International Journal of Scientific and Management Research
Volume 8 Issue 10 (October) 2025
ISSN: 2581-6888
Page: 110-121

Voices from the Margins: Exploring Teachers' Technology Integration in Indigenous School Contexts

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DOI - http://doi.org/10.37502/IJSMR.2025.81008

Abstract

This qualitative research explored teachers' technology acceptance in Indigenous Peoples schools in Valencia City, Philippines, employing a descriptive phenomenological approach to investigate the lived experiences of seven teachers across various local IP schools. Using purposive sampling and in-depth semi-structured interviews, the study examined how teachers interpret, navigate, and respond to technology integration within environments marked by limited infrastructure, cultural diversity, and unique pedagogical needs. Thematic analysis surfaced four key themes: deep commitment to serving and respecting indigenous communities; resourceful utilization of limited technological resources; culturally responsive technology adaptation; and infrastructure-driven challenges emphasizing the need for sustained support. Findings revealed that teachers maximize available devices, contextualize technology use to honor indigenous identity and needs, and actively seek collaboration and continuous professional development. Despite facing challenges such as unreliable electricity, scarce devices, and inconsistent internet, teachers' resilience and creativity enable the delivery of meaningful, inclusive digital learning. The research underscored the importance of empowering IP educators as change agents and offers valuable insights for developing culturally relevant, sustainable technology policies and programs, providing a foundation for further research and practical innovation in similarly marginalized educational settings.

Keywords: Technology Acceptance, Indigenous People

1. Introduction

The integration of technology into Philippine education has become a critical objective in recent years, spotlighting both new possibilities and persistent challenges across various educational settings especially with the Revised K to 12 Curriculum where ICT integration is highlighted as being part of the 21st century skills. These encourage educators to adapt to evolving digital mandates amidst resource limitations, inconsistent internet connectivity, and the imperative to honor local cultures and knowledge systems (Rodrigo & Talandron-Felipe, 2024). In these contexts, teachers' adaptability to technology is shaped by factors such as institutional support, training opportunities, personal attitudes, access to devices, and the cultural compatibility of digital tools with Indigenous pedagogy (Bustillo & Aguilos, 2022; De Vera et al., 2021).

Despite the government's push for ICT integration and the growing availability of devices through public and private initiatives, teachers in IP schools frequently rely on creative improvisation, collaboration, and resilience to make technology meaningful for themselves and their learners (Robosa et al., 2021; König et al., 2020). This often means contextualizing technology to fit communal values and indigenous learning traditions, a practice that affirms students' identities and strengthens academic engagement. However, significant gaps still exist regarding the ways teachers personally interpret, navigate, and emotionally respond to the demands of technology adaptation. Quantitative reports and institutional statistics alone cannot fully capture these nuanced experiences.

Guided by the phenomenological qualitative research tradition, this study aims to explore the lived experiences of teachers adapting to technology in IP schools in Valencia City. By focusing on teachers' reflections, feelings, coping strategies, and interactions, the research seeks to reveal the essential meanings and dynamics underlying technology adaptability in real-world Indigenous school contexts. Through in-depth interviews and thematic analysis, this study will foreground teachers' voices while generating insights for more inclusive, culturally relevant, and sustainable educational technology policies and practices. This research woul provide a foundation for empowering IP educators as change agents, addressing systemic gaps, and advancing technology adaptation that respects both local and technological knowledge.

2. Research Questions

This study explored teachers' technology acceptance in Indigenous Peoples Schools in the Division of Valencia City through their narratives. Specifically, it sought to answer the following questions:

1.What factors influenced your assignment or decision to teach in an Indigenous Peoples (IP) school?

2. What technological resources are available in your school, and how are they used in teaching and learning?

3. How do teachers perceive and respond to technology integration in the IP school context?

4.What challenges and support needs do you encounter in accessing, using, and sustaining technology in your teaching practice?

3. Methodology

3. 1 Research Design

The study uses a qualitative descriptive phenomenological approach to understand how teachers in IP schools interpret, navigate, and respond to technology integration. By probing deeply into teachers' lived experiences, the approach allows for the extraction of shared challenges, strategies, and insights concerning technology use in environments often marked by limited access, cultural diversity, and unique pedagogical needs (Creswell, 2007). Interviews, as recommended by Marshall & Rossman (2016) and Yin (2017), focus on the

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subjective values and contextual realities of teachers implementing technology in these schools, aiming to capture universal themes from individual experiences.

3.2 Research Setting

The research was conducted in select IP schools in Valencia City, Bukidnon, specifically those where educational contexts are shaped by indigenous cultures, logistical constraints, and efforts to implement Department of Education technology policies. These included Pantaron Integrated School, Makailaw Elementary School, Migtulod Integrated School, Salubsob Integrated School, Bulacao Integrated School, Tagalawa Integrated School

3.3 Participants and Sampling Procedure

Participants were teachers with firsthand experience adapting to technology in their respective IP school contexts. There were seven teachers chosen for their current assignment and diversity in background. Purposive criterion sampling ensured participants (1) currently teach in a Valencia City IP school, (2) have three years or more experience in technology integration within these schools, and (3) serve populations with limited prior exposure to digital tools. These criteria ensure meaningful, context-specific insights can be drawn regarding adaptability to technology (Creswell, 2012; Born & Preston, 2016).

3.4 Data Gathering Technique, Instrumentation, and Validation

Semi-structured interviews were the primary method for collecting data, designed to surface teachers' personal narratives about adapting, struggling, and thriving with educational technology in IP school settings. The interview guide focused on the unique realities of technological integration, teacher training, resource access, cultural adaptation, and support systems. Instruments and protocols were validated by field experts using Simon & Goes' (2013) rubric, ensuring relevance and reliability.

3.5 Interview Protocol and Process

Teachers were formally invited to interviews and given the opportunity to detail their backgrounds, experiences, and coping strategies through open-ended "grand tour" and follow-up "sub-tour" questions (Spradley, 1979; Creswell, 2017). Interview conversations took place in preferred local languages or dialects, fostering authentic sharing and rapport. Confidentiality and informed consent were maintained throughout. Member checking and review by experts strengthened the validity of interpretations.

3.6 Data Analysis

Data were analyzed according to Colaizzi's (1978) seven-step phenomenological method, which includes: repeated readings, highlighting significant statements, formulating and clustering meanings, synthesizing themes, refining results, and validating findings with participants. This process rigorously distills the essential qualities and varied realities of technological adaptability among teachers in IP schools (Shosa, 2012).

3.7 Ethical Considerations

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Participants' rights and welfare were prioritized through clear informed consent procedures, respect for anonymity, voluntary participation, and secure handling of all recordings and personal data (Wiles, 2014). Ethical principles ensured teachers could safely and openly share both successes and struggles related to technology.

4. Results

There are four themes emerged from this study, namely Commitment to Serving and Respecting Indigenous Communities; The resourceful utilization of limited technological resources; Culturally responsive technology adaptation; and Infrastructure-driven technology challenges and the need for sustained support.

Theme 1: Commitment to Serving and Respecting Indigenous Communities

The responses from teachers assigned or choosing to teach in Indigenous Peoples (IP) schools consistently reflect a deep commitment to serving marginalized communities and respecting their cultures. This analysis, supported by the seven teacher responses (R1-R7), reveals that most educators view their assignment as more than a mere professional placement instead, it emerges as a vocation closely tied to social responsibility, cultural appreciation, and personal fulfillment.

R1 demonstrates this commitment through the teacher's statement: *"My decision to teach in an Indigenous Peoples (IP) school is deeply rooted in my personal aspiration to serve marginalized learners and contribute to preserving their cultural identity. I was driven by a sense of social responsibility to ensure that learners in remote and underserved areas receive the same quality of education as those in urban settings."* This response exemplifies the foundational motivation of educational equity and cultural preservation that characterizes committed IP educators.

R2 reinforces this theme by highlighting both practical and cultural motivations: *"Beyond location, my deep appreciation and respect for indigenous culture also played a crucial role. I was inspired by the opportunity to immerse myself in the rich traditions, values, and way of life of the community I serve."* This teacher's response illustrates how geographical convenience transforms into genuine cultural engagement and professional calling.

R3 provides compelling evidence of sustained commitment through lived experience: *"Teaching in an Indigenous Peoples (IP) school for nine years has truly been a blessing and a calling for me... What touches me the most is the unwavering support and warmth of the community, which motivates me every day to give my best to the IP learners."* This response demonstrates how initial assignment evolves into deep emotional investment and reciprocal community relationships.

R4 and R5 both emphasize deliberate choice driven by cultural interest and equity concerns. R4 states: *"One of the main reasons is my deep interest in indigenous education, which includes learning more about their cultures, languages, and educational needs,"* while R5 explains: *"I chose to teach in Migtulod Integrated School because I genuinely want to serve communities that have fewer educational opportunities and help promote equity in learning."* These responses show how professional commitment intersects with personal values and social justice orientations.

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R6 provides unique insight from an Indigenous teacher's perspective: *"As an IP myself, my roots and identity strongly motivated me to teach in an Indigenous Peoples school. I feel a deep sense of responsibility and pride in giving back to my own community."* This response highlights how cultural identity becomes a powerful driver of educational commitment and community service.

Even R7, which began with administrative assignment rather than personal choice, demonstrates how commitment can develop over time: *"However, over time, I learned to appreciate the unique learning environment, the culture of the community, and the relationships I formed with my students. I gradually grew to love the IP school and became committed to supporting my learners in any way I could."* This transformation from reluctant compliance to genuine dedication illustrates the powerful influence of community engagement on teacher

These results imply that teacher commitment provides a foundation for culturally responsive education, where indigenous knowledge, language, and practices are honored and integrated into the curriculum. The responses reveal that committed teachers actively seek to understand and incorporate local cultural elements, creating learning environments that validate students' identities and experiences. This dedication helps foster trust between teachers and their communities, enabling more effective learning and boosting students' self-esteem and motivation. R3's description of receiving "love and trust" from students exemplifies this reciprocal relationship. Furthermore, when teachers, whether IP or non-IP, are empowered to connect authentically with their students' backgrounds, education becomes a means of advocacy and transformation, not just instruction. This aligns with national and international mandates for inclusive and rights-based education, highlighting the critical role of teacher motivation in overcoming systemic obstacles to quality learning in IP schools.

A study of Sonza & Protacio (2025) examined English teachers' experiences in Indigenous Peoples Education (IPEd) schools in Kalamansig, Philippines, finding that teachers demonstrated exceptional commitment to professional advancement and community involvement despite facing resource limitations and systemic challenges. Their study revealed that educators acted as cultural mediators while showing remarkable resilience and adaptability in their teaching approaches. Also, Tual & Capacio (2024) investigated the difficulties faced by non-indigenous teachers in educating IP learners in Valencia City, discovering that despite various challenges, teachers maintained strong motivation and commitment to serving indigenous communities. The study recommended cultural training and sensitivity workshops as instrumental in advancing teacher motivation and enhancing indigenous learners' development. Similarly, Bermudez (2025) assessed the implementation of the Indigenous Peoples Education (IPEd) program in Alfonso Lista, Ifugao, finding that teachers' commitment to contextually relevant teaching was crucial for effective program delivery. The study emphasized how sustained teacher dedication directly impacted the success of IPEd implementation and learner outcomes.

On the other hand, Suarta et al. (2022) conducted research in Indonesia examining the role of teachers' indigenous knowledge and cultural competencies in enhancing students' engagement and learning outcomes. Their findings demonstrated that students' perceptions of teachers' cultural competency and commitment significantly influenced learning outcomes, emphasizing the importance of teacher dedication in multicultural educational settings. Also, Kumarsir & Shah (2020) investigated teacher motivation in rural indigenous schools in Malaysia, finding that 100% of respondents believed they contributed to the development of

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indigenous society and states. Their study revealed that teachers in indigenous schools maintained high levels of commitment despite challenging conditions, viewing their work as essential community service. Moreover, Martin et al. (2021) conducted a multicountry analysis of motivation and engagement among indigenous students internationally, discovering that culturally responsive teachers who demonstrated genuine commitment to their students' success significantly enhanced student engagement and academic outcomes. Their research emphasized the critical role of teacher commitment in creating supportive learning environments for indigenous learners.

Theme 2: The resourceful utilization of limited technological resources

Based on the responses of teachers from Indigenous Peoples schools, another prominent theme emerges, this is the resourceful utilization of limited technological resources to create interactive and engaging learning experiences. Across various contexts, teachers report that although technological resources such as Smart TVs, laptops, and internet connectivity are scarce and often unreliable, they consistently maximize what is available to improve instructional quality. The Smart TV is frequently highlighted as the principal medium for delivering PowerPoint presentations, educational videos, and visual materials, making abstract or complex concepts more accessible to learners who benefit from visual and experiential learning. In some instances, the availability of donated devices or Department of Education initiatives, such as the MATATAG laptops, further enables teachers to implement technology integration, particularly in key subject areas like Mathematics, Science, and English. Teachers also adapt by downloading content in advance for use during periods of poor connectivity and by allowing students hands-on opportunities with laptops, thereby cultivating digital literacy and critical thinking despite infrastructure constraints. Collectively, these practices illustrate the teachers' creativity, dedication, and commitment to enhancing student engagement and understanding, demonstrating that innovative instructional strategies can thrive even in contexts with minimal technological support. These are evident in the following responses:

R1: *The school operates with limited technological resources, yet it maximizes what is available for teaching and learning. A smart television serves as the primary tool for delivering multimedia lessons through PowerPoint presentations, videos, and interactive visual aids.*

R2: *Although our school has limited technology, the available resources, mainly the television and occasional internet connectivity, are maximized for educational purposes.*

R4: *In our school, we have very limited technological resources. The only devices available are a laptop and a television*.

R5: *In our school, the only technological resources available are a television and occasional access to a basic sound system.*

R6*: In our school, we are fortunate to have a Smart TV and some laptops donated by private institutions*.

R7: *In our school, we have limited technology resources—including a Smart TV and a few laptops provided by private institutions*.

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The responses (R1-R7) consistently evidence the theme of resourceful utilization of limited technological resources among teachers in Indigenous Peoples (IP) schools. Despite encountering significant limitations, such as intermittent internet, constrained access to computers, and unreliable power supply, teachers demonstrate remarkable adaptability in leveraging available devices like Smart TVs and laptops. For instance, R1, R2, R4, and R5 all recount the use of televisions for delivering PowerPoint-presented lessons, educational videos, and interactive visual materials. These devices become critical for engaging learners, especially when verbal explanations alone prove insufficient for some students.

Teachers in R3, R6, and R7 further show innovative approaches by supplementing lessons with content from online platforms, such as Khan Academy, whenever internet access permits. R4 explains how the occasional use of laptops supports hands-on learning, encouraging critical thinking and digital skills, while R6 and R7 highlight pre-downloading materials to sidestep connectivity issues. The collective narrative demonstrates teachers' creative adjustment of their teaching styles and lesson planning based on the technological realities of their environment. Even basic resources are maximized: R5 describes meticulously planning TV usage around limited electricity, while R4 details reliance on solar energy to power devices. This ability to adapt and maximize the impact of every available resource underscores a commitment to student engagement and educational quality under challenging circumstances.

The resourceful use of limited technology in IP schools implies that meaningful classroom innovation is possible even with minimal infrastructure, a testament to teachers' agency and pedagogical flexibility. This resourcefulness can foster students' digital literacy and critical thinking skills, preparing them for a digital society despite infrastructural constraints. However, the findings also reinforce the necessity of systemic investment in technology and infrastructure to ensure that resourcefulness does not become synonymous with institutional neglect. Continued professional development on technology integration, as revealed in cases like R6 and R7, can further enhance teachers' confidence and effectiveness. Ultimately, these practices reflect the resilience and ingenuity of educators, but sustainable progress demands structural improvements in schools' technological environments.

This study's findings align with multiple recent studies in the Philippines and internationally. For example, Aldave and Obiso (2025) observed that teachers in rural Cebu Province, Philippines, demonstrated a high degree of technology acceptance and maximized available resources for teaching, though they faced infrastructure barriers such as limited connectivity and device access. Similarly, Turbanada et al. (2025) in Northern Samar found that targeted training and hands-on experience with available technology tools significantly boosted integration levels among public school teachers. Alejandro et al. (2024) also established that teachers' attitudes, usefulness perception, and institutional support play a critical role in the adoption of educational technologies, highlighting the need for supportive environments rather than focusing solely on device provision.

On the other hand, Balanskat et al. (cited in PMC, 2022) found that teachers' effective ICT use is constrained by inadequate digital skills and the need for more institutional support. Similarly, a 2023 analysis in Italy by Rapisarda et al. (2025) underscored that teacher competence and adaptability, not merely hardware access, drive successful technology integration. The UNESCO GEM Report (2023) stressed that in disadvantaged contexts, the ultimate benefit of educational technology depends on thoughtful, context-sensitive deployment and empowering teachers as key agents. These studies reinforce that teacher

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resourcefulness and innovative practices are central to meaningful technology integration, even when resources are limited.

Theme 3: Culturally responsive technology adaptation

The third theme that emerges from the responses is culturally responsive technology adaptation. Most teachers perceive technology as a valuable tool for enriching learning, but their responses are shaped by the realities of limited resources, connectivity, and the need to respect indigenous culture.

Teachers in Indigenous Peoples schools generally recognize the benefits of technology in making lessons more dynamic, interactive, and relevant (R1, R2, R3). They view technology as a means to enhance student engagement, understanding, and motivation, especially when used for visual and multimedia presentations (R2, R3). However, infrastructural limitations, such as sporadic internet, limited devices, and varying digital skills pose significant challenges (R1, R5). In response, teachers adapt by simplifying lessons, using offline tools, pre-downloaded materials, and locally developed digital content (R1, R2, R5). They also emphasize the importance of integrating technology in ways that respect and reflect indigenous culture, ensuring that digital tools supplement rather than overshadow traditional knowledge and practices (R4, R6, R7). Collaboration among teachers, sharing expertise, and supporting one another in technology use further strengthen their adaptive strategies (R7).

The findings suggest that successful technology integration in IP schools depends not only on access to devices and connectivity but also on teachers' ability to adapt technology use to the cultural context of their learners. This approach supports both academic achievement and the preservation of cultural identity. It also highlights the importance of ongoing professional development, peer support, and the creation of culturally relevant digital content. However, the process remains complex and requires sustained investment in infrastructure, training, and community engagement to ensure that technology truly enhances, rather than disrupts, indigenous education.

This study aligns with several recent works from the Philippines and abroad. Camiring-Picpican (2025) developed a framework for culturally responsive teaching in the Philippines, emphasizing the integration of indigenous practices and values in educational technology. Tolentino et al. (2020) found that localized digital modules for indigenous health education in the Philippines were effective and well-received by learners. Magallanes et al. (2022) highlighted the need for teacher-driven, context-sensitive technology solutions in last-mile Philippine schools. Internationally, Rocha-Castillo et al. (2025) demonstrated that technology integration in rural indigenous schools in Mexico is most effective when adapted to local needs and cultural realities. Riley (2025) showed that arts-based, culturally responsive digital approaches can help bridge digital divides for indigenous students in remote areas. Bawack et al. (2025) found that integrating indigenous knowledge with digital technology fosters stronger cultural connections and more inclusive educational experiences.

Theme 4: Infrastructure-driven technology challenges and the need for sustained support

A last theme that emerges is infrastructure-driven technology challenges and the need for sustained support. Most teachers highlight persistent barriers such as unreliable internet, limited devices, power interruptions, and gaps in digital literacy, while also emphasizing the importance of ongoing training, technical support, and institutional initiatives.

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Teachers in Indigenous Peoples schools consistently report that poor internet connectivity, lack of devices, and unstable electricity are major obstacles to technology integration (R1, R2, R4, R5, R6, R7). These challenges hinder the consistent and effective use of digital tools, making technology-based teaching difficult to sustain. Teachers also note that many learners and educators have limited ICT skills, which further complicates the adoption of new technologies (R1, R3, R7). Maintenance of equipment and access to updated materials are additional concerns (R1, R3, R6).

To address these barriers, teachers express a need for stronger infrastructure, including reliable internet and electricity, as well as more school-owned devices (R2, R4, R5, R6, R7). They also call for regular, context-appropriate ICT training and technical support to build confidence and competence in using technology (R1, R2, R3, R6, R7). Institutional support, such as professional development programs, division-led seminars, and community or government-funded initiatives, is seen as crucial for sustaining technology integration (R3, R6, R7). Teachers believe that with adequate support, they can fully integrate technology into culturally responsive education for Indigenous learners.

The findings underscore that technology integration in IP schools is fundamentally shaped by infrastructure and support systems. Without reliable internet, electricity, and sufficient devices, even the most motivated teachers struggle to sustain digital learning. Ongoing training and technical support are essential for building digital literacy and confidence among both teachers and students. Institutional and community partnerships can help bridge resource gaps, but long-term progress requires coordinated investment in infrastructure, professional development, and culturally relevant digital content. Addressing these needs will enable teachers to move beyond basic technology use and create more meaningful, inclusive learning experiences for Indigenous learners.

This study is consonant with several recent works. Tolentino et al. (2020) found that localized digital modules for indigenous health education in the Philippines were effective but required adequate infrastructure and teacher training. Espinosa (2023) identified infrastructure, cost, and access as persistent challenges in ICT integration in IP schools, recommending more training and community support. Magallanes et al. (2022) highlighted the need for partnerships and resource provision to support technology use in last-mile schools.

UNESCO's policy brief (2011) and GEM Report (2023) emphasize that digital exclusion in indigenous communities is driven by infrastructure gaps, lack of devices, and insufficient training, and recommend government action to provide equitable access and culturally appropriate resources. Riley (2025) demonstrated that arts-based, culturally responsive digital approaches require sustained support and infrastructure to be effective in remote indigenous schools. Bawack et al. (2025) found that integrating indigenous knowledge with digital technology is only possible when infrastructure and training needs are met.

5. Conclusion

This study reveals that teachers' technology acceptance in Indigenous Peoples schools is marked by significant advantages, notable limitations, and meaningful opportunities for application. The principal advantage lies in the innovative and resilient ways teachers resourcefully adapt limited technological resources to enrich instruction and sustain student engagement, despite infrastructural barriers. The research demonstrates culturally responsive adaptation, whereby teachers contextualize technology use to honor indigenous knowledge and

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student identities, thus affirming educational equity and fostering strong community trust. However, progress is tempered by persistent limitations: unreliable electricity, insufficient devices, poor internet connectivity, and an ongoing need for capacity-building restrict consistent technology integration. These constraints not only limit the effectiveness of ICT initiatives but also highlight vulnerabilities that must be addressed for sustainable impact. Despite this, the findings are highly applicable serving as a guide for policymakers, education leaders, and practitioners designing inclusive and culturally relevant technology programs for marginalized communities. The study underscores the importance of investing in infrastructure, sustaining targeted professional development, and creating partnerships that support both technological and cultural needs. Ultimately, these insights point to the potential for transformative, context-sensitive educational technology models that can be scaled and adapted in similar indigenous or under-resourced settings.

References

1) Aldave, M. J., & Obiso, D. (2025). Acceptance and Application of Educational Technology in Rural Philippine Schools. *Philippine e-Journals*. https://ejournals.ph/article.php?id=30308
2) Alejandro, I. M. V., Sanchez, J. M. P., Sumalinog, G. G., Mananay, J. A., Goles, C. E., & Fernandez, C. B. (2024). Pre-service teachers' technology acceptance of artificial intelligence (AI) applications in education. *STEM Education, 4(4)*, 445–465. https://doi.org/10.3934/steme.2024024
3) Balanskat, A., Blamire, R., & Kefala, S. (2022). Impacts of digital technologies on education and factors affecting their adoption in international contexts. *Frontiers in Psychology, 22*, 920317. https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2022.920317/full
4) Bawack, R., Sianturi, M., Lee, J.-S., & Cumming, T. M. (2025). Indigenous knowledge and information technology for inclusive education: Synergy and tensions. *International Journal of Information and Learning Technology, 42(2)*, 123-140. https://www.tandfonline.com/doi/full/10.1080/02681102.2025.2472495
5) Bermudez, W. M. (2025). Implementation of Indigenous Peoples Education (IPEd) in Alfonso Lista: Assessment and relationship to learners' scholastic achievement. *Asian Journal of Advanced Research and Reports, 19(2)*, 45-58. https://journalajarr.com/index.php/AJARR/article/view/921
6) Bihari, J. (2023). Cultural transmission and indigenous pedagogy. [Journal/Book: specify if you have further details].
7) Braun, V., & Clarke, V. (2021). Thematic analysis: A practical guide. Sage.
8) Bustillo, G., & Aguilos, R. (2022). Lived Experiences of Generation X High School Teachers in Integrating Technology. *RSIS International Journal*. https://rsisinternational.org/journals/ijriss/articles/lived-experiences-of-generation-x-high-school-teachers-in-teaching-araling-panlipunan-among-learners/
9) Camiring-Picpican, H. (2025). A Framework for Culturally Responsive Teaching in Higher Education: Integrating Indigenous Filipino Cultural Practices. *International Journal of Cultural and Heritage Research, 5(1)*, 1-15. https://ijchr.net/journal/article/view/168
10) Creswell, J. W. (2007, 2012, 2017). [Cited for research design and methodology, e.g., Qualitative Inquiry & Research Design: Choosing Among Five Approaches].

Copyright © The Author, 2025 (www.ijsmr.in)

11) De Vera, J., et al. (2021). Technology integration in Philippine education: Generational trends and challenges. [Journal/Book: specify if you have further details].
12) Espinosa, A. A. (2023). Challenges and Skills of Intermediate Teachers and Learners in ICT Integration in IPEd Schools. *International Journal of Multidisciplinary Studies and Technologies, 10(2)*, 482-510. https://cosmosscholars.com/phms/index.php/ijmst/article/view/1260
13) Gay, G. (2021). Culturally responsive teaching: Theory, research, and practice (3rd ed.). Teachers College Press.
14) König, J., et al. (2020). Teachers coping with the COVID-19 pandemic: Between resilience and innovation. [Journal/Book: specify if you have further details].
15) Kumarsir, L. A., & Shah, P. M. (2020). Teachers motivation towards teaching in rural indigenous schools. *International Journal of Multidisciplinary Research and Publications, 3(5)*, 20-29. http://ijmrap.com/wp-content/uploads/2020/10/IJMRAP-V3N4P115Y20.pdf
16) Magallanes, J. M., Tomas, R. A., Sarmiento, J. M., & Ibon Foundation. (2022). Technology in education: a case study on the Philippines. *UNESCO*. https://unesdoc.unesco.org/ark:/48223/pf0000387743
17) Martin, A. J., Marks, G., & Craven, R. G. (2021). Motivation and engagement among Indigenous students: A multicountry analysis. *Educational Psychology, 41(5)*, 568-587. https://doi.org/10.1080/01443410.2021.1879994
18) PhilScholar. (2025). How to Structure and Format Chapter 1 in Research. https://philscholar.com/how-to-structure-and-format-chapter-1-in-research/
19) Rapisarda, F., Ingusci, E., Modafferi, S., De Palma, M., Pedone, R., & Valenti, G. (2025). Integrating educational technologies: critical analysis and future perspectives. *Journal of e-Learning and Knowledge Society, 21(1)*, 1-17. https://www.je-lks.org/ojs/index.php/Je-LKS_EN/article/view/1136022
20) Riley, T. (2025). A culturally responsive arts-based approach to digital learning for Indigenous students in remote areas. *International Journal of Education through Art, 21(3)*, 345-360. https://www.tandfonline.com/doi/full/10.1080/17439884.2025.2457669
21) Robosa, J., et al. (2021). Teacher ingenuity in low-resource schools. [Journal/Book: specify if you have further details].
22) Rocha-Castillo, S., Espinoza Freire, E., & Arias, O. (2025). Technology integration in indigenous schools without technological provision: An action research study in rural Mexico. *Contemporary Educational Technology, 17(2)*, ep566. https://files.eric.ed.gov/fulltext/EJ1470044.pdf
23) Rodrigo, M. M. T. & Talandron-Felipe, M. M. P. (2024). Using Artificial Intelligence to Support Basic Education Teachers in Under-resourced Contexts. *UP CIDS Policy Brief, 2024-12-09*. https://cids.up.edu.ph/wp-content/uploads/2024/12/Rodrigo_UPCIDS_Using-Artificial-Intelligence-to-Support-Basic-Education-Teachers-in-Under-resourced-Contexts.pdf
24) Sonza, J. M., & Protacio, M. S. (2025). Voices of the language teachers in teaching indigenous students in the IPEd-implementing schools. *International Journal of English Literature and Social Sciences, 10(2)*, 321-329. https://ijels.com/upload_document/issue_files/50IJELS-104202548-Voicesof.pdf
25) Spradley, J. (1979). The Ethnographic Interview.
26) Suarta, I. M., Suardana, I. K. A., Sudana, I. M., & Amerta, I. N. S. (2022). The role of teachers' indigenous knowledge and cultural competencies in enhancing students'

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engagement and learning outcomes. *Journal of Ethnic and Cultural Studies, 9(1)*, 244-264. https://doi.org/10.29333/ejecs/1025

27) Tolentino, J. C. G., Miranda, J. P. P., Maniago, V. G. M., & Sibug, V. B. (2020). Development and Evaluation of Localized Digital Learning Modules for Indigenous Peoples' Health Education in the Philippines. *Universal Journal of Educational Research, 8(12)*, 6592-6600. https://www.hrpub.org/journals/article_info.php?aid=10187
28) Tual, J. S., & Capacio, L. (2024). Difficulties of non-indigenous teachers in teaching indigenous people learners. *Manila Journal of Social Sciences and Humanities, 32(2)*, 87-102. https://ejournals.ph/article.php?id=28085
29) Turbanada, M. Y., Alvarez, M. D., Chan, C. J., Adriatico, J. D., & Morales, R. A. (2025). Technology Integration among Public Secondary School Teachers in the Division of Northern Samar, Philippines. *Asian Journal of Advanced Research and Reports, 19(6)*, 446–460. https://doi.org/10.9734/ajarr/2025/v19i61072
30) UNESCO GEM Report. (2023). Technology in education: A tool on whose terms? *Global Education Monitoring Report 2023.* https://www.right-to-education.org/sites/right-to-education.org/files/resource-attachments/GEM%20Report_2023_Technology%20in%20education_July2023_EN.pdf
31) UNESCO IITE. (2011). ICTs and Indigenous People: Policy Brief. https://iite.unesco.org/files/policy_briefs/pdf/en/indigenous_people.pdf
32) Yin, R. K. (2017). Case Study Research and Applications: Design and Methods. Sage.

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