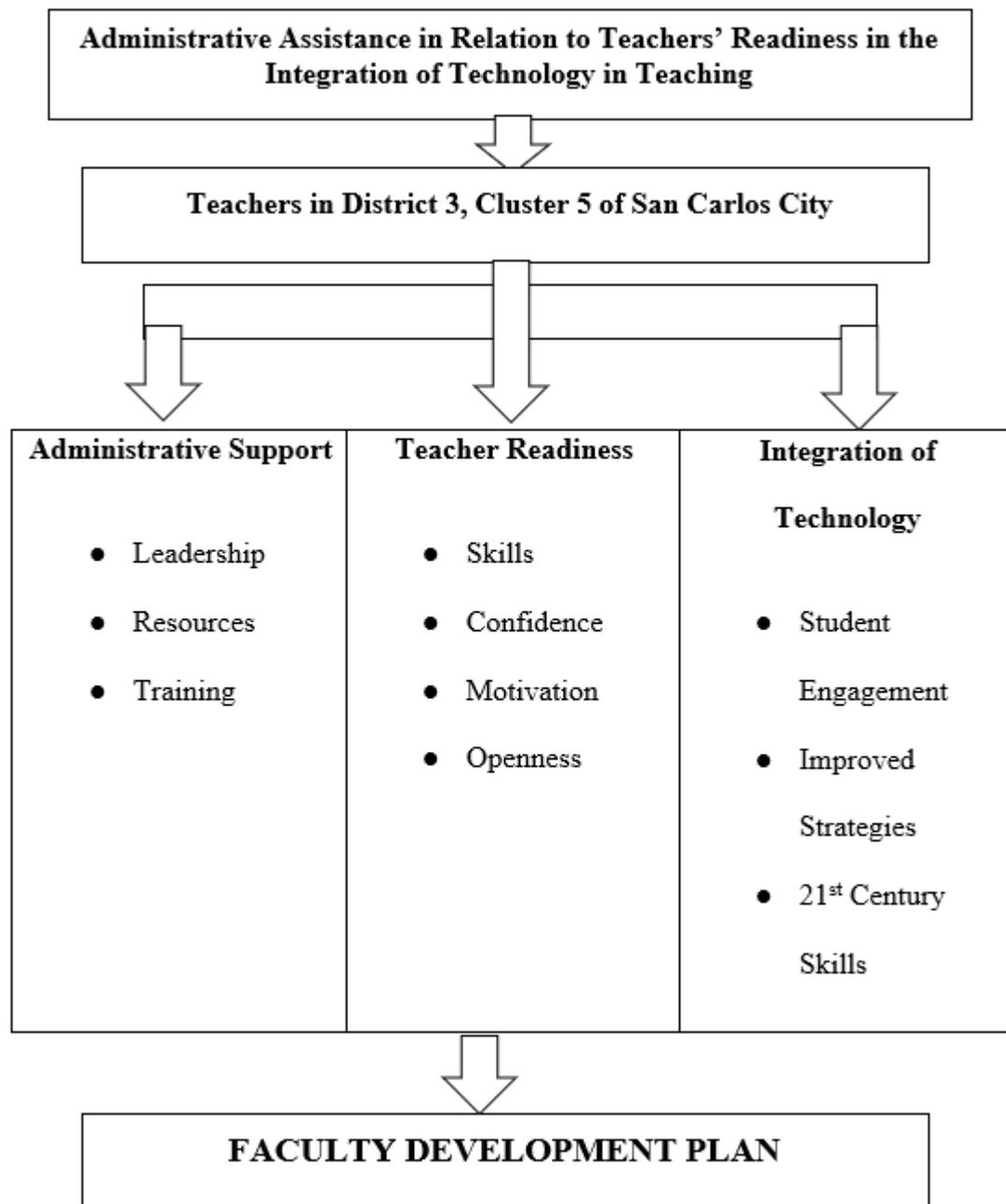
Figure 1. Conceptual Framework

Statement of the Problem

This study aims to determine the relationship of administrative assistance on teachers' readiness in the integration of technology in teaching for effective instructions in District 3, Cluster 5 of San Carlos City. This study aims to measure the level of administrative assistance given by school administrators to teachers for their readiness to integrate technology into teaching for effective instruction. Specifically, it aims to answer the following questions:

1. What is the level of administrative assistance in terms of:

a.   Leadership

b.   Resources; and

c.   Training

2. What is the level of teachers' readiness for technology integration in terms of:

a.   Skills;

b.   Confidence;

c.   Motivation; and

d.   Openness

3. What is the level of technology integration in enhancing the following:

a.   student engagement;

b.   improved strategies; and

c.   21st century skills

4. Is there a significant relationship between administrative assistance and teachers' readiness for technology integration in teaching?

5. Is there a significant relationship between administrative assistance and the effectiveness of technology-integrated instruction?

6. Is there a significant relationship between teachers' readiness and the effectiveness of technology-integrated instruction?

Alternative Hypotheses

In this study, the researcher formulated the following alternative hypotheses:

HA1. There is a significant relationship between administrative assistance and teachers' readiness in the integration of technology in teaching.

HA2. There is a significant relationship between administrative assistance and technology-integrated instruction.

HA3. There is a significant relationship between teachers' readiness and the effectiveness of technology-integrated instruction.

Significance of the Study

This study is significant because it highlights the vital role of school administrators in assisting teachers in embracing technology in teaching and learning. In an era where digital tools are becoming essential in education, understanding how administrative assistance affects teachers' readiness can help schools create a more supportive and effective learning environment.

Academic Leaders and Education Supervisors, the results can provide insights for developing training programs, policies, and framework that promote stronger administrative involvement in technology initiatives at the school level.

School Administrators, the findings may serve as a guide in planning and implementing programs that strengthen teachers' confidence and competence in technology integration. This can help them realize that their leadership, encouragement, and resource support directly influence teachers' willingness to innovate in the classroom.

Teachers, this study can raise awareness of how collaboration with administrators can enhance their professional growth. This emphasizes that readiness is not just an individual effort but a shared responsibility that thrives in a supportive school community.

Future Researchers, this study may serve as a valuable reference for further study into school leadership, teacher development, and technology integration.

Overall, this research aims to contribute to improving the quality of teaching and learning by showing that effective administrative assistance is key to preparing teachers for the demands of modern, technology-enhanced education.

Scope of the Study

This study focused on the effectiveness of administrative assistance in shaping teachers' readiness to integrate technology in classroom instruction in public elementary schools within District 3, Cluster 5, San Carlos City for the Academic Year 2025- 2026. It specifically examines how leadership, provision of resources, and professional development opportunities influence teachers' skills, confidence, motivation, and openness to use technology in teaching.

The independent variable is administrative assistance, and the dependent variable is teachers' readiness to integrate technology.

Out of the five (5) districts in public elementary schools in San Carlos City, District 3, Cluster 5 teachers and school administrators were selected as respondents through a stratified random sampling approach. Teacher respondents answered a structured survey questionnaire to provide data on administrative support and their readiness to integrate technology into their teaching. The gathered information was analyzed using a quantitative descriptive correlational research design. Descriptive statistics (frequency, percentage, weighted mean, and standard deviation) will summarize the data, while inferential statistics (Pearson's Product- Moment Correlation) will be used to interpret the relationship between administrative assistance and teachers' readiness.

This study focused only on teachers and administrators in public elementary schools in District 3, Cluster 5. It does not include teachers from private schools or those outside the selected district, nor does it account for external factors such as individual technical skills or personal attitudes toward technology. Data will also be based on self-reported responses, which reflect individual perceptions and experiences.

The findings of this study are expected to provide insights into how administrative assistance can strengthen teacher readiness in technology integration, enhance instructional practices, and support the development of more effective and innovative teaching strategies in rural public schools, such as in District 3, Cluster 5 of San Carlos City. These results may guide school administrators in creating supportive policies, training programs, and resource allocation strategies to improve technology adoption basic education especially in far flung areas.

Definition of Terms

To ensure the clarity and better understanding, the important terms used in this study were defined operationally as follows:

Administrative Assistance. In this study, administrative assistance refers to the support and guidance provided by school heads and administrators to help teachers effectively integrate technology in their teaching practices. This includes leadership that inspires teachers to innovate, attend training that builds their digital competence, and provision of resources that enable meaningful learning experiences despite limited access in far- flung schools in District 3, Cluster 5 in San Carlos City.

Confidence. Confidence refers to teachers' belief in their capability to effectively use technology in teaching. Confident teachers are not afraid to try new digital tools or strategies, knowing that doing so can improve student learning outcomes and engagement especially learners in far-flung schools of District 3, Cluster 5.

Improved Strategies. Improved strategies refer to new and enhanced teaching methods that arise from using technology in the classroom. These may include blended learning, interactive

presentations, and multimedia lessons that help teachers in District 3, Cluster 5, to meet diverse learning needs more effectively.

Integration of Technology. Integration of technology refers to the meaningful use of digital tools and resources in teaching and learning processes. In the far-flung schools of District 3, Cluster 5, San Carlos City, this involves using available technologies like tablets, projectors and online platforms to make lessons more interactive, foster student participation, and develop learners' 21st century skills despite geographical and infrastructural limitations.

Leadership. Leadership pertains to how school administrators motivate, encourage, and guide teachers toward embracing technology in education. In the context of far-flung schools in District 3, Cluster 5 in San Carlos City, it includes being a role model, creating a vision for digital learning, and ensuring that every teacher feels valued and supported in using technology for teaching and learning.

Motivation. Motivation represents teachers' inner drive and enthusiasm of to use technology as a tool for better teaching and learning. In the Philippine context, many teachers are motivated by their desire to make lessons more interactive and meaningful, despite limited facilities. In far-flung schools in District 3, Cluster 5, this motivation often comes from their passion to make learning easier and more exciting for students, even with limited resources.

Openness. Openness means the teachers' willingness to explore and accept new technologies and teaching methods. In the local context, this reflects teachers' readiness to adapt and experiment with innovative strategies that can improve their classroom instruction, even when faced with challenges like poor connectivity or lack of equipment which commonly a problem in the far- flung schools in District 3, Cluster 5.

Resources. Resources means the physical, financial, and technological materials available for teachers to integrate technology effectively. These may involve gadgets, learning devices, internet connectivity, or printed learning modules that support blended and digital learning modules that support blended and digital learning approaches in far- flung schools in District 3, Cluster 5 in San Carlos City.

Skills. Skills refer to teachers' technical knowledge and ability to operate, apply and troubleshoot basic digital tools and educational technologies. These include creating digital learning materials, using online platforms, and applying ICT-based teaching strategies suited to learners' needs especially learners in the far-flung schools in District 3, Cluster 5 in San Carlos City.

Student Engagement. Student engagement tackles about the level of attention, curiosity, enthusiasm and involvement that students show in learning when technology is used. In the context of far- flung schools like District 3, Cluster 5, technology helps connect learners to real- world experiences that deepen their understanding of lessons. This can be seen when learners actively participate in digital lessons, collaborate with classmates, or use educational apps that make learning more fun and relatable.

Teachers' Readiness. Teachers' readiness refers to the level of preparedness of teachers to adopt and use technology in their teaching. It reflects their ability, willingness and confidence to integrate digital tools in classroom instruction to make learning more engaging and relevant for students in far- flung schools in District 3, Cluster 5 in San Carlos City.

Training. Training refers to continuous learning opportunities provided to teachers to enhance their knowledge and skills in using technology. This may involve seminars, workshops, or mentoring sessions conducted by the school or the district, aimed at improving teachers' confidence and competence in handling digital tools despite connectivity and resource challenges in remote schools especially in District 3, Cluster 5 in San Carlos City.

21st Century Skills. 21st century skills are the essential abilities students must develop to thrive in the modern world, such as critical thinking, creativity, communication, and collaboration. Through technology integration, teachers in far-flung schools especially in District 3, Cluster 5, aim to equip learners with these skills to prepare them for future academic and real-life challenges.

Chapter 2

METHODOLOGY

This chapter presents the methods and procedures used in conducting the study. This section describes the research design, respondents, research instrument, data gathering procedures, and statistical treatments employed to ensure the accuracy and reliability of the findings. Through these systematic steps, the study aimed to gather relevant data and provide a clear and credible basis for examining the relationship between administrative assistance and teachers' readiness in integrating technology into teaching.

Research Design

This study employed a descriptive correlational research design. It is a quantitative approach used to describe the characteristics of variables and examine the relationship, or associations between them without manipulating the variables. In this design, researchers collect numerical data through a survey instrument, such as a survey questionnaire, summarizes them using descriptive statistics (e.g., mean, frequency, percentage), and analyze correlations to determine the strength and direction of relationships between variables. In this study, the independent variable is administrative support (leadership, resources, training), while the dependent variables are teachers' readiness (skills, confidence, motivation, openness) and technology integration in teaching (student engagement, improved strategies and 21st century skills) for effective instruction.

A descriptive correlational design was suited for this study because it allows the researcher to assess and summarize the current level of administrative support and teacher readiness in the far- flung schools of District 3, Cluster 5 of San Carlos City. It enables also the researcher to determine whether a relationship exists between administrative support and teacher readiness, and to what extent administrative support influences readiness for technology integration. Similar designs have been used in recent studies exploring school leadership and technology practices (Schmitz et al., 2023); (Pozas et al., 2022), which validates its suitability for the present research.

Respondents of the Study

The respondents of the study were consisted of 94 public elementary school teachers from eight (8) schools within the District 3, Cluster 5 under the Division of San Carlos City. Teachers were selected because they are the primary implementers of technology integration in teaching and are directly affected by the level of assistance provided by administrators. According to Gardoque and Israel (2025), focusing on teachers as respondents provides first- hand insights into the interaction between leadership practices and classroom integration.

A purposive sampling technique was used, selecting teachers who are actively teaching and have at least one year of classroom experience. This ensures that participants can provide informed perspectives on both administrative support and their readiness to use technology. The minimum sample size will be determined using Slovin's formula, targeting a confidence level of 95%. This approach is consistent with similar educational technology studies. (Durmus Cemcem et al., 2024).

Table 1. Distribution of Respondents

Respondents	f	%
Balabag ES	8	8.5
Burlad ES	8	8.5
FLES	22	23.4

Habuyo ES	8	8.5
Maglunod ES	8	8.5
Napudlan ES	8	8.5
Pinamantawan ES	8	8.5
Quezon ES	24	25.5
TOTAL	**94**	**100**

The table showed that Quezon Elementary School contributed the highest number of respondents with 24 teachers (25.5 %), followed by Florentina Ledesma Elementary School (FLES) with 22 respondents (23.4%). These two schools together account for nearly half of the total respondents, making them the most represented in the study.

In contrast, Balabag ES, Burlad ES, Habuyo ES, Maglunod ES, Napudlan ES and Pinamantawan ES each had 8 respondents (8.5%), indicating equal and relatively lower participation from these schools. While these schools represent the lowlights in terms of frequency, their inclusion is still important as it ensures that perspectives from smaller or far-flung schools are reflected.

Overall, the distribution suggested a balanced representation across multiple schools, with higher participation from larger schools and adequate inclusion of smaller ones, strengthening the credibility and coverage of the findings of the study.

Research Instrument

A structured survey questionnaire was utilized as the data- gathering instrument. It is composed of four (4) parts, namely:

The first part (1) of the survey questionnaire was designed to collect basic demographic information from the respondents, including their name, station, length of service, and position in the Department of Education. This data will help the researcher know the background of the respondents.

The second part (2) is the administrative assistance that assesses the leadership, resources, and training administer to teachers. This data focused on the level of support the teachers receive from the administrators.

The third part (3) is Teachers' Readiness that will assess in terms of their skills, confidence, motivation and openness. This refers if there is readiness in the teacher in the integration of technology for effective instructions.

The fourth part (4) is the Integration of Technology, (4) that will evaluate student engagement, improved strategies, and the 21st century skills. Items were measured using a five-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (5).

The instrument is a standardized tool adapted from validated tools used in previous research by (Chui, T. K. F. 2022; Durmus Cemcem, Korkmaz & Kukul et al., 2024) and refined to match the operational definitions of this study. To ensure reliability, the questionnaire undergone pilot testing with a small group of teachers, and Cronbach's alpha was computed.

The Likert scale allows the respondent to express the extent of their agreement with each question. All the items are rated on a Likert scale indicating the level of agreement.

Administrative Assistance

Mean Score	Descriptive Rating	Interpretation
4.21- 5.00	Strongly Agree	Administrative assistance is fully given to the teachers. Provides all the needed resources, gives consistent encouragement, training and a follow- up that will make

Mean Score	Descriptive Rating	Interpretation
		technology integration possible and effective.
3.41- 4.20	Agree	Administrative assistance is generally given to the teachers. The support is visible and helpful, but not always complete.
2.61- 3.40	Neutral	Administrative assistance is unsure to the teachers. May experience assistance from the administrators but left on their own.
1.81- 2.60	Disagree	Administrative assistance is lacking. Resources, guidance and encouragement are not regularly provided, making it harder for the teachers to integrate technology effectively in their teaching.
1.00- 1.80	Strongly Disagree	There is no administrative assistance at all. Teachers are neglected and unsupported in their efforts to use technology, which can discourage them from applying it in their instruction.

Teachers' Readiness

Mean Score	Descriptive Rating	Interpretation
4.21- 5.00	Strongly Agree	Teacher is confident and fully prepared to integrate technology in instruction. They have the necessary skills, motivation and mindset to use technology effectively in teaching.
3.41- 4.20	Agree	Teacher is generally ready to integrate technology. They have the needed skills and willingness, though they may still require occasional support, training and resources to be more effective.
2.61- 3.40	Neutral	Teacher is uncertain about their readiness. They might have some knowledge of interest but lack confidence and consistent practice in applying technology in the classroom.
1.81- 2.60	Disagree	Teacher is not adequately prepared to integrate technology. They may have limited skills, low confidence and can't face challenges that hinder their readiness.
1.00- 1.80	Strongly Disagree	Teacher is completely not ready to integrate technology in their instructions. They lack the skills, confidence and support to use as part of their teaching.

Integration of Technology

Mean Score	Descriptive Rating	Interpretation
4.21- 5.00	Strongly Agree	Teachers is consistently and effectively integrate technology in their teaching. They use digital tools, resources and strategies with confidence to enhance student learning.
3.41- 4.20	Agree	Teachers often integrate technology in their lessons. They are comfortable using it, though they may not always maximize its full potential in every subject.
2.61- 3.40	Neutral	Teachers sometimes integrate technology, but not regularly. They may use it only when needed or when

		resources are available, showing moderate application.
1.81- 2.60	Disagree	Teachers seldom integrate technology in their teaching. Limited skills, confidence and resources make it difficult for them to consistently use technology as part of instruction.
1.00- 1.80	Strongly Disagree	Teacher never integrate technology in their teaching. They may completely rely on traditional methods due to lack of access, knowledge and support.

Reliability and Validity

To ensure that the study truly reflects the realities of teachers and administrators in the schools of District 3, Cluster 5, both validity and reliability were carefully considered.

The survey questionnaire was designed with clear and simple questions so that teachers and administrators can easily understand and respond honestly based on their experiences. Before full implementation, the questionnaire was checked and tested to make sure the responses would remain steady and meaningful even if answered by different groups of teachers. In this way, the results are not just one- time answers but show a consistent picture of their readiness and the kind of support they receive.

To ensure that the study truly measures what it intend to measures, the questions directly focus on three (3) important areas: one (1) the kind of administrative support provided to teachers in terms of leadership, resources and training; two (2) teachers' readiness to integrate technology in terms of skills, motivation, confidence and openness and three (3) integration of technology in teaching in terms of students' engagement, improved strategies and 21ˢᵗ century skills.

Validity was established through three (3) expert in education and in research were consulted to review the questionnaire and confirm that the items are relevant, appropriate and aligned with the study's objectives. The Good and Scates rating system was used as the standard for evaluation, providing a structured framework for the experts to rate esch item. Experts' feedback confirmed that the questionnaire was aligned in the study variables. The research instrument achieved an overall validity rating of 5 (Excellent), indicating that all items were highly suitable for research purposes.

Reliability of the research instrument was tested using the Cronbach's Alpha to assess consistency of the results. The validated questionnaire, consisting of 50 items, was pilot- tested with 30 teachers, 15 from Trozo Elementary School and 15 from Katingal- an Elementary School. The research instrument achieved a Cronbach's Alpha coefficient of 0.981, demonstrating excellent reliability and a very high level of consistency among each items. This indicates that the research instrument reliably measures the intended area and that the items functions cohesively to assess the variable under study.

In summary, the reliability and validity processes ensure that the findings of this research are trustworthy. They provide an honest representation of how administrative support and teacher readiness connect in shaping effective technology integration in teaching, especially in the rural schools of District III, Cluster 5 where every bit of support counts in improving teaching and learning.

Data Collection Procedure

The data collection for this study follows a systematic and ethical process to ensure the reliability and integrity of the gathered information.

Before gathering the data, the researcher obtained formal approval from the Schools Division Office of San Carlos City through the School Heads of each school. Once permission was granted, a letter of informed consent was distributed to the respondents either in paper form or via secure online

forms, depending on accessibility. The forms clearly explained the purpose of the study, the voluntary nature of participation, and assurances of confidentiality and anonymity. Completed surveys were collected over a one- week period in January 2026, tallied, and prepared for statistical analysis.

Data Analysis Procedure

After gathering all the completed research questionnaires, the data gathered from the respondents was carefully organized, analyzed and interpreted using appropriate statistical tools to ensure accurate and meaningful results. Each one was carefully reviewed to ensure that the answers were complete and clearly indicated. Once verified, the data was organized and encoded into a spreadsheet in preparation for analysis.

Data was analyzed using descriptive and inferential statistics. Descriptive statistics (frequency, percentage, and mean) summarized the demographic profile of teachers and their levels of administrative assistance; teachers' readiness and integration of technology in teaching. To test the relationship between administrative support and teacher readiness; administrative assistance and the effectiveness of technology- integrated instruction and teachers' readiness and the effectiveness of technology- integrated instruction Pearson's Product–Moment Correlation Coefficient (Person's r) was employed.

Statistical Treatment

The study employed a quantitative descriptive-correlational research design consisting of two complementary components: descriptive and correlational. The descriptive component summarized and presented the data, to provide a clear overview of the levels of administrative assistance, teachers' readiness, and integration of technology in teaching. Meanwhile, the correlational component examined relationships among variables to determine how administrative assistance influences teachers' readiness in the integration of technology in teaching.

To determine the average level of administrative assistance provided by the school administration in terms of leadership, resources and training, the level of teachers' readiness in terms of skills, motivation, confidence and openness, and the integration of technology in teaching in terms of students' engagement, improved strategies and 21st century skills, frequency, percentage, and weighted mean was used. This would help identify which aspects were perceived as highly practiced or need improvement.

Finally, to find out if there is a significant relationship between administrative assistance and teachers' readiness, administrative assistance and the effectiveness of technology-integrated instruction, and teachers' readiness and the effectiveness of technology-integrated instruction, the Pearson Product-Moment Correlation Coefficient (r) was employed. This statistical tool determined the strength and direction of the relationship between the two variables.

The results of these analyses were interpreted carefully to draw conclusions that can provide meaningful insights for improving administrative support and enhancing teachers' readiness in technology integration, especially in schools of District 3, Cluster 5 in San Carlos City.

A 0.05 level of significance was applied to identify whether the results are statistically significant. The results from these analyses will guide the interpretation and conclusions of the study.

Ethical Considerations

Ethical standards were strictly observed throughout the conduct of this study to ensure the protection of the rights, dignity, and privacy of all respondents. Before the data collection began, the researcher sought formal approval from the Schools Division Office of San Carlos City through the school administrators and obtained a research permit to conduct the study within the school.

Informed consent was obtained from all participants. This includes the purpose of the study, the voluntary nature of participation, and the participant's right to withdraw at any time without penalty. All of these were clearly explained in both oral and written form. Participants were assured that their identities would remain anonymous and that the information they provided was used solely for academic purposes.

To ensure data protection, all completed questionnaires were securely stored. Only the researcher has access to the raw data. Furthermore, care was taken to ensure that no teacher felt pressured or obligated to participate in the study. The administration of the questionnaire was conducted in a neutral and non-threatening environment. Thus, allowing teachers to respond freely and honestly.

The research strictly adhered to ethical guidelines set by the educational institutions and upheld the core values of honesty, respect, and responsibility throughout all phases of the research process. (Amemasor et al., 2025).

Chapter 3

RESULTS AND DISCUSSIONS

This chapter presents and discusses the findings of the study on the level of administrative assistance and its relationship to teachers' readiness in the integration of technology for teaching. The data gathered through the research instrument were statistically treated and analyzed to address the specific problems of the study. Descriptive statistics were used to determine the level of administrative assistance in terms of leadership, resources, and training, as well as the level of teachers' readiness in terms of skills, confidence, motivation, and openness and integration of technology in teaching in terms of students' engagement, improved strategies, and the 21st century-skills. The Inferential statistical tool was employed to determine the significance of the relationship between administrative assistance, teachers' readiness for integration of technology. The results were discussed in relation to existing literature and studies to provide meaningful interpretation and to highlight their implications for school administrators, teachers, and future educational practices.

Administrative Assistance in Teachers' Readiness

Administrative assistance plays an important role in teachers' readiness to integrate technology for teaching. This support includes leadership, provision of resources, and training for professional development opportunities. The results of the study showed that when school administrators provide consistent support, teachers feel more confident and prepared to use technology for their instructional practices. This finding aligns with the TPACK framework by Mishra and Koehler (2006) underscores the importance of institutional support in helping teachers effectively combine technology, pedagogy, and content knowledge.

Administrative Assistance in Terms of Leadership, Resources and Training

Table 2 A. Leadership

Leadership	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. The school principal motivates teachers to use technology in their daily lessons.	83	11	0	0	0	94	100	**4.88**	**Very High**
2. The school principal provides opportunities for teachers to share best practices in technology integration.	80	12	2	0	0	94	100	**4.83**	**Very High**
3. The school principal clearly communicates the vision, goals	79	15	0	0	0	94	100	**4.84**	**Very High**

	SA	A	N	DA	SD	f	%	WM	I
for technology integration in teaching.									
4. The school principal builds a supportive environment where teachers feel confident to try new technology tools.	77	12	5	0	0	94	100	**4.77**	**Very High**
5. The school principal listens to the concerns of teachers regarding the use of technology in instructions.	74	16	4	0	0	94	100	**4.74**	**Very High**
Overall						470	100	4.81	**Very High**

WM = Weighted Mean; I = Interpretation; f =frequency; % = Percentage

SA = Strongly Agree; A = Agree; N = Neutral; DA = Disagree; SD = Strongly Disagree

Mean Range- Interpretation: 1.00- 1.80(Very Low); 1.81- 2.60(Low); 2.61- 3.40(Moderate) 3.41- 4.20(High); 4.21- 5.00(Very High)

Table 2A indicated that teachers in District 3, Cluster 5 of San Carlos City strongly agree that school leadership effectively supports the integration of technology, as reflected by very high weighted mean across all leadership indicators (WM= 4.81). This showed that the school principal plays a crucial role in articulating a clear vision, motivating teachers, and fostering a supportive environment for technology use. When school leaders actively promote and model digital practices, teachers are more likely to embrace technology with confidence and purpose.

The highest-rated indicator is *"The school principal motivates teachers to use technology in their daily lessons"* (M = 4.88), which reflects the principal's strong influence in inspiring and encouraging teachers to integrate technology into their instructional practices. This highlighted the importance of motivation as a key leadership function that drives teachers' willingness to adopt digital tools in the classroom.

The lowest-rated, yet still Very High, indicator is *"The school principal listens to the concerns of teachers regarding the use of technology in instruction"* (M = 4.74). Although ranked last, this result still indicates that teachers perceive their concerns as being acknowledged and addressed, reinforcing a culture of open communication and supportive leadership. Overall, the findings affirmed that strong and responsive school leadership significantly contributes to effective technology integration in teaching.

This result is consistent with recent studies that emphasizes the digital leadership significantly influences teachers' readiness and willingness to integrate technology into instruction. Principals who communicate clear goals and provide encouragement help reduce resistance to change and strengthen teachers' commitment to innovative teaching practices (Zeng et al., 2025)

Furthermore, this finding is also supported by other studies emphasizing the critical role of leadership in technology integration. Alenezi (2021) noted that supportive and transformational school leadership positively influenced teachers' attitudes and readiness toward educational technology. More recently, Nguyen, Habok, and Magyar (2023) reported that leadership support significantly predicts teachers' confidence and willingness to use technology in classroom instruction.

Additionally, the results highlight that leadership remains a vital element of administrative assistance. Strong and supportive school leadership creates a positive climate that motivates teachers, reduces resistance to change, and enhances their readiness to integrate technology effectively in the teaching- learning process.

Table 2 B. Resources

Resources	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. The school provides adequate devices (e.g. computers, tablets) for teachers to use in instructions.	46	43	4	1	0	94	100	**4.43**	**Very High**
2. The school provides technical assistance when devices are malfunction.	40	45	9	0	0	94	100	**4.33**	**Very High**
3. The school ensures that ICT facilities are available and functioning.	37	45	12	0	0	94	100	**4.27**	**Very High**
4. The school allocates budgets to support technology- based instructional needs.	39	42	12	0	0	94	100	**4.24**	**Very High**
5. The school provides stable internet access that supports teaching and learning.	42	38	12	0	0	94	100	**4.23**	**Very High**
Overall						470	100	4.30	Very High

Table 2B shows the results that teachers perceive the availability of resources as an important indicator of administrative assistance in relation to their readiness to integrate technology in teaching. Teachers in District 3, Cluster 5 in San Carlos City generally agree with weighted mean of 4.30 that resources for technology integration are available. This implies that while devices, internet access, and technical support are present, there may still be occasional limitations, particularly regarding internet stability and consistent access to functional ICT facilities. Having access to sufficient digital tools, reliable internet, and instructional materials will help them feel more capable of using technology in their lessons. When schools provide these resources, teachers can explore and apply a wider range of digital strategies, which increases their confidence and readiness to integrate technology meaningfully into instruction.

The highest-rated indicator is *"The school provides adequate devices (e.g., computers, tablets, laptops) for teachers to use in instruction"* (M = 4.43). This suggests that teachers largely perceive the availability of instructional devices as sufficient to support their daily teaching tasks. Adequate access to hardware enables teachers to integrate technology more confidently and effectively into their lessons.

Meanwhile, the lowest indicator is *"The school provides stable internet access that supports teaching and learning"* (M = 4.23) reflects teachers' recognition of reliable connectivity as a crucial component of effective technology use. Stable internet access allows teachers to utilize online resources, digital platforms, and interactive tools that enhance instructional delivery.

Above all, the results affirm that adequate resources both physical and technical play a vital role in enabling successful technology integration in teaching.

These findings are supported by recent research showing that adequate access to technological resources and infrastructure enhances teachers' ability to integrate technology. For example, a study on teachers' access to technology found that greater access to devices and connectivity was associated with higher productivity and more frequent use of educational technology in instruction (Dioquino & Paglinawan, 2024). These study highlights that positive perceptions of technology are common, the availability and quality of resources directly influences teachers' capacity and willingness to integrate technology in their classrooms.

Furthermore, the results shows that there are enough technological resources that are fundamental for fostering teachers' readiness. Administrative efforts to ensure access to functioning devices, internet connectivity, instructional materials that contribute to creating an environment where teachers feel equipped and supported to integrate technology into the teaching- learning process.

Table 2 C. Training

Training	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. The school encourage peer mentoring after training sessions.	55	35	4	0	0	94	100	**4.54**	**Very High**
2. The training programs provided are relevant to the actual teaching needs of teachers.	51	39	4	0	0	94	100	**4.50**	**Very High**
3. The school provides training programs on how to use technology in teaching.	50	39	5	0	0	94	100	**4.48**	**Very High**
4. The school principal ensures that teachers receive orientation before implementing new technology.	45	42	7	0	0	94	100	**4.40**	**Very High**
5. The school regularly conducts seminars, workshops on technology integration.	45	39	9	1	0	94	100	4.36	**Very High**
Overall						470	100	4.46	**Very High**

Table 2C presents the results for the training indicator of administrative assistance in relation to teachers' readiness to integrate technology in teaching. The overall weighted mean of 4.46 indicates that teachers in District 3, Cluster 5, strongly agree that the school provides adequate and relevant training opportunities for technology integration. The respondents acknowledged that training programs, orientations, seminars, and workshops are regularly conducted and are responsive to their actual teaching needs. Moreover, the high rating given to peer mentoring after training suggests that collaborative learning further enhances teachers' confidence and readiness to use technology in the classroom.

The indicator with the highest weighted mean is, *"The school encourages peer mentoring after training sessions"* (M = 4.54, Very High), reflects that teachers not only attend training but are also encouraged to share knowledge and collaborate, reinforcing learning in practical ways. In contrast, the lowest item is *"The school regularly conducts seminars and workshops on technology integration"* (M = 4.36, Very High) indicate consistent administrative support in preparing teachers for practical application of technology in instruction.

Additionally, these results demonstrate that the school provides comprehensive, relevant, and structured training programs, promoting skill development, confidence, and collaborative learning among teachers. The very high ratings across all indicators suggest that teachers perceive the training initiatives as effective and directly beneficial to their professional practice.

These findings are supported by recent literature emphasizing the importance of continuous and relevant professional development in technology integration. Instefjord and Munthe (2020) stressed that well-designed training programs strengthen teachers' digital competence and readiness for classroom application. Similarly, Scherer, Siddiq, and Tondeur (2021) found that professional development activities focused on pedagogical use of technology significantly improve teachers'

confidence and instructional practices. More recently, Falloon (2023) highlighted that training aligned with teachers' real classroom needs promotes meaningful and sustained integration of technology in teaching.

Overall, the results indicate that training is a vital component of administrative assistance. Continuous, needs-based, and collaborative training opportunities empower teachers with the necessary skills and confidence, thereby enhancing their readiness to integrate technology effectively in the teaching–learning process. Furthermore, training that is aligned with actual classroom demands and reinforced through mentoring is more effective in promoting long- term instructional change (Morras & Sobrino, 2025).

Table 3. Summary Table of Administrative Assistance

Indicators	Overall Mean	Descriptive Rating
Leadership	4.81	Very High
Training	4.46	Very High
Resources	4.30	Very High
Overall	**4.52**	**Very High**

Table 3 presents the summary of the levels of administrative assistance in terms of leadership, training and resources as perceived by the respondents in District 3, Cluster 5 of San Carlos City. The findings reveal that all indicators were rated Very High level, with an overall mean of 4.52, indicating strong and consistent support from school administrators.

Among the three (3) indicators, leadership obtained the highest overall mean (4.81), highlighting the vital role of school principals in motivating teachers, communicating a clear vision, and fostering a supportive environment for technology use. This suggest that effective leadership greatly influence teachers' readiness to integrate technology in teaching. According to Hallinger, 2022; Hammond and Maninger, 2023, effective school leadership plays a key role in encouraging teachers to adopt and sustain technology- integrated instruction by providing vision, guidance and motivation. Training ranked second with a mean of 4.46, reflecting that professional development programs are relevant, practical, and supported through peer mentoring and continuous learning opportunities. Teachers perceived these trainings as responsive to their actual classroom needs, enabling them to effectively apply technology in teaching. In addition to this, Continuous, hands-on professional development enhances teachers' confidence, competence, and readiness to use technology effectively, leading to more meaningful instructional practices (Trust et al., 2021; Williams et al., 2023). Meanwhile, resources received the lowest mean of 4.30, although still interpreted as Very High. This indicates that while schools generally provide adequate devices, technical support, and ICT facilities, challenges such as stable internet connectivity and budget allocation remain areas that still be improved. Furthermore, Access to adequate technological resources and timely technical assistance significantly influences teachers' ability and willingness to integrate technology in classroom instruction (Ertmer & Ottenbreit-Leftwich, 2020; Lucas, 2023).

Overall, administrative assistance in schools of District 3, Cluster 5 of San Carlos City was rated at a very high level, reflecting strong leadership, provision of resources, and structured professional development programs for training. Studies highlight that effective school leadership and administrative support directly influence teacher performance, confidence, and instructional innovation (Leithwood et al., 2020; Day et al., 2021). Providing adequate resources, clear guidance, and ongoing training empowers teachers to implement technology and adopt modern teaching strategies effectively (Nguyen et al., 2022; Harris et al., 2021). These findings emphasize that sustained administrative support is essential for fostering teacher readiness, promoting professional growth, and ensuring the successful integration of technology in the classroom.

Teachers' Readiness in Technology Integration

Teachers' readiness plays a crucial role in the effective integration of technology in teaching. This readiness includes teachers' technological skills, confidence, motivation, and openness to adopting digital tools in instructional practices. The results of the study show that teachers who demonstrate higher levels of readiness are more capable of integrating technology meaningfully in their classrooms. This finding is supported by recent research emphasizing that teachers' digital competence and self-efficacy significantly influence their willingness and ability to use technology for teaching and learning (Gudmundsdottir & Hatlevik, 2020). Furthermore, Scherer, Siddiq, and Tondeur (2021) highlighted that teachers' attitudes and readiness are strong predictors of successful technology adoption. More recently, Falloon (2023) emphasized that continuous development of teachers' digital competence strengthens effective and sustainable technology integration in education.

Teachers' Readiness in Terms of Skills, Confidence, Motivation and Openness

Table 4 A. Skills

Skills	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. I can operate basic computer functions (e.g., word processing, PowerPoint presentation)	79	15	0	0	0	94	100	**4.84**	**Very High**
2. I can create and present multimedia lessons using projectors, smart TVs and other tools.	70	23	1	0	0	94	100	**4.74**	**Very High**
3. I can assess student performance using digital assessment tools (e.g., e- class records)	69	21	3	1	0	94	100	**4.68**	**Very High**
4. I can adapt to new technology introduced in school with minimal difficulty.	57	31	6	0	0	94	100	**4.54**	**Very High**
5. I can design teaching materials using digital tools (e.g., Canva, PowerPoint and video editing apps)	56	30	6	1	1	94	100	**4.48**	**Very High**
Overall						**470**	**100**	**4.66**	**Very High**

WM = Weighted Mean; I = Interpretation; f =frequency; % = Percentage

SA = Strongly Agree; A = Agree; N = Neutral; DA = Disagree; SD = Strongly Disagree

Mean Range- Interpretation: 1.00- 1.80(Very Low); 1.81- 2.60(Low); 2.61- 3.40(Moderate) 3.41-4.20(High); 4.21- 5.00(Very High)

Table 4A presents the results for the skills indicator of teachers' readiness in the integration of technology in teaching. The overall weighted mean of 4.66 indicates a very high level of technological skills among teachers in District 3, Cluster 5 of San Carlos City. The respondents strongly agreed that they can operate basic computer functions, create and present multimedia lessons, design digital teaching materials, adapt to new technologies, and assess student performance using digital tools. These findings suggest that teachers possess the necessary technical competencies to effectively integrate technology into their instructional practices.

The highest-rated skill is, *"I can operate basic computer functions (e.g., word processing, PowerPoint presentation)"* (M = 4.84, Very High), reflects teachers' strong foundational ICT

abilities, which serve as the basis for more advanced technological tasks. While the lowest- rated skill is, *"I can design teaching materials using digital tools (e.g., Canva, PowerPoint, and video editing apps)"* (M = 4.48, Very High) indicate that teachers are capable of adjusting to new tools and creating digital resources, though these areas may benefit from further development. Overall, these results demonstrate that teachers are highly skilled, confident, and ready to utilize technology effectively in their instructional practice.

The high level of skills demonstrated by teachers aligns with recent studies emphasizing the importance of digital competence in technology integration. Gudmundsdottir and Hatlevik (2020) noted that teachers with strong technological skills are more confident and adaptable when using digital tools in the classroom. Similarly, Redecker (2020) emphasized that digital skills are a core component of teachers' professional competence and readiness for technology-enhanced teaching. More recently, Falloon (2023) highlighted that teachers who are skilled in using digital tools are more likely to design engaging lessons and implement technology in meaningful ways.

Also, the results indicate that teachers' technological skills are a strong foundation for effective technology integration. Possessing high levels of digital skills enables teachers to confidently use technology to enhance instruction, assess student learning, and adapt to emerging educational technologies.

Table 4 B. Confidence

Confidence	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. I feel confident in using technology as a regular part of my teaching.	75	19	0	0	0	94	100	**4.80**	**Very High**
2. I am confident that I can continuously improve my technology use with practice and support.	72	22	0	0	0	94	100	**4.77**	**Very High**
3. I am confident in assessing students' learning using digital platforms.	58	33	3	0	0	94	100	**4.59**	**Very High**
4. I am comfortable exploring new digital tools even without prior training.	57	33	4	0	0	94	100	**4.56**	**Very High**
5. I am confident in handling unexpected technical problems during class.	57	30	7	0	0	94	100	**4.53**	**Very High**
Overall						470	100	4.65	**Very High**

Table 4B presents the results for the confidence indicator of teachers' readiness in the integration of technology in teaching. The overall weighted mean of 4.65 indicates a very high level of confidence among teachers in District 3, Cluster 5 of San Carlos City in using technology as a regular part of their instructional practices. The respondents strongly agreed that they are comfortable exploring new digital tools, capable of handling unexpected technical problems during class, and confident in assessing students' learning using digital platforms. These results suggest that teachers possess strong self-efficacy in integrating technology, which supports effective and sustained use of digital tools in the classroom.

The highest-rated indicator, *"I feel confident in using technology as a regular part of my teaching"* (M = 4.80, Very High), reflects teachers' readiness to consistently incorporate technology into instruction. In contrast, the lowest- rated indicator is *"I am confident in handling unexpected*

technical problems during class" (M = 4.53, Very High) indicate that teachers can adapt to new tools and manage technical challenges effectively, though these areas may benefit from ongoing practice. Overall, these results demonstrate that teachers are highly confident and well-prepared to leverage technology in their instructional practice, supporting effective teaching and learning outcomes.

The findings are supported by recent studies highlighting the importance of confidence and self-efficacy in technology integration. Hatlevik et al. (2022) emphasized that teachers' ICT self-efficacy strongly predicts their frequency and quality of technology use in teaching. Similarly, Scherer and Siddiq (2021) found that confident teachers are more likely to experiment with new technologies and integrate them meaningfully into instruction. More recently, Howard, Tondeur, Siddiq, and Scherer (2023) reported that teachers' confidence plays a crucial role in overcoming challenges and sustaining technology integration in digital learning environments.

Furthermore, the results indicate that teachers' confidence is a critical component of readiness for technology integration. High levels of confidence enable teachers to navigate technological challenges, explore innovative teaching strategies, and continuously improve their instructional practices through the effective use of technology.

Table 4 C. Motivation

Motivation	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. I am motivated to continuously improve my skills in using technology for instructions.	85	9	0	0	0	94	100	**4.90**	**Very High**
2. I am motivated to attend training sessions on technology integration.	84	10	0	0	0	94	100	**4.89**	**Very High**
3. I am motivated to use technology because I believe it improves student learning.	80	14	0	0	0	94	100	**4.85**	**Very High**
4. I am eager to share my experiences and best practices in technology integration with my colleagues.	80	14	0	0	0	94	100	**4.85**	**Very High**
5. I am motivated to explore innovative teaching strategies supported by technology.	79	15	0	0	0	94	100	**4.84**	**Very High**
Overall Mean						**470**	**100**	**4.87**	**Very High**

Table 4C presents the results for the motivation indicator of teachers' readiness in the integration of technology in teaching. The overall weighted mean of 4.87 indicates a very high level of motivation among teachers in District 3, Cluster 5 of San Carlos City to use technology in their instructional practices. Teachers in District 3, Cluster 5 strongly agreed that they are motivated to integrate technology because it improves student learning, attend training sessions, continuously enhance their skills, share best practices with colleagues, and explore innovative teaching strategies. These results suggest that teachers possess strong intrinsic motivation toward technology integration, which is essential for sustained and meaningful use of digital tools in education.

The highest-rated indicator*, "I am motivated to continuously improve my skills in using technology for instruction"* (M = 4.90, Very High), reflects teachers' proactive attitude toward professional growth. The item *"I am motivated to explore innovative teaching strategies supported by technology"* is the lowest- rated indicator with a mean of (M = 4.84, Very High) shows that teachers

are ready to experiment with new approaches to enhance teaching. Overall, these findings suggest that teachers are highly motivated, enthusiastic, and committed to leveraging technology to improve instructional effectiveness and student learning.

The findings are supported by recent studies highlighting the role of motivation in technology adoption. Teo, Zhou, Fan, and Huang (2021) emphasized that teachers' motivation significantly influences their intention to use and continue using educational technologies. Similarly, Cheng, Chen, and Huang (2022) found that motivated teachers are more engaged in professional development activities and are more willing to innovate in their teaching practices. More recently, Bond et al. (2023) reported that teachers' motivation to use technology positively affects instructional creativity, collaboration, and student engagement.

Moreover, the results indicate that teachers' motivation is a strong contributor to their readiness for technology integration. Highly motivated teachers are more likely to embrace innovation, participate in continuous learning, and apply technology in ways that enhance teaching effectiveness and student learning outcomes.

Table 3 D. Openness

Openness	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. I am open to learning new ways of teaching using technology.	87	7	0	0	0	94	100	**4.93**	**Very High**
2. I am open to all the feedbacks from my colleagues and administrators on how I use technology.	83	11	0	0	0	94	100	**4.88**	**Very High**
3. I am open to collaborating with peers in exploring technology for teaching.	81	13	0	0	0	94	100	**4.86**	**Very High**
4. I am open to continuous improvement in my use of technology.	82	11	1	0	0	94	100	**4.86**	**Very High**
5. I am open to experimenting with unfamiliar digital tools in my lessons.	77	16	1	0	0	94	100	**4.81**	**Very High**
Overall						**470**	**100**	**4.47**	**Very High**

Table 4D presents the results for the openness indicator of teachers' readiness in the integration of technology in teaching. The overall weighted mean of 4.47 indicates a very high level of openness among teachers in District 3, Cluster 5 in San Carlos City toward the use of technology. The respondents strongly agreed that they are open to learning new teaching approaches using technology, experimenting with unfamiliar digital tools, collaborating with colleagues, accepting feedback, and continuously improving their technology use. These results suggest that teachers demonstrate a positive mindset toward change and innovation, which is essential for effective and sustainable technology integration.

The highest-rated indicator, *"I am open to learning new ways of teaching using technology"* (M = 4.93, Very High), reflects teachers' eagerness to adopt innovative methods. The item *"I am open to experimenting with unfamiliar digital tools in my lessons" got the lowest scores of* (M = 4.81, Very High) indicates that teachers are willing to take risks and try new approaches to enhance learning. Overall, these results suggest that teachers are highly open-minded, adaptable, and ready to integrate technology in meaningful and innovative ways.

The findings are supported by recent literature emphasizing openness as a key factor in digital transformation in education. Gudmundsdottir, Gassó, Rubio, and Hatlevik (2020) highlighted that teachers who are open to change are more adaptable and responsive to emerging technologies. Similarly, Sailer, Schultz-Pernice, and Fischer (2021) found that openness to collaboration and feedback enhances teachers' willingness to experiment with innovative teaching strategies supported by technology. More recently, van der Spoel, Noroozi, Schuurink, and van Ginkel (2023) emphasized that openness to continuous learning and peer collaboration significantly contributes to teachers' readiness for technology-enhanced instruction.

Additionally, the results indicate that openness is a strong component of teachers' readiness in integrating technology. Teachers who are receptive to learning, collaboration, and feedback are more likely to embrace innovation, refine their teaching practices, and effectively use technology to enhance the teaching–learning process.

Table 5. Summary Table of Teachers' Readiness

Indicators	Overall Mean	Descriptive Rating
Motivation	4.87	Very High
Openness	4.87	Very High
Skills	4.66	Very High
Confidence	4.65	Very High
Overall	**4.76**	**Very High**

Table 5 summarizes the levels of teachers' readiness in technology integration in teaching in terms of motivation, openness, skills and confidence. Overall the findings reveal a Very High level of teachers' readiness with an overall mean of 4.76, indicating that teachers in District 3, Cluster 5 of San Carlos City are not only capable but also highly willing and enthusiastic in using technology in teaching.

Among the indicators, motivation and openness obtained the highest mean scores of 4.87, highlighting teachers' strong intrinsic drive to continuously improve their technology- related skills and their readiness to embrace new teaching strategies. Teachers strongly believe that technology enhances student learning, which motivates them to attend trainings, explore innovative tools, and share best practices with colleagues. Meanwhile, skills (4.66) and confidence (4.66) were also rated Very High, indicating that teachers possess adequate technical competencies and self- assurance in integrating technology in teaching. The ability to operate basic computer functions, design digital teaching materials, and assess students using digital tools reflects a high level of preparedness in technology- based teaching. Moreover, teachers' confidence in handling technical challenges and adapting to new technologies suggests resilience and flexibility in modern classroom environments.

Overall, teachers demonstrated a high level of readiness in integrating technology, as reflected in their skills, confidence, motivation, and openness to innovation. Research consistently shows that teachers with strong digital and pedagogical skills and high self-efficacy are more likely to integrate technology effectively in instruction (Ertmer & Ottenbreit-Leftwich, 2020; Lucas, 2023). Moreover, supportive leadership, continuous professional development, and collaborative learning environments enhance teachers' motivation and openness to change, making technology-integrated teaching more meaningful and sustainable (Trust et al., 2021; Hammond & Maninger, 2023; Williams et al., 2023).

Integration of Technology in Teaching

Integration of technology in teaching is a multifaceted educational process that involves the use of digital tools and platforms to enhance student engagement, improve teaching strategies, and develop 21st-century skills. Technology integration supports teachers in creating interactive and engaging

lessons that encourage active student participation and interest in learning process (Bond et al., 2020). According to Sailer and Homner (2020), the effective use of technology allows teachers to present lessons in more creative and innovative ways, thereby improving instructional strategies and simplifying complex concepts. Furthermore, OECD (2021) emphasized that integrating technology in classroom instruction promotes the development of 21st-century skills such as critical thinking, communication, collaboration, and creativity. These components collectively contribute to meaningful learning experiences and highlight the importance of technology integration in enhancing the overall quality of teaching and learning.

Technology Integration in Terms of, Student Engagement, Improved Strategies and 21st Century Skills

Table 6 A. Student Engagement

Student Engagement	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. I use technology to make my lessons more interactive and engaging.	75	17	2	0	0	94	100	4.78	Very High
2. I observe that students show more interest in the lesson when technology is integrated.	73	21	0	0	0	94	100	4.78	Very High
3. I believe that integrating technology increases students' enthusiasm for learning.	73	21	0	0	0	94	100	4.78	Very High
4. I use videos, animations and multimedia to capture students' attention.	69	25	0	0	0	94	100	4.73	Very High
5. I use digital platforms to give students opportunities to share their ideas and outputs.	60	32	2	0	0	94	100	4.62	Very High
Overall						470	100	4.74	Very High

WM = Weighted Mean; I = Interpretation; f =frequency; % = Percentage

SA = Strongly Agree; A = Agree; N = Neutral; DA = Disagree; SD = Strongly Disagree

Mean Range- Interpretation: 1.00- 1.80(Very Low); 1.81- 2.60(Low); 2.61- 3.40(Moderate) 3.41- 4.20(High); 4.21- 5.00(Very High)

Table 6A presents the results for the student engagement indicator of technology integration in teaching. The overall weighted mean of 4.74 indicates a very high level of agreement among teachers in District 3, Cluster 5 that technology enhances student engagement. The respondents strongly agreed that technology helps make lessons more interactive, captures students' attention through multimedia, encourages participation through digital platforms, and increases students' enthusiasm for learning. These results suggest that technology integration plays a significant role in promoting active learning and sustaining students' interest during classroom instruction.

The highest-rated indicators, *"I use technology to make my lessons more interactive and engaging"* (M = 4.78, Very High*), "I observe that students show more interest in the lesson when technology is integrated"* (M = 4.78, Very High), and *"I believe that integrating technology increases students' enthusiasm for learning"* (M = 4.78, Very High), reflect that teachers recognize technology as an effective way to enhance classroom engagement. The item *"I use digital platforms to give students opportunities to share their ideas and outputs" got the lowest score of* (M = 4.62, Very High) shows that teachers also foster collaborative learning, though this aspect is slightly lower than other

indicators. Overall, these findings suggest that technology integration significantly contributes to making lessons more interactive, motivating students, and promoting active participation in learning.

The findings are supported by recent studies highlighting the impact of technology on student engagement. Bond et al. (2020) emphasized that the use of digital tools and multimedia promotes interactive learning and increases student participation. Similarly, Sailer and Homner (2020) found that technology-supported instructional strategies enhance students' attention and engagement by making learning activities more dynamic and interactive. More recently, Schindler et al. (2020) reported that digital platforms provide students with opportunities to actively participate, collaborate, and express their ideas, thereby strengthening engagement in the learning process.

Furthermore, the results indicate that integrating technology significantly enhances student engagement. The use of interactive tools, multimedia resources, and digital platforms creates a more stimulating learning environment that encourages participation, enthusiasm, and sustained interest among students.

Table 6 B. Improved Strategies

Improved Strategies	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. I use technology to make my teaching methods more effective.	76	18	0	0	0	94	100	**4.81**	**Very High**
2. I apply technology to provide real- world examples and applications in my lessons.	72	22	0	0	0	94	100	**4.77**	**Very High**
3. I apply technology to present lessons in more creative and innovative ways.	72	21	1	0	0	94	100	**4.76**	**Very High**
4. I use technology to supplement traditional teaching strategies with modern tools.	69	25	0	0	0	94	100	**4.73**	**Very High**
5. I use technology to simplify complex concepts for better student understanding.	68	26	0	0	0	94	100	**4.72**	**Very High**
Overall						**470**	**100**	**4.76**	**Very High**

Table 6B presents the results for the improved teaching strategies indicator of technology integration in teaching. The overall weighted mean of 4.76 indicates a very high level of agreement among teachers in District 3, Cluster 5 that technology enhances their instructional strategies. The respondents strongly agreed that technology helps make their teaching methods more effective, allows them to present lessons in creative and innovative ways, simplifies complex concepts, supplements traditional teaching approaches, and provides real-world applications during instruction. These findings suggest that technology is being used not merely as a support tool but as a means to enhance instructional quality and effectiveness.

The highest-rated indicator, *"I use technology to make my teaching methods more effective"* (M = 4.81, Very High), reflects teachers' belief that technology strengthens their instructional approaches. The lowest rated indicator is *"I use technology to simplify complex concepts for better student understanding"* (M = 4.72, Very High), showing that digital tools help make lessons clearer and more accessible. Overall, these findings suggest that technology integration allows teachers to enhance instructional methods, foster creativity, and improve student comprehension.

The results are supported by recent studies emphasizing the role of technology in improving teaching strategies. Sailer et al. (2021) found that technology-supported instructional approaches

promote active learning and enable teachers to implement more innovative and learner-centered strategies. Similarly, Koehler, Mishra, and Cain (2021) highlighted that effective technology integration allows teachers to align pedagogy, content, and technology, leading to clearer explanations and more meaningful learning experiences. More recently, Howard et al. (2023) reported that teachers who integrate technology strategically are more effective in presenting lessons, addressing diverse learners' needs, and connecting classroom instruction to real-world contexts.

Also, the findings indicate that the integration of technology significantly improves teaching strategies. By enhancing creativity, clarity, and relevance of instruction, technology enables teachers to deliver more effective and engaging lessons that support deeper student understanding.

Table 6 C. 21st Century Skills

21st Century Skills	SA	A	N	D	SD	f	%	Mean	Descriptive Rating
1. I integrate technology to encourage creativity in students output.	74	20	0	0	0	94	100	**4.79**	**Very High**
2. I use technology to strengthen students' global awareness (exposure to diverse perspectives and cultures).	70	24	0	0	0	94	100	**4.74**	**Very High**
3. I integrate technology to improve students' collaboration not only in class but also with others beyond the classroom.	69	25	0	0	0	94	10	**4.73**	**Very High**
4. I use technology to develop students' critical thinking skills.	68	26	0	0	0	94	100	**4.72**	**Very High**
5. I use technology tools to strengthen students' communication skills (oral, written and digital).	66	28	0	0	0	94	100	**4.70**	**Very High**
Overall						470	100	4.74	**Very High**

Table 6C presents the results for the 21st-century skills indicator of technology integration in teaching. The overall weighted mean of 4.74 indicates a very high level of agreement among teachers in District 3, Cluster 5 in San Carlos City that technology helps develop essential 21st-century skills among students. Teachers in District 3, Cluster 5 strongly agreed that technology supports the development of critical thinking, communication, creativity, collaboration, and global awareness. These findings suggest that technology is effectively used not only to deliver content but also to prepare students with skills needed for lifelong learning and participation in a globalized, digital society.

The highest-rated indicator, *"I integrate technology to encourage creativity in students' output"* (M = 4.79, Very High), shows that teachers prioritize fostering innovation through digital tools. The lowest- rated indicators is *"I use technology tools to strengthen students' communication skills (oral, written, and digital)"* (M = 4.70, Very High), showing that technology supports analytical and expressive competencies. Overall, these results suggest that teachers effectively leverage technology to enhance creativity, collaboration, critical thinking, communication, and global awareness, which are essential 21st-century skills.

The results are consistent with recent studies emphasizing the role of technology in developing 21st-century competencies. OECD (2021) highlighted that technology-enhanced instruction

promotes critical thinking, collaboration, and communication skills essential for modern learners. Similarly, Voogt, Erstad, Dede, and Mishra (2020) emphasized that meaningful technology integration supports creativity and higher-order thinking skills in the classroom. Furthermore, Bond, Zawacki-Richter, and Nichols (2022) recently reported that digital learning environments provide students with opportunities to collaborate, communicate, and engage with diverse perspectives, thereby strengthening global awareness and collaborative skills.

Furthermore, the findings indicate that the integration of technology plays a significant role in developing students' 21st-century skills. By encouraging critical thinking, creativity, communication, collaboration, and global awareness, technology integration supports holistic student development and aligns classroom instruction with the demands of the modern world.

Table 7. Summary Table of Integration of Technology in Teaching

Indicators	Overall Mean	Descriptive Rating
Improved Teaching Strategies	4.76	Very High
Student Engagement	4.74	Very High
21st Century Skills	4.74	Very High
Overall	**4.75**	**Very High**

Table 7 presents the summary of the technology integration in teaching in terms of improved teaching strategies, student engagement and 21st century skills. The findings present that all three indicators were rated Very High with an overall mean of 4.75. This suggest that technology integration has a strong and positive influence on both teaching and learning process.

Among the indicators, improved teaching strategies obtained the highest overall mean of 4.76, indicating that teachers in District 3, Cluster 5 of San Carlos City effectively use technology to enhance lesson delivery, simplify complex lessons and present content in more creative and innovative ways. Student engagement and 21st century skills both recorded an overall mean of 4.74, reflecting that technology plays a crucial role in capturing students' attention, increasing their interest and sustaining enthusiasm for learning.

Overall, the integration of technology in teaching in District 3, Cluster 5 in San Carlos City was found to be at a high level, indicating that teachers effectively use digital tools to support instruction, enhance student engagement and promote the development of 21st century skills. Research shows that well- integrated technology improves instructional delivery by making lessons more interactive, learner- centered, and responsive to diverse learning needs (Koehler et al., 2021; Schindler et al., 2022). Furthermore, technology supported teaching has been associated with increased student participation, collaboration, and higher- order thinking when aligned with sound pedagogical practices (Bond et al., 2020; Falloon et al., 2022). These findings affirms that technology integration becomes more meaningful and impactful when guided by clear instructional goals and supported by continuous teachers development.

Administrative Assistance and Teachers' Readiness

This part presents the findings on administrative assistance and teachers' readiness for technology integration in teaching. It highlights how leadership support, training opportunities and availability of resources contribute to teachers' skills, confidence, motivation and openness. By examining these factors, the discussion provides a clear understanding of how administrative assistance helps prepare teachers to effectively integrate technology in teaching.

Table 8. Relationship between Administrative Assistance and Teachers' Readiness for Technology Integration in Teaching

Variables	r	P-value	n	Interpretation
Administrative Assistance and teachers' Readiness for Technology Integration in Teaching	0.954	0.012	94	Very Strong Positive Relationship

0.05 Level of Significance df = n – 1

Legend:

r = Pearson correlation coefficient

p = Probability value

n = number of respondents

Decision Rule:

✓ If p ≤ 0.05 = Significant (Reject Ho)

✓ If p ≥ 0.05 = Not Significant (Fail to Reject Ho)

Strength of Relationship (r):

✓ 0.19 = Very Weak

✓ 0.20- 0.39 = Weak

✓ 0.40- 0.59 = Moderate

✓ 0.60- 0.79 = Strong

✓ 0.80- 1.00 = Very Strong

The correlation analysis as presented in Table 8 revealed that there is a significant correlation between administrative assistance and teachers' readiness for technology integration in teaching in District 3, Cluster 5, the Pearson r is 0.954 with the interpretation very high to obtain positive correlation and the p- value is 0.012. This implies that as administrative assistance increases, the teachers' readiness for technology integration in teaching also increases.

This result is consistent with recent studies which emphasize that effective school leadership and administrative assistance significantly influence teachers' readiness for technology integration in teaching by fostering a supportive environment and providing continuous training opportunities (Gardoque & Israel, 2025; Mane, 2025). Moreover, within the framework of technology integration theories such as TPACK, teachers' readiness is not solely dependent on individual competence but is strongly influenced by institutional and administrative support systems. Hence, the very high correlation found in this study underscores the critical role of administrators in enhancing teachers' readiness for technology integration in teaching, ultimately contributing to more effective and innovative teaching practices.

Furthermore, according to (Stavermann, 2025), teachers are more likely to view technology as an integral part of modern education when they receive strong professional development opportunities and ongoing support from school leaders. For example, studies indicate that administrative prioritization of technology-focused professional development and technical support enhances teachers' competencies and confidence in integrating digital tools into instruction, leading to more meaningful and sustained classroom use (Stavermann, 2025). This aligns with broader findings that leadership support and quality professional learning are key facilitators of successful technology integration (Stavermann, 2025).

Administrative Assistance and the Effectiveness of Technology- Integrated Instruction

This part presents discusses the relationship between administrative assistance and the effectiveness of technology- integrated instruction. It focuses on how leadership support, adequate resources, and relevant training enable teachers to deliver more engaging lessons, apply improved teaching strategies and promote the development of 21st century skills among students. The findings highlight the role of administrative assistance in strengthening meaningful and effective technology use in the classroom.

Table 9. Relationship between Administrative Assistance and the Effectiveness of Technology-Integrated Instruction

Variables	r	P-value	n	Interpretation
Relationship between administrative assistance and the effectiveness of technology- integrated instruction.	0.974	0.005	94	Very Strong Positive Relationship

0.05 Level of Significance df = n - 1

The results presented in Table 9 shows that there is a linear correlation between administrative assistance and effectiveness of technology- integrated instructions in District 3, Cluster 5. It reveals a very high positive relationship between administrative assistance and the effectiveness of technology-integrated instruction in District 3, Cluster 5. The computed Pearson correlation coefficient (r = 0.974) indicates that as the level of administrative assistance increases, the effectiveness of technology integration in instruction also significantly improves. This relationship is further supported by the obtained p-value of 0.005, which means there is a significant relationship between these two variables.

These findings shows that strong administrative support—such as leadership guidance, provision of resources, and institutional encouragement—plays a crucial role in enhancing teachers' ability to effectively integrate technology in the teaching-learning process. When administrators actively support technology-related initiatives, teachers are more likely to utilize digital tools efficiently, resulting in improved instructional delivery and student engagement.

This result is consistent with the statement of According to Akram, Abdelrady, Al-Adwan, and Ramzan (2022), effective technology integration requires teachers to possess positive attitudes, technological knowledge, and pedagogical skills, as these factors significantly influence the successful use of digital tools in teaching-learning practices. In this context, administrative assistance serves as a vital foundation that enables both teachers and students to maximize the benefits of technology-integrated instruction.

Teachers' Readiness and the Effectiveness of Technology- Integrated Instruction

This part examines the relationship between teachers' readiness and the effectiveness of technology- integrated instruction. It explores how teachers' skills, confidence, motivation and openness influences student engagement, improved teaching strategies and the development of 21st century skills. The discussion highlights the importance of teachers' readiness in ensuring that technology was used meaningfully and effectively in the teaching and learning process.

Table 10. Relationship between Teachers' Readiness and the Effectiveness of Technology-Integrated Instruction

Variables	r	P-value	n	Interpretation
Relationship between teachers' readiness and the effectiveness of technology- integrated instruction.	0.987	0.001	94	Very Strong Positive Relationship

0.05 Level of Significance df = n – 1

The results in Table 10 indicate a very high and a significant relationship between teachers' readiness and the effectiveness of technology-integrated instruction in District 3, Cluster 5 teachers. The correlation result using the Pearson r = 0.987 which was gaining the verbal description of very high correlation with p- value of 0.001. This means that as teachers are more prepared in terms of knowledge, confidence, and willingness to integrate technology, the more effective technology use becomes in the classroom. The findings align with a body of educational research that highlights teachers' readiness as a critical predictor of successful technology integration rather than mere access to digital tools.

Scholars emphasize that teachers' knowledge, beliefs, and self-efficacy are central determinants of whether technology enhances teaching and learning. For instance, research using the TPACK model shows that a teacher's technological, pedagogical, and content knowledge together strongly influence how effectively they implement technology in lessons, which in turn supports deeper student engagement and improved learning outcomes. Teachers who are confident and competent are more likely to adopt innovative tools in meaningful ways rather than superficially using them.

Moreover, studies in different educational contexts consistently show that teacher's readiness and confidence in using technology are strongly linked with how often and how effectively they integrate it into classroom practice. In one correlational study of Jessa S., Carcosia, M. J. M., & Ricaforte, R. M. (2025), early childhood educators who demonstrated high confidence and consistent use of digital tools also had students with higher cognitive, emotional, and social engagement levels.

Much of the literature also points out that professional development and structured training play a pivotal role in building teachers' readiness. According to Williams et al. (2023), teacher preparation programs that build self-efficacy in technology use through hands-on experiences, reflection, and supportive environments significantly enhance teachers' capacity to integrate technology effectively. This supports the interpretation that readiness doesn't just come from having technology available it comes from developing the skills and confidence to use it well.

The findings reinforce the view that technology integration is not merely about the presence of devices or software it is about how teachers understand, plan, and choose to incorporate these tools into pedagogically sound practices. Research shows that teachers with positive attitudes and strong technological competence are more likely to use technology in ways that enhance interaction, collaboration, and student motivation all aspects that contribute to educational effectiveness.

It's also important to recognize that institutional support and leadership can amplify this relationship. Schools that provide ongoing professional development, supportive policies, and collaborative cultures give teachers the environment they need to move from basic use to effective integration. Studies on digital preparedness suggest that when teachers feel supported by their institutions, their technology use becomes more strategic and aligned with learning goals.

Theoretical Discussion

Viewed from the results of this study on administrative assistance in relation to teachers' readiness in the integration of technology in teaching, the overall analysis of the findings revealed that the school in District 3, Cluster 5 of San Carlos City demonstrates strong potential in supporting effective technology integration through leadership, resources, and training, which are key drivers of teachers' readiness. These elements correspond to fundamental aspects of effective educational innovation theory, where institutional support, digital competence, and professional development collectively shape teachers' preparedness and instructional behavior. The results showed that when administrators provide clear direction, equitable access to digital tools, and ongoing professional

development, teachers feel more confident, capable, and motivated to integrate technology meaningfully in their classrooms (De Guia & Solomon, 2024; Frontiers, 2025). Likewise, teachers exhibited high levels of readiness in skills, confidence, motivation, and openness, which are essential characteristics of educators who successfully integrate technology into instruction; such readiness enhances not only teachers' own digital competence but also the quality of student learning experiences (Abella & Rosa, 2023; Frontiers, 2025). Moreover, the findings indicate that this technological readiness translated into high levels of student engagement, improved teaching strategies, and development of 21st-century skills, suggesting that technology is being used not just as a tool but as an integral component of pedagogical practice (Khanvises, 2025; Frontiers, 2025; UNESCO, 2023).

These insights suggest that advancing educational outcomes through technology depends on holistic support systems that go beyond providing devices; it requires visionary leadership, continuous professional development, and an environment that encourages experimentation and collaboration. As emphasized in recent digital competence research, effective integration occurs when teachers receive structured support that builds both confidence and pedagogical application, resulting in richer, more dynamic learning environments (e.g., Frontiers, 2025; Abella & Rosa, 2023; Khanvises, 2025).

Chapter 4

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

This chapter presented the summary of the major findings of the study on administrative assistance in relation to teachers' readiness in the integration of technology in teaching. It also discusses the conclusions drawn from the results of the statistical analyses and provides recommendations based on the findings of the study. The conclusions are formulated in accordance with the objectives and hypotheses of the research, while the recommendations are intended to serve as practical inputs for school administrators, teachers, and future researchers in improving administrative support and enhancing teachers' readiness for effective technology integration.

Summary of Findings

The primary objective of this study was to determine the role of administrative assistance in relation to teachers' readiness in integrating technology in teaching.

Administrative support in District 3, Cluster 5 of San Carlos City was rated "Very High" with an overall mean of 4.52. Among the three indicators, leadership has the highest score (M= 4.81), followed by training (M= 4.46) and resources (M= 4.30). Based on the data, administrative support plays a significant role in enhancing teachers' readiness across various aspects of technology integration, with leadership having the highest impact and resources showing the least influence.

On the other hand, teachers' readiness in District 3, Cluster 5 of San Carlos City was rated "Very High" with an overall mean of (M= 4.66). Among the four indicators, motivation got the highest score (M= 4.87), then followed by openness (M= 4.47), next was confidence that received the score of (M= 4.65) and lastly, openness with the score of (M= 4.47). This means that teachers in District 3, Cluster 5 are ready to integrate technology in teaching.

Furthermore, technology integration in teaching in District 3, Cluster 5 of San Carlos City was rated "Very High" with an overall mean of (M= 4 .75). Among the three indicators, improved strategies received the highest score of (M= 4.76), while students engagement and 21st century skills got the same scores of (M= 4.74), indicating that teachers in District 3, Cluster 5 apply technology integration in teaching.

Additionally, administrative assistance is strongly associated with teachers' readiness for technology integration in teaching. The findings reveal a very strong positive relationship between

administrative assistance and teachers' readiness for technology integration in teaching (r= 0.954, p= 0.012). This indicates that higher levels of administrative assistance in terms of leadership, training and resources are closely linked to higher levels of teachers' skills, confidence, motivation and openness.

The significant p- value of 0.012 further confirms that this relationship is not due to chance, emphasizing the crucial role of administrators in preparing teachers for technology- integrated instruction. Simply put, when teachers feel supported by their school administrators, they are more ready, willing and capable of integrating technology effectively in their classrooms.

In addition to this, strong administrative assistance greatly enhances the effectiveness of technology- integrated instruction. The results show a very strong positive relationship between administrative assistance and the effectiveness of technology integrated instruction (r= 0.974, p= 0.005). This indicates that higher levels of administrative assistance particularly in leadership, training and resources are closely associated with more engaging lessons, improved teaching strategies, and stronger development of 21st century skills.

This statistically p- value of 0.005 confirms that this relationship is meaningful. These findings suggest that when school administrators actively support teachers, technology is used more effectively in the classroom, leading to richer learning experiences and better instructional outcomes for students.

Lastly, teachers' readiness is the key driver of effective technology- integrated instruction. The findings reveal a very strong positive relationship between teachers' readiness and the effectiveness of technology- integrated instruction (r= 0.987, p= 0.001). This indicates that teachers who demonstrate higher levels of skills, confidence, motivation and openness are more likely to implement technology in ways that actively engage students, enhance teaching strategies and develop essential 21st century skills.

The highly significant p- value of 0.001 confirms that this relationship is strongly significant, emphasizing that teachers' readiness plays a critical role in maximizing the benefits of technology in the classroom. In essence, when teachers are well- prepared and receptive to technology use, instruction becomes more meaningful, interactive and effective for learners.

Conclusions

Based on the findings of the study, the following conclusion were drawn:

Administrative Assistance. Administrative assistance in District 3, Cluster 5 in terms of leadership, resources, and training was perceived at a very high level, indicating that school administrators play a crucial role in supporting technology integration in teaching. Strong instructional leadership, the availability of adequate technological resources, and well-structured training programs create an enabling environment where teachers feel guided, supported, and prepared to use technology effectively. These forms of administrative assistance help establish clear direction, provide necessary tools, and continuously build teachers' capacities for technology-enhanced instruction.

Teachers' Readiness. Teachers' readiness in District 3, Cluster 5 in terms of skills, confidence, motivation, and openness was also found to be very high, suggesting that teachers are well-prepared and willing to integrate technology into their teaching practices. Teachers possess strong digital skills, feel confident in using technology during instruction, remain highly motivated to improve their technological competencies, and are open to learning, collaboration, and innovation. This readiness reflects a positive mindset toward change and professional growth, allowing teachers to adapt to new technologies and instructional approaches with ease.

Integration of Technology. The integration of technology in teaching in District 3, Cluster 5, as reflected in student engagement, improved teaching strategies, and the development of 21st-century skills, was perceived at a very high level. Teachers reported that technology enhances student participation and interest, supports more effective and creative instructional strategies, and helps develop learners' creativity, collaboration, communication, critical thinking, and global awareness.

Administrative Assistance and Teachers' Readiness. The study found that strong administrative support significantly enhances teachers' readiness to integrate technology in their classrooms. When school leaders provide clear guidance, timely resources, and moral encouragement, teachers in District 3, Cluster 5 of San Carlos City feel more confident and capable of using digital tools effectively. The Department of Education schools can sustain this progress by institutionalizing regular training programs (LAC), mentoring, and support systems, ensuring that teachers continuously adapt to evolving educational technologies.

Administrative Assistance and the Effectiveness of Technology- Integrated Instruction. Administrative assistance plays a crucial role in the successful implementation of technology-integrated instruction. Schools in District 3, Cluster 5 of San Carlos City where principals and administrators actively facilitate access to devices, internet connectivity, and technical support experience higher levels of instructional effectiveness. By embedding technology support policies and allocating resources for maintenance and upgrades, Department of Education can ensure that technology integration remains effective and accessible even in the long term.

Teachers' Readiness and the Effectiveness of Technology- Integrated Instruction. Teachers who are well-prepared, confident, and skilled in using digital tools deliver more effective technology-enhanced lessons, improving student engagement and learning outcomes. Continuous professional development, peer collaboration, and reflective teaching practices should be promoted within Department of Education to maintain teachers' readiness, ensuring that technology continues to enhance learning in all schools, including remote and far-flung areas especially in District 3, Cluster 5 of San Carlos City.

Overall, the findings confirm that strong administrative assistance, coupled with high teachers' readiness, contributes significantly to effective technology integration in teaching, ultimately promoting meaningful learning experiences and preparing students for the demands of the 21st century.

Recommendations

School Administrators and School Heads. The school administrators are encouraged to institutionalize regular needs- based technology training program for teachers. It is recommended that school administrators and school heads use the findings of this study to strengthen administrative support systems that facilitate teachers' integration of technology in teaching. By providing continuous training, technical assistance, and access to relevant digital resources, teachers' confidence and readiness in utilizing technology for instruction can be significantly enhanced.

Teachers. Teachers are encouraged to actively participate in professional development programs, training workshops, and mentoring sessions offered by the school or administrative staff. This will help them develop the necessary skills and confidence to integrate technology effectively in their teaching practices.

IT Support Staff and Educational Technology Coordinators. These personnel should provide timely and ongoing technical support, guidance, and troubleshooting assistance to teachers. By doing so, teachers will be more likely to adopt and sustain the use of technology in their classrooms, ensuring smoother implementation of digital learning strategies.

Future Researchers. It is suggested that future researchers conduct further studies on teachers' readiness and administrative support in technology integration across other schools, districts, or regions. Future research may also explore related topics such as the impact of continuous professional development, the effectiveness of digital tools in instruction, or the role of school leadership in promoting technology adoption in education.

Proposed Faculty Development Pan

This proposed Faculty Development Plan for Administrative Assistance in Relation to Teachers' Readiness in the Integration of Technology in Teaching is designed to provide an organized and structured framework based on the key indicators of administrative assistance namely leadership, resources, and training and teachers' readiness, including skills, confidence, motivation, and openness, to guide the effective integration of technology in teaching. The plan aims to strengthen instructional practices, enhance student engagement, and promote the development of 21st-century skills through sustained administrative support and faculty development initiatives in District 3, Cluster 5 of San Carlos City.

Context

Schools in District 3, Cluster 5 in San Carlos City has continuously demonstrated its commitment to academic excellence and institutional improvement through responsive leadership and innovation in teaching and learning. With the increasing demand for technology-enhanced instruction, the integration of digital tools in teaching has become essential in preparing students for the challenges of a rapidly evolving, technology-driven society.

Despite the availability of technology and the generally high level of teachers' readiness, challenges remain in ensuring sustained administrative support, continuous professional development, and effective utilization of technological resources. The findings of the study revealed that while teachers in District 3, Cluster 5 in San Carlos City shows a very high level of administrative assistance and teachers' readiness, there is a need for a structured and long-term development plan to strengthen leadership support, optimize resources, and institutionalize continuous training programs. Without a systematic plan, technology integration efforts may remain fragmented and inconsistent.

Furthermore, the results indicate that technology integration positively influences student engagement, improved teaching strategies, and the development of 21st-century skills. However, to maximize these outcomes and ensure sustainability, a 3-Year Faculty Development Plan for Administrative Assistance in Relation to Teachers' Readiness in the Integration of Technology in Teaching

Rationale

The formulation of this Faculty Development Plan for Administrative Assistance in Relation to Teachers' Readiness in the Integration of Technology in Teaching will serve as a strategic guide for the school administration in District 3, Cluster 5 in managing faculty development programs, allocating resources, and implementing sustainable technology integration initiatives. The plan is intended to help the institution capitalize on teachers' high readiness, address existing challenges in training and resource utilization, and strengthen administrative practices that support innovation in teaching.

Moreover, this plan provides a clear mechanism for monitoring and evaluating technology integration efforts, ensuring that administrative assistance and teachers' readiness are aligned with institutional goals and student learning needs. Through this plan, technology integration is envisioned not merely as a tool for instruction but as a catalyst for improved teaching quality and enhanced learning outcomes.

General Objectives

To develop a 3-year Faculty Development Plan for Administrative Assistance in Relation to Teachers' Readiness in the Integration of Technology in Teaching that strengthens administrative assistance and enhances teachers' readiness for effective technology integration in teaching in District 3, Cluster 5 in San Carlos City.

1. To identify and organize faculty development activities related to leadership, resources, and training in a systematic and chronological manner.

2. To allocate available resources efficiently to support technology-related faculty development initiatives.

3. To establish clear monitoring and evaluation mechanisms to assess the effectiveness of technology integration efforts.

4. To identify specific offices and personnel responsible for the implementation, monitoring, and sustainability of the proposed development plan.

Table 1. Faculty Development Plan Matrix

Objectives	Strategies / Activities	Timeline	Estimated Budget	Agencies / Persons Involved	Success Indicators
Strengthen leadership support for technology integration	Conduct digital and instructional leadership training; formulate and disseminate a clear school-wide technology integration vision; hold regular consultative meetings with teachers	June 2026 – May 2027	₱250,000	School Principal; School Administrators; ICT Coordinator; External ICT Trainers	Improved leadership support ratings; established and implemented technology integration plan
Improve availability of technological resources	Upgrade internet connectivity and digital devices; procure licensed educational software; establish ICT maintenance and support team	June 2026 – May 2028	₱3,000,000	School Administration; ICT Department; Finance Office; External Partners	Increased availability of functional ICT resources; reduced technical disruptions
Enhance teachers' professional development through training	Conduct regular ICT workshops and seminars; implement peer mentoring and coaching; provide	July 2026 – April 2028	₱500,000	School Administrators; ICT Trainers; Master Teachers	Increased teacher participation in training; improved readiness scores

	orientation before new technology adoption				
Improve teachers' technological skills	Hands-on training on multimedia lesson design, digital assessment tools, and online platforms; skills-based certification programs	August 2026 – March 2028	₱400,000	ICT Trainers; Department Heads; External Experts	Improved teacher digital skills; increased use of digital instructional materials
Strengthen teachers' confidence in technology use	Coaching and mentoring programs; classroom-based technical assistance; recognition of best technology practices	June 2026 – December 2027	₱200,000	School Heads; ICT Coordinators; Peer Mentors	Higher teacher confidence ratings; reduced resistance to technology integration
Increase teachers' motivation toward technology integration	Incentive and recognition programs; support attendance in ICT-related conferences and seminars	July 2026 – May 2028	₱300,000	School Administration; HR Office; Faculty Development Committee	High motivation levels; increased sharing of best practices
Promote openness to innovation and collaboration	Establish professional learning communities (PLCs); collaborative technology-based lesson planning; feedback and reflection sessions	June 2026 – May 2028	₱150,000	Department Heads; Teachers; School Administrators	Active participation in PLCs; improved collaboration
Enhance student engagement through technology	Integrate interactive digital tools, multimedia resources, and learning	SY 2026–2028	Included in Training Budget	Teachers; ICT Coordinators	Increased student engagement and participation

	management systems in teaching				
Improve teaching strategies using technology	Integrate technology in lesson planning; use real-world digital applications	SY 2026–2028	Included in Training Budget	Teachers; Academic Coordinators	More innovative and effective teaching strategies
Develop students' 21st-century skills	Implement collaborative digital projects; technology-supported critical thinking and creativity activities	SY 2026–2028	Included in Training Budget	Teachers; Students; ICT Coordinators	Improved student collaboration, creativity, and critical thinking

References

1. Abella, J. L., & Rosa, E. D. (2023). Digital literacy and digital competence of selected Filipino teachers: Basis for a post-pandemic pedagogy. *International Journal of Recent Educational Research, 4*(5), 548-569.

2. Ahiaku, P. K. A., Uleanya, C., & Muyambi, G. C. (2025). Rural schools and tech use for sustainability: The challenge of disconnection. *Education and Information Technologies, 30*(9), 12557–12571. https://doi.org/10.1007/s10639-024-13311-9

3. Akabayashi, H., et al. (2024). Evidence from school closures in Japan during the COVID-19 pandemic: School ICT equipment, teachers' IT skills, and online education provision. *International Review of Education / Comparative Education (article)*. https://doi.org/10.1080/09645292.2024.2362917

4. Akram, H., Abdelrady, A. H., Al-Adwan, A. S., & Ramzan, M. (2022). Teachers' perceptions of technology integration in teaching-learning practices: A systematic review. *Frontiers in Psychology*, 13. https://doi.org/10.3389/fpsyg.2022.920317

5. AlAjmi, M. K. (2022). Transformational leadership for technology integration in schools: Empowering teachers to use technology in a more demanding way. *Education and Information Technologies, 27*(5), 6311–6330. https://doi.org/10.1007/s10639-022-11003-2

6. Alenezi, A. (2021). The role of school leadership in promoting teachers' readiness for technology integration. *Education and Information Technologies, 26*(5), 6021–6041. https://doi.org/10.1007/s10639-021-10548-1

7. Alshammari, M. (2021). The role of school management in supporting teachers' technology integration: A case study. *Education and Information Technologies*, 26(3), 3211–3230. https://doi.org/10.1007/s10639-021-10479-2

8. Amemasor, S. K., Opoku Oppong, S., Ghansah, B., Benuwa, B.-B., & Danso Essel, D. (2025). A systematic review on the impact of teacher professional development on digital instructional integration and teaching practices. *Frontiers in Education*. https://doi.org/10.3389/feduc.2025.1541031

9. Arcueño, G. G. (2021). Technological pedagogical content knowledge (TPACK) among Filipino teachers. *DLSU conference paper*. Available: https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2021/LLI-16.pdf

10. Bello, S., & Johnson, A. (2022). Digital resources and teacher competency in technology-enhanced classrooms. *International Journal of Educational Technology*, 9(2), 55–68. https://doi.org/10.20429/ijet.2022.090205

11. Bergdahl, N., & Nouri, J. (2024). Unpacking student engagement in higher education learning environments: A technology perspective. *International Journal of Educational Technology in Higher Education.* https://doi.org/10.1186/s41239-024-00493-y

12. Bond, M., Bedenlier, S., Marín, V. I., & Händel, M. (2023). Emergency remote teaching in higher education: Mapping the first global online semester. *International Journal of Educational Technology in Higher Education, 20*(1), 1–24. https://doi.org/10.1186/s41239-023-00398-4

13. Boonk, L., & van der Schoot, M. (2025). Leadership support and teacher technology integration: A Path–Goal perspective. *Frontiers in Education, 10*, 1586296. https://doi.org/10.3389/feduc.2025.1586296

14. Çam, Ş. S. (2024). Professional development program to develop teacher educators' TPACK: Implementation and outcomes. *Sage Open (or relevant journal; program evaluation article)*. https://doi.org/10.1177/21582440241242841

15. Caneva, C., Monnie, E., Pulfrey, C., El-Hamamsy, L., Avry, S., & Delher Zufferey, J. (2023). Technology integration needs empowered instructional coaches: Challenges of mentoring teachers in digital skills development. *International Journal of Management in Education, 12*(2), 194–210.

16. Casilao, D. P. (2024). Teachers' professional development, technology integration, and learners' engagement: Schools Division of Passi City. (*IJSMS (local journal)*). Available: https://www.ijsmsjournal.org/2025/volume-8%20issue-1/ijsms-v8i1p103.pdf

17. Celeste, R. J., & Nimfa, O. (2023). Challenges and Implementation of Technology Integration: Basis for Enhanced Instructional Program. *American Journal of Arts and Human Science, 3(2)*. https://doi.org/10.54536/ajahs.v3i2.2656

18. Çelik, İ. (2023). Towards Intelligent-TPACK: Teacher knowledge to ethically integrate AI-based tools into education. *Computers in Human Behavior, 138, 107468*. https://doi.org/10.1016/j.chb.2022.107468

19. Cheng, Y. M., Chen, K. S., & Huang, H. Y. (2022). Teachers' intentions to use educational technology: The roles of motivation and perceived usefulness. *Education and Information Technologies, 27*(5), 6541–6560. https://doi.org/10.1007/s10639-021-10769-4

20. Chiu, T. K. F. (2022). School learning support for teacher technology integration from a self-determination theory perspective. *Educational Technology Research and Development, 70*(3), 931–949. https://doi.org/10.1007/s11423-022-10096-x

21. De Guia, E. F., & Solomon, J. Y. (2024). Unlocking online teaching potential: Investigating teacher readiness with adaptability and ICT facilities. *International Journal of Research and Innovation in Social Science.*

22. Del Mundo, H. J. C. (2022). 21st Century Digital Skills, Technology Integration in Instruction and Challenges Encountered by Senior High School Teachers in Muntinlupa National High School. *IJMRA, 5(5)*. https://doi.org/10.47191/ijmra/v5-i5-35

23. Durmuş Çemçem, G., Korkmaz, Ö. & Kukul, V. (2024). Readiness of teachers for blended learning: A scale development study. *Education and Information Technologies, 29*, 23631–23655. https://doi.org/10.1007/s10639-024-12777-x

24. Educational Technology Research and Development. (2025). Evaluating technology integration in education: *Framework for teacher development*. https://doi.org/10.1007/s44217-025-00448-z

25. El-Sayad, G., Sleem, W., & El-Houseny, A. (2021). Leadership practices and technology acceptance among teachers. **Journal of Education and Learning*,* 10(4), 42–53. https://doi.org/10.5539/jel.v10n4p42

26. Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2020). Teacher technology change: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education, 52*(3), 1–15. https://doi.org/10.1080/15391523.2020.1726020

27. Falloon, G. (2023). From digital literacy to digital competence: The teacher digital competency (TDC) framework. *Educational Technology Research and Development, 71*(1), 1–24. https://doi.org/10.1007/s11423-022-10120-3

28. Frontiers. (2025). The influence of school principals' digital leadership on teachers' competency in integrating artificial intelligence: A systematic thematic review. *Frontiers in Education.*

29. Frontiers in Psychology. (2024). The impact of virtual reality on student engagement in the classroom. *Frontiers in Psychology,* 15, Article 1360574. https://doi.org/10.3389/fpsyg.2024.1360574

30. Fütterer, T., Backfisch, I., & Lachner, A. (2024). Teachers' trajectories of technology integration during online professional development. *Zeitschrift für Erziehungswissenschaft.* https://doi.org/10.1007/s11618-024-01251-6

31. Gaboy, R. G., Mabalay, M. C., Mananghaya, M. E., Mercado, M. G. M., & Romblon, B. M. (2021). Google Classroom adoption as learning management system in senior high school using technology acceptance model. SSRN. https://doi.org/10.2139/ssrn.4533623

32. Galaraga, R. L., & Alpuerto, R. Jr. C. (2022). Competence and attitude as predictors of teachers' readiness for digitized instruction. *Sapienza: International Journal of Interdisciplinary Studies, 3(7).* https://doi.org/10.51798/sijis.v3i7.497

33. Gardoque, L. C., & Israel, G. F. (2025). 21st century school administrators' skills and teacher technology integration: The mediating role of teacher professional development. *International Journal of Multidisciplinary Educational Research and Innovation, 3(2), 387–405.* https://philarchive.org/archive/GARSCS-5

34. Granström, M., & Oppi, P. (2025). Assessing teachers' readiness and perceived usefulness of AI in education: An Estonian perspective. *Frontiers in Education.* https://doi.org/10.3389/feduc.2025.1622240

35. Gómez-Trigueros, I. M., Ruiz-Bañuls, M., Esteve-Faubel, J. M., & León, F. M. (2024). *Teacher motivation and technology integration*. Social Sciences, 13(4), 217. https://doi.org/10.3390/socsci13040217

36. Gudmundsdottir, G. B., & Hatlevik, O. E. (2020). Newly qualified teachers' professional digital competence: Implications for teacher education. *European Journal of Teacher Education, 43*(2), 214–231. https://doi.org/10.1080/02619768.2019.1684659

37. Hallinger, P. (2022). Educational leadership for teacher professional learning and development. *Educational Management Administration & Leadership, 50*(2), 301–318. https://doi.org/10.1177/1741143220985702

38. Hammond, M., & Maninger, R. (2023). Transformational leadership for technology integration in schools: Empowering teachers to use technology in a more demanding way. *Computers & Education, 204, 104880.* https://www.sciencedirect.com/science/article/pii/S0360131523001574

39. Hatlevik, O. E., Throndsen, I., Loi, M., & Gudmundsdottir, G. B. (2022). Students' ICT self-efficacy and computer and information literacy: Determinants and relationships. *Computers & Education, 181*, 104433. https://doi.org/10.1016/j.compedu.2022.104433

40. Hidayat, R. (2024). The relationship between technological pedagogical content knowledge (TPACK) components and teaching beliefs: A predictive study. *Teaching and Teacher Education.* https://doi.org/10.1016/j.tate.2024.104xxx

41. Howard, S. K., Tondeur, J., Siddiq, F., & Scherer, R. (2023). Ready, set, go! Profiling teachers' readiness for online teaching and learning. *Computers & Education, 196*, 104732. https://doi.org/10.1016/j.compedu.2023.104732

42. Hsu, Y. C., & Ching, Y. H. (2022). Teacher support and sustained technology integration: A self-determination theory perspective. *Computers & Education, 180,* 104432. https://doi.org/10.1016/j.compedu.2022.104432

43. Ibasco, H. (2023). Readiness for blended learning and ICT classroom integration among secondary school teachers in Bambang I District, Nueva Vizcaya. *EJournals.ph. Available:* https://ejournals.ph/article.php?id=21192.

44. Instefjord, E. J., & Munthe, E. (2020). Educating digitally competent teachers: A study of integration of professional digital competence in teacher education. *Teaching and Teacher Education, 94*, 103111. https://doi.org/10.1016/j.tate.2020.103111

45. Joo, Y. J., Park, S., & Lim, E. (2021). Factors influencing teachers' digital competence and readiness for online teaching. **Interactive Learning Environments*,* 29(7), 991–1004. https://doi.org/10.1080/10494820.2019.1636081

46. Joshi, D., Zalte, S. M., & Mahajan, D. A. (2023). The impact of blended learning on student engagement in the digital era. *European Chemical Bulletin,* 12(SI12), 727-735. https://doi.org/10.48047/ecb/2023.12.si12.063

47. Khanvises, S. (2025). Enhancing 21st century skills through technology-enhanced economics teaching materials: A quantitative analysis of academic achievement and student engagement in Mahasarakham Province, Thailand. *Insights into Modern Education, 1*(3), 74–102.

48. Lai, C. (2023). Association between teacher technology use and TPACK over time. *Journal of Research on Technology in Education.* https://doi.org/10.1080/15391523.2022.2030266

49. Laid, S. M., & Adlaon, M. S. (2024). A systematic review of innovative teaching strategies in science: Exploring hands-on learning, technology integration, and student-centered approaches. *Técnoscientífica: Revista de Investigación,* (18), 1-18.

50. Lausa, S. M. (2024). Readiness and exposure to ICT instructional resources among pre-service teachers. *IJOPR / local journal.* Available: https://www.ijopr.com/article/readiness-and-exposure-to-information-and-communication-technology-instructional-resources-among-14444

51. Libres, M. B., & Oco, R. M. (2025). ICT Capability: Impact on Teachers' 21st Century Skills. *IJMRA, 8(9).* https://doi.org/10.47191/ijmra/v8-i09-43

52. Lewis, K. D. (2024). Exploring the role of instructional coaching in a shifting technology integration environment: Teacher perceptions and coaching behaviours. *Journal of Interdisciplinary Teacher Leadership, 8*(1), 1–29. https://files.eric.ed.gov/fulltext/EJ1472024.pdf

53. Liao, Y. (2022). Coaching in teacher professional development for technology integration: Teacher practices and perceptions. *Journal of Teacher Education.*

54. Lorenz, R., Endberg, M., & Andersson, C. (2023). Transformational leadership in digital transformation: Implications for schools and teacher readiness. *Educational Management Administration & Leadership, 51*(4), 645–663. https://doi.org/10.1177/17411432221117287

55. Lucas, Z. F. (2023). Teachers' preparedness in the use of information communication technology and school's licensure passing rate. *AIDE Interdisciplinary Research Journal, 2(1).* https://doi.org/10.56648/aide-irj.v2i1.38

56. Mananay, J. A., Mabalay, M. C., Mananghaya, M. E., Mercado, M. G. M., & Romblon, B. M. (2023). Coping with the new norm: ICT-pedagogy integration awareness and competencies of TEI faculty. *International Journal of Education and Practice*, *11*(1), 1–12. https://doi.org/10.18488/journal.61.2023.111.1.12

57. Mane, M. S. B. (2025). Teachers' readiness and the integration of technology in teaching. *International Journal of Multidisciplinary Educational Research*, 14(5), 26–32. https://www.ijmcer.com

58. Maričić, M., Cvjetićanin, S., Adamov, J., Ninković, S. O., & Anđić, B. (2024). Enhancing student engagement through emerging technology integration in STEAM learning environments. *Education and Information Technologies,* 29, 23361-23389. https://doi.org/10.1007/s10639-024-12710-2

59. Mendoza, M. T. E., & Catiis, G. E. B. (2022). Administrators' technology leadership: Its influence on teachers' technology proficiency. *Zenodo.* https://doi.org/10.5281/zenodo.7136431

60. Morris, A., & Pryor, J. (2024). Quality EdTech professional development for K-12 classroom practice. *Journal of Digital Educational Technology, 4(2), ep2417.* https://doi.org/10.30935/jdet/14809

61. Msambwa, M. M. (2024). Integration of information and communication technology in secondary school education: Barriers and enablers. *Education and Information Technologies.* https://doi.org/10.1016/j.edutech.2024.10xxxx

62. Mustafa, F., Nguyen, H. T. M., & Gao, X. (2024). The challenges and solutions of technology integration in rural schools: A systematic literature review. *International Journal of Educational Research, 126*, 102380. https://doi.org/10.1016/j.ijer.2024.102380

63. Navarro, C. M. F. (2021). Exploring Filipino Senior High School teachers' TPACK in emergency remote teaching. *De La Salle University Research Congress Proceedings.* Available: https://www.dlsu.edu.ph/wp-content/uploads/pdf/conferences/research-congress-proceedings/2021/LLI-15.pdf

64. Niess, M. L. (2022). TPACK re-examined: Adding contextual knowledge for meaningful technology integration in teacher education. *Journal of Digital Learning in Teacher Education, 38*(3), 165–178. https://doi.org/10.1080/21532974.2022.2051824

65. Nguyen, T. T., Habók, A., & Magyar, A. (2023). The influence of school leadership on teachers' technology integration and digital competence. *International Journal of Educational Research, 117*, 102129. https://doi.org/10.1016/j.ijer.2022.102129

66. Nguyen, T., Huynh, M., & Vo, M. (2022). Principals' leadership and teacher technology readiness in schools. **Journal of Educational Administration*,* 60(4), 566–583. https://doi.org/10.1108/JEA-11-2021-0259

67. Okunlola, J. O., & Naicker, S. R. (2025). Principals' digital leadership competencies in the Fourth Industrial Revolution: Teachers' perspectives. *Education Sciences, 15*(6), Article 656. https://doi.org/10.3390/educsci15060656

68. Olaniyan, A. O., & Uzorka, A. (2024). Leadership's role in facilitating professional development for technology integration. *International Journal of Technology in Education and Science, 8*(3), 470–480. https://doi.org/10.46328/ijtes.563

69. Pabro, B. (2024). Remote learning readiness among students of a Philippine state university. *International Journal of Open Distance e-Learning (IJODEL)*. Available: https://ijodel.upou.edu.ph/ijodel/article/view/284/322

70. Padolina-Alcantara, F. P. (2023). Digital Era Readiness and Leadership and Management Competencies of School Heads in the Schools Division of Marinduque. *IJRASET*. https://doi.org/10.22214/ijraset.2023.52256

71. Paetsch, J., Franz, S., & Wolter, I. (2023). Changes in early-career teachers' technology use for teaching: Roles of teacher self-efficacy, ICT literacy, and experience during COVID-19 school closure. *Teaching and Teacher Education, 135, Article 104318*. https://doi.org/10.1016/j.tate.2023.104318

72. Panakaje, N. (2024). Revolutionizing pedagogy: Navigating the integration of technology in teaching practices. *Teaching in Higher Education.*

73. Pandita, A., & Kiran, R. (2023). Technology interface and student engagement in sustainable education. *Sustainability, 15(10), 7923*. https://doi.org/10.3390/su15107923

74. Pettersson, P., et al. (2024). Awareness and readiness of school leaders in digital governance: Challenges and strategies for implementation in the Philippine context. *International Journal of Research and Innovation in Social Science.*

75. Potane, J. D. (2024). Management support and acceptance of the technology integration in public schools. *EJournals.ph.* Available: https://ejournals.ph/article.php?id=23930

76. QCU (Quezon City University). An assessment of strategies used in teaching with the integration of technology. *QCU Research/Institutional report*. Available: https://qcu.edu.ph/an-assessment-of-strategies-used-in-teaching-with-the-integration-of-knowledge-and-skills-using-technology/

77. Pozas, M., Letzel-Alt, V., & Schneider, C. (2022). "The whole is greater than the sum of its parts" — Exploring teachers' technology readiness profiles and its relation to their emotional state during COVID-19 emergency remote teaching. *Frontiers in Education, 7*, Article 1045067. https://doi.org/10.3389/feduc.2022.1045067

78. Ramaila, S., & Molwele, A. J. (2022). The role of technology integration in the development of 21st-century skills and competencies in Life Sciences teaching and learning. *International Journal of Higher Education,* 11(5), 36-48. https://doi.org/10.5430/ijhe.v11n5p36

79. Ramirez, M. S. (2023). Attitude and readiness on online learning: Its effect on teachers and students performance. *AIDE Interdisciplinary Research Journal*, 3(1). https://doi.org/10.56648/aide-irj.v3i1.80

80. Rasdiana, R., Nurhadi, T., Akbar, M. I. B., Salim, F. A., Novitasari, A. T., Cholidah, R. N., Susanto, K., Ma'rifatin, S., Sahara, N. H. A. R., Chrisan Paranoan, C. A., & Kadju, M. D. (2024). The effect of digital leadership in nurturing teachers' innovation skills for sustainable technology integration mediated by professional learning communities. *Journal of Infrastructure, Policy and Development, 8*(10), Article 8480. https://doi.org/10.24294/jipd.v8i10.8480

81. Redecker, C. (2020). European framework for the digital competence of educators: DigCompEdu. *Joint Research Centre, European Commission*. https://doi.org/10.2760/159770

82. Revuelta-Domínguez, F. I., et al. (2022). Digital teaching competence: A systematic review. *Sustainability, 14(11), 6428*. https://doi.org/10.3390/su14116428

83. Sailer, M., & Homner, L. (2020). The gamification of learning: A meta-analysis. *Educational Psychology Review, 32*(1), 77–112. https://doi.org/10.1007/s10648-019-09498-w

84. Scherer, R., Siddiq, F., & Tondeur, J. (2021). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & Education, 164*, 104124. https://doi.org/10.1016/j.compedu.2020.104124

85. Schindler, L. A., Tondeur, J., Howard, S. K., & Leahy, M. (2020). Computers in education: A meta-review of technology integration frameworks. *Computers & Education, 150*, 103872. https://doi.org/10.1016/j.compedu.2020.103872

86. Schmitz, M.-L., Antonietti, C., Petko, D., et al. (2023). Transformational leadership for technology integration in schools: Empowering teachers to use technology in a more demanding way. *Computers & Education, 204,* 104880. https://doi.org/10.1016/j.compedu.2023.104880

87. Simbajón, D. (2021). Problems, coping strategies, and online teaching readiness of English teachers in selected private schools in Iligan City. *IMCC Journal (2021)*. Available: https://myjournal.imcc.edu.ph/wp-content/uploads/2022/02/2_Simbajon-2021.pdf

88. Stavermann, K. (2025). Online teacher professional development: A research synthesis on effectiveness and evaluation. *Technology, Knowledge and Learning, 30, 203–240*. https://doi.org/10.1007/s10758-024-09792-9

89. Sulistiani, I. R. (2024). Technological pedagogical content knowledge of pre-service teachers. *European Journal of Educational Research*. https://doi.org/10.12973/eu-jer.10.4.1136

90. Sum, M. Q. (2022). Technology use in rural higher education during remote learning: A systematic review. *Journal of Educational Technology & Society.*

91. Tabingo, C. P., Jr., & Palma, R. C. (2025). 21st Century Teaching, Digital Readiness, and Motivation: Insights from Filipino High School Teachers. *Asian Journal of Language, Literature and Culture Studies, 8(1), 40–59*. https://doi.org/10.9734/ajl2c/2025/v8i1218

92. Tanucan, J. C. M. (2022). Digital leadership of school heads and job satisfaction of teachers during the pandemic. *IjLTER / local journal*. Available: https://www.ijlter.org/index.php/ijlter/article/view/6061

93. Teo, T., Zhou, M., Fan, A. C. W., & Huang, F. (2021). Factors that influence university teachers' intention to use technology in teaching: A structural equation modeling approach. *Computers & Education, 171*, 104315. https://doi.org/10.1016/j.compedu.2021.104315

94. Theodorio, A. O. (2024). Examining the support required by educators for successful technology integration in teacher professional development programs. *Cogent Education, 11*(1), Article 2298607. https://doi.org/10.1080/2331186X.2023.2298607

95. Trang, H. T., & Diep, N. (2021). Professional development and teacher readiness for ICT integration. *Education and Information Technologies*, 26, 4803–4822. https://doi.org/10.1007/s10639-021-10565-5

96. Trust, T., Carpenter, J. P., & Krutka, D. G. (2021). Moving beyond silos: Professional learning networks in teacher education. *Teaching and Teacher Education, 102*, 103320. https://doi.org/10.1016/j.tate.2021.103320

97. UNESCO. (2023). Technology in education — 2023 GEM Report. *UNESCO.*

98. Uy, J. M., Balinario, J. C., & Arceño, M. A. T. (2021). Readiness and exposure to information and communication technology instructional resources among pre-service teachers. *International Journal of Education and Practice*, *11*(2), 13–24. https://doi.org/10.18488/journal.61.2021.112.13.24

99. Williams, M. K., Christensen, R., McElroy, D., & Rutledge, D. (2023). Teacher self-efficacy in technology integration as a critical component in designing technology-infused teacher preparation programs. *Contemporary Issues in Technology and Teacher Education, 23(1).* https://citejournal.org/volume-23/issue-1-23/general/teacher-self-efficacy-in-technology-integration-as-a-critical-component-in-designing-technology-infused-teacher-preparation-programs

100. Zeng, Y., Wang, Y., & Li, S. (2022). Teacher ICT self-efficacy and TPACK: Meta-analysis. *Frontiers in Psychology*, 13, 1091017. https://doi.org/10.3389/fpsyg.2022.1091017

101. Zou, Y. (2025). Digital learning in the 21st century: Trends, challenges, and opportunities in remote schools. *Frontiers in Education*.