

Roadblocks to Learning Amid Technological Advancement: Exploring the Lived Experiences of Rural Elementary Learners

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Abstract. Despite extensive research on technology integration and the digital divide, comparatively little qualitative evidence explains how rural elementary learners themselves experience the intersection of technological, social, and environmental barriers in everyday learning. This study explored the lived experiences of Grade 4 to Grade 6 rural elementary learners in the Northern Barangays of Cebu City as they navigated learning amid technological advancement. A qualitative phenomenological research design was employed to gain an in-depth understanding of the meanings learners attached to their experiences. Ten learners were purposively selected and participated in semi-structured interviews and focus group discussions. The data were analyzed using Colaizzi's phenomenological method, which involved identifying significant statements, formulating meanings, organizing theme clusters, developing an exhaustive description, determining the fundamental structure of the phenomenon, and validating the findings with the participants. Four major themes emerged: technological challenges, family and community support, teacher influence, and student determination and coping efforts. The findings showed that limited access to digital devices, unstable internet connectivity, insufficient mobile data, and power interruptions hindered learners' participation in technology-assisted learning. However, support from families, communities, and teachers, together with learners' determination and adaptive coping strategies, enabled them to continue learning despite these difficulties. The study concludes that promoting educational equity in rural communities requires improved technological resources alongside responsive teaching practices, strong family and community support, and context-sensitive educational interventions that address the realities and needs of rural elementary learners.

Keywords: Colaizzi analysis; Digital divide; Lived experiences; Phenomenology; Rural elementary learners; Technological

Introduction

Technology has become an integral component of contemporary education, transforming how teachers deliver instruction and how learners acquire knowledge. The integration of digital technologies, including online learning platforms, educational applications, and internet-based resources, has created opportunities for more interactive, flexible, and learner-centered instruction. Globally, governments and educational institutions continue to promote digital transformation to improve educational quality and prepare learners with the competencies required in the twenty-first century. Despite these advancements, equitable access to technology remains a persistent challenge, particularly among learners in rural and underserved communities (UNESCO, 2023; UNICEF, 2023).

The benefits of educational technology, however, are not experienced equally. The digital divide continues to limit access to quality education for millions of learners worldwide, especially those living in geographically isolated areas. Limited access to digital devices, unstable internet connectivity, inadequate electricity, and insufficient technological infrastructure have prevented many rural learners from fully participating in technology-enhanced education (World Bank, 2022; UNESCO, 2023). Following the COVID-19 pandemic, schools increasingly adopted digital and blended learning modalities, further exposing inequalities in access to educational technologies. These disparities have affected learners' academic participation, engagement, and overall learning outcomes (OECD, 2023).

In the Philippines, efforts to address digital inequality include the DepEd Computerization Program and Last Mile Schools Program, which aim to improve technological resources and educational access in public

schools, particularly those in geographically isolated and disadvantaged areas (Department of Education, 2023a, 2023b). However, challenges in implementing digital initiatives remain, as government audits have identified gaps in the procurement and delivery of ICT resources under the DepEd Computerization Program (Commission on Audit, 2024). Consequently, many elementary learners continue to rely on borrowed mobile phones, shared devices, printed learning materials, or intermittent internet access to complete academic requirements.

These realities are particularly evident among learners in the Northern Barangays of Cebu City, where geographical location, economic constraints, and limited digital infrastructure continue to affect educational access. Beyond technological limitations, learners also encounter challenges related to transportation, family responsibilities, limited learning resources, and restricted academic support. Despite these difficulties, many rural learners demonstrate resilience by adapting to available resources, seeking assistance from teachers and family members, and developing strategies to continue learning despite technological constraints (Bernardo, 2020; UNICEF Philippines, 2023).

Although numerous studies have investigated technology integration, digital learning, and educational inequality, existing research has largely emphasized quantitative outcomes such as academic achievement, digital competence, and technology acceptance. Comparatively fewer studies have explored the lived experiences of rural elementary learners who directly experience these educational barriers. Furthermore, limited qualitative evidence exists regarding how technological, social, and environmental challenges intersect to shape the educational experiences of elementary learners in the Northern Barangays of Cebu City. This gap underscores the need for context-specific qualitative research that amplifies the voices of rural learners and provides a deeper understanding of their educational realities (Creswell & Poth, 2018).

Guided by a phenomenological approach, this study explored the lived experiences of Grade 4 to Grade 6 rural elementary learners in the Northern Barangays of Cebu City as they navigated learning amid technological advancement. Specifically, it sought to understand the technological barriers they encountered, the support systems that influenced their educational experiences, and the coping strategies they employed despite limited digital resources. The findings of this study are expected to provide valuable insights for teachers, school administrators, parents, community leaders, and policymakers in designing more inclusive, equitable, and context-responsive educational interventions that ensure no learner is left behind in the digital age.

Research Questions

This study aims to explore and understand the lived experiences of rural elementary learners in the Northern Barangays of Cebu City as they navigate learning amid technological advancement.

Specifically, this study aims to:

1. Explore the technological challenges experienced by rural elementary learners;
2. Describe how these technological challenges shape their learning experiences;
3. Explore how family, community, and teacher support is experienced by rural elementary learners in navigating technological challenges;
4. Understand the coping strategies employed by rural elementary learners in responding to technological barriers; and
5. Explore the meanings and perceptions that rural elementary learners attribute to their experiences of learning amid technological advancement.

Scope and Delimitation of the Study

This study explored the lived experiences of rural elementary learners as they navigated learning amid technological advancement. Specifically, it examined the technological challenges they encountered, the support they received from their families, communities, and teachers, and the coping strategies they employed to continue learning. A qualitative phenomenological research design was employed to gain an in-depth understanding of these experiences. The study involved ten (10) purposively selected Grade 4 to Grade 6 learners from public elementary schools in the Northern Barangays of Cebu City. Data were collected through semi-structured interviews and focus group discussions and analyzed using Colaizzi's (1978) phenomenological method. The study was limited to the participants' lived experiences and did not include the perspectives of teachers, parents, or other stakeholders. The findings are context-specific and are not intended for statistical generalization.

Literature Review

Technology and the Digital Divide in Rural Education

Technology has become an important component of contemporary education, expanding opportunities for access to information, interactive learning, collaboration, and flexible instruction. When digital resources are equitably available, technology can enhance educational quality and support learners' engagement and critical thinking (UNESCO, 2023; OECD, 2023). However, these benefits are not equally experienced across educational settings. Rural and economically disadvantaged learners frequently encounter limited access to digital devices, unstable internet connectivity, inadequate infrastructure, and financial constraints, conditions that restrict their participation in technology-enhanced learning (World Bank, 2022; UNICEF, 2021). These disparities illustrate the continuing digital divide between learners who can readily access and use technology and those whose participation depends on limited or unreliable resources. In the Philippine context, government initiatives have sought to strengthen digital education, yet geographically isolated and disadvantaged schools continue to experience connectivity and resource limitations (Department of Education, 2023). Consequently, technological advancement can simultaneously expand learning opportunities and reinforce existing inequalities when access to devices, connectivity, and other necessary resources remains uneven.

Challenges Experienced by Rural Elementary Learners

Technological barriers in rural education extend beyond the mere absence of digital devices. Limited gadget availability, poor connectivity, power interruptions, financial constraints, and geographical isolation can disrupt learners' access to educational materials and their participation in technology-assisted activities (UNESCO, 2023; World Bank, 2022). These technological limitations may also intersect with transportation difficulties, household responsibilities, and limited academic support, making rural learners' educational experiences multidimensional rather than purely technological. Beyond technological barriers, rural learners frequently experience difficulties related to transportation, household responsibilities, and limited academic support at home. These interconnected challenges influence both their academic performance and overall educational experiences.

Family, Community, and Teacher Support

Research consistently demonstrates learners' experiences with technological challenges are influenced by the support available within their immediate environments. Families may provide devices, internet data, supervision, emotional encouragement, and assistance with schoolwork, while communities may contribute learning spaces, educational programs, and available technological resources (UNICEF, 2023). Such support becomes particularly important in rural communities where formal technological resources are limited. Teachers likewise play a critical role in helping learners navigate technology-related difficulties. Instructional guidance, flexibility, and responsiveness can enable learners to remain engaged even when technological access is inconsistent. Viewed collectively, family, community, and teacher support demonstrates that rural learners' ability to participate in technology-assisted education is shaped not only by the resources they personally possess but also by the social relationships and support systems surrounding them.

Coping Strategies and Resilience

Despite technological and environmental constraints, rural learners employ various strategies to sustain their participation in education. These may include sharing or borrowing digital devices, seeking assistance from teachers and family members, accessing available internet facilities, managing limited connectivity, and using printed materials when online resources are unavailable (OECD, 2023). Such strategies demonstrate learners' capacity to adapt to conditions in which technological access is uncertain or inadequate. However, resilience should not be viewed solely as an individual learner's ability to overcome adversity. The literature indicates that coping is closely connected to the availability of family, teacher, and community support. Thus, learners' persistence amid technological challenges may be understood as the interaction between personal determination and supportive environments. This perspective is particularly relevant to understanding how rural elementary learners continue learning despite persistent technological limitations.

Research Gap

Existing literature establishes that technological inequality remains a significant concern in rural education and identifies limited devices, poor connectivity, inadequate infrastructure, and financial constraints as persistent barriers (UNESCO, 2023; UNICEF, 2023). Previous literature also demonstrates the importance of family, community, and teacher support and the adaptive strategies learners use when technological resources are limited. However, much of the existing discussion emphasizes technology access,

digital inequality, and educational outcomes rather than the meanings learners themselves attach to these experiences. Comparatively fewer studies have examined these interconnected experiences from the perspectives of rural elementary learners through a phenomenological approach. Moreover, limited qualitative evidence exists on how technological challenges, social support, teacher influence, and coping strategies collectively shape the lived experiences of elementary learners in the Northern Barangays of Cebu City. Addressing this gap is important because understanding learners' own perceptions and meanings can provide context-specific insights that cannot be captured through measures of technology access or educational outcomes alone. Therefore, the present study explores and interprets the lived experiences of rural elementary learners as they engage in learning amid technological advancement.

Methodology

Research Design

This study employed a qualitative phenomenological research design to explore and understand the lived experiences of rural elementary learners as they engaged in learning amid technological advancement. Phenomenology is appropriate for studies that seek to understand and describe the meanings and essence of individuals' lived experiences concerning a particular phenomenon (Creswell & Poth, 2018). The phenomenological approach enabled the researchers to obtain rich, firsthand accounts of the learners' experiences, particularly the technological challenges they encountered, the support they received from their families, communities, and teachers, and the ways they coped and adapted to technology-related difficulties (Creswell & Poth, 2018). Data were gathered through semi-structured interviews and focus group discussions to provide participants with opportunities to describe their experiences, perceptions, and meanings in their own words, consistent with phenomenological inquiry (Colaizzi, 1978). The data were analyzed using Colaizzi's phenomenological method, which is appropriate for systematically examining participants' descriptions of their lived experiences. The analysis involved familiarization with the participants' accounts, extraction of significant statements, formulation of meanings, organization of meanings into theme clusters, development of an exhaustive description, identification of the fundamental structure of the phenomenon, and validation of the findings with the participants. Through this process, the researchers sought to move beyond merely identifying recurring topics and instead uncover the shared meanings and essence of rural elementary learners' experiences of learning amid technological advancement.

Research Locale

This study was conducted in selected public elementary schools located in the Northern Barangays of Cebu City, Philippines. These barangays are characterized by predominantly rural communities where learners often face challenges related to limited technological infrastructure, inconsistent internet connectivity, and restricted access to digital learning resources. Such conditions make the locale appropriate for exploring the lived experiences of rural elementary learners as they navigate learning amid technological advancement. The selected schools were chosen because they serve learners from communities that continue to experience technological and educational challenges. Conducting the study in this setting enabled the researcher to obtain rich, context-specific insights into the participants' experiences, support systems, and coping strategies. The locale provided a suitable environment for understanding the realities of rural education and identifying factors that influence learners' educational experiences in the digital age.

Research Participants

The participants of this study consisted of ten (10) Grade 4 to Grade 6 learners enrolled in selected public elementary schools in the Northern Barangays of Cebu City. They were selected through purposive sampling based on their ability to provide rich and meaningful descriptions of their lived experiences related to learning amid technological advancement.

Research Instrument

The primary research instrument used in this study was a researcher-developed semi-structured interview guide designed to elicit in-depth descriptions of the participants' lived experiences of learning amid technological advancement. The guide consisted of open-ended questions focusing on the technological challenges encountered by the learners, the influence of these challenges on their learning experiences, the support they received from their families, communities, and teachers, and the strategies they employed to cope with and adapt to technology-related difficulties. A focus group discussion (FGD) guide was also utilized to supplement the individual interviews and allow participants to collectively share and reflect on their experiences. Prior to data collection, the interview and FGD guides were subjected to content validation by three experts with professional backgrounds relevant to the study and its participants. One validator was a

guidance counselor and Registered Psychometrician (RPM) with professional experience in learner development, psychological assessment, and providing guidance and support to school-aged children. The other two validators were public elementary school teachers with extensive experience in elementary education and direct knowledge of learners' academic and developmental needs; one of them holds the position of Master Teacher, demonstrating advanced professional experience in classroom instruction, instructional supervision, curriculum implementation, and mentoring. The three validators independently evaluated the interview and FGD guides in terms of clarity, relevance, appropriateness, comprehensibility, and alignment with the objectives of the study. Particular attention was given to whether the wording and content of the questions were developmentally appropriate for Grade 4 to Grade 6 learners and capable of eliciting meaningful descriptions of their lived experiences. Comments and recommendations from the validators were consolidated and carefully reviewed by the researchers. Necessary revisions were subsequently made to improve the clarity and appropriateness of the questions before the instruments were finalized and administered to the participants.

Data Gathering Procedure

Prior to data collection, the researchers secured permission from the appropriate school authorities to conduct the study. Since the participants were elementary learners, written informed consent was obtained from their parents or legal guardians, while assent was secured from the learners. The purpose of the study, procedures involved, voluntary nature of participation, confidentiality of information, and participants' right to withdraw at any time were explained using language appropriate to the learners' age and level of understanding. After obtaining the necessary permissions, ten Grade 4 to Grade 6 learners who met the established inclusion criteria were purposively selected. Data were gathered through semi-structured individual interviews and focus group discussions (FGDs) using the validated interview and FGD guides. The sessions were conducted in a quiet, safe, and child-friendly environment that allowed the participants to freely describe their experiences of learning amid technological advancement. Open-ended questions and appropriate follow-up probes were used to encourage participants to elaborate on their experiences, perceptions, challenges, sources of support, and coping strategies. With the consent of the parents or guardians and the assent of the learners, the interviews and FGDs were audio-recorded to ensure accurate documentation of the participants' responses. The researchers also maintained confidentiality throughout the data-gathering process by assigning participant codes instead of using the learners' names. After each session, the recordings were transcribed verbatim and reviewed against the audio recordings to ensure the accuracy and completeness of the transcripts. The verified transcripts were subsequently prepared for analysis using Colaizzi's (1978) phenomenological method. This approach enabled the researchers to systematically examine the participants' accounts and derive the meanings and essence of their lived experiences. As part of Colaizzi's procedure, the findings were returned to the participants for validation or member checking, allowing them to confirm whether the researchers' interpretations accurately represented their experiences.

Results and Discussions

Research Question 1: Explore the technological challenges experienced by rural elementary learners.

The findings of the study based on the thematic analysis of the semi-structured interviews and focus group discussions conducted with ten (10) Grade 4 to Grade 6 rural elementary learners from selected public elementary schools in the Northern Barangays of Cebu City. Analysis of the participants' narratives generated four major themes: (1) Technological Challenges, (2) Family and Community Support, (3) Teacher Influence, and (4) Student Determination and Coping Efforts. These themes represent the essence of the learners' lived experiences as they navigated learning amid technological advancement.

Research Question 2: Describe how these technological challenges shape their learning experiences;

Theme 1. Learning Amid Digital Uncertainty and Limited Access

The participants' narratives revealed that technological advancement, although intended to facilitate learning, was experienced as both an opportunity and a source of difficulty. Access to technology was not consistently available to the learners because many depended on borrowed or shared mobile phones, limited mobile data, unstable internet connectivity, and an unreliable power supply. These conditions affected not only

their ability to access online learning resources but also when and how they could participate in technology-assisted learning activities. Several participants described their dependence on family-owned devices:

"The phone I use is only borrowed because I don't have my own yet. When there is a brownout, the signal also becomes slow." (P1)

"I only borrow my father's phone, and sometimes I have to return it quickly. There are times when the signal and internet are weak and it becomes hard." (P2)

"We only borrow Mama's and Papa's phone. Sometimes they leave the phone so we can study. Sometimes there is no signal, so I just play instead." (P3)

These accounts show that access to learning often depends on circumstances beyond the learners' control. For those without their own devices, studying meant waiting until a parent or family member could lend them a phone, sometimes only for a limited time. In this way, a borrowed phone was more than just a device, it became their temporary connection to learning. When the phone had to be returned, studying could be interrupted even when an assignment or lesson was not yet finished.

Other participants described how internet connectivity, mobile data, weather conditions, and electricity further complicated their learning:

"I don't have a cellphone, so I just borrow one and use it to search for class. Mama loads the phone, but the load gets used up. When it rains, the signal becomes very slow and sometimes there is a brownout." (P4)

"I only borrow my mother's cellphone and use it for school and studying. The signal is very slow and it becomes a big problem because it lowers my grades since I can't catch up." (P7)

"I borrow a phone from my mother, father, or sister to search on Google. Sometimes there is a brownout and the signal disappears. I have a hard time when there is no internet or electricity, or when everything is slow." (P9)

These experiences show that technological challenges created uncertainty and frequent interruptions in the learners' everyday studies. Many had to adjust their study time depending on when a borrowed phone was available, whether there was enough mobile data, or whether the internet and electricity were working. As a result, even simple tasks such as searching for information or completing schoolwork could become difficult and unpredictable.

The learners' experiences also show that having access to technology did not always mean being able to use it when needed. A shared phone, for example, might be available only for a short time, while mobile data could become less useful when the signal was weak. These situations made access to learning temporary and unreliable, sometimes leaving learners frustrated, confused, or worried about falling behind.

These experiences reflect the broader digital divide discussed by UNESCO (2023) and the World Bank (2022), but the learners' stories show what this divide actually meant in their daily lives. For them, it meant waiting for a phone, borrowing a device, dealing with weak signals, and finding ways to continue despite interruptions. The essence of their experience can therefore be understood as learning amid digital uncertainty, where having technology was not enough; what mattered was having reliable and consistent access when learning needed to take place.

Research Question 3: Explore how family, community, and teacher support is experienced by rural elementary learners in navigating technological challenges;

Theme 2. Learning Sustained Through Family and Community Support

The participants' narratives revealed that family and community support helped sustain their learning amid technological limitations. Parents, siblings, relatives, and friends provided assistance by lending devices, purchasing mobile data, explaining lessons, and offering encouragement when learners experienced difficulties. The participants shared:

"My mother helps me so we can learn. I also think hard so I can understand. They help by buying load or giving what they have." (P1)

"Papa is there, so I ask him and sometimes my older brother. They help me when I'm confused and teach me how to understand." (P3)

"My family helps me. Mama and Papa buy load for me. When I have a hard time searching on Google, my older sister helps me." (P8)

These narratives show that learning with limited technology was not something the learners faced on their own. When they did not have a device, had difficulty connecting to the internet, or struggled with

technology-assisted lessons, they often turned to their families for help. Parents provided phones or mobile data when they could, while siblings and relatives helped explain lessons. For the learners, family support was therefore more than simply providing resources; it also meant having someone to guide, encourage, and help them continue learning.

The participants' experiences also show how family relationships helped fill the gaps when technology was not enough. Even without a personal device or reliable internet connection, learners could still find ways to continue their schoolwork when family members lent them a phone, provided mobile data, or helped them understand their lessons. This supports Bronfenbrenner's (1979) Ecological Systems Theory, which emphasizes the importance of a child's immediate environment, and UNICEF (2023), which recognizes the role of supportive relationships in helping disadvantaged learners continue their education.

The essence of this theme can therefore be understood as learning sustained through the support of others. When technology was limited or unreliable, learners depended on the people around them not only for devices and internet access but also for guidance, encouragement, and motivation. Their experiences show that continuing to learn despite technological difficulties was not simply a result of their own determination; family support also played an important part in helping them move forward.

Theme 3. Teacher Responsiveness as a Bridge to Learning

The participants' narratives revealed that teachers played a significant role in helping them navigate learning despite technological limitations. Learners valued teachers who explained difficult lessons, remained available when assistance was needed, and recognized the challenges associated with limited internet connectivity and access to digital devices.

The participants shared:

"It really helps when I don't understand the lesson. Apps help a little, but it is better if the teacher is the one teaching." (P1)

"It helps when I don't understand something because the teacher is there. Some teachers are available when needed." (P2)

"I hope there is free Wi-Fi in school. I also want us to be taught well and explained clearly." (P7)

These accounts show that teachers remained an important part of the learners' experiences even when technology was available. Although digital applications gave them access to information and learning materials, the learners still turned to their teachers when lessons were difficult or confusing. They valued having someone who could explain ideas clearly, answer their questions, and guide them through their learning. In this sense, technology did not replace the teacher. Instead, the difficulties learners experienced with devices and internet connectivity made teacher guidance and presence even more important.

These experiences reflect Vygotsky's (1978) Social Constructivist Theory, which emphasizes the importance of guidance and support in helping learners develop understanding. The participants' stories also show that teachers who understood their technological limitations could make learning less difficult and help them remain engaged. On the other hand, activities that assumed every learner had reliable internet access or a personal device could create additional pressure. This supports UNESCO's (2023) emphasis on making technology integration equitable and responsive to the different circumstances of learners.

The essence of this theme can therefore be understood as teachers helping learners bridge the gap between technological difficulties and meaningful learning. Having access to a phone, an application, or the internet was not always enough for learners to understand their lessons. They also needed teachers who recognized their situation and were willing to provide guidance, flexibility, and support. For the participants, teachers were not simply sources of information; they were people they could turn to when technology alone could not meet their learning needs.

Research Question 4: Understand the coping strategies employed by rural elementary learners in responding to technological barriers.

Theme 4. Persistence and Adaptation Amid Technological Challenges

Despite the technological difficulties they encountered, the participants demonstrated determination to continue learning by adapting to the resources available to them. They described borrowing gadgets, searching for better internet access, using alternative learning materials, and seeking assistance from teachers, family members, and classmates. Their repeated desire for accessible internet also reflected their awareness that better connectivity could make learning easier and more manageable.

The participants shared:

"I hope the school can have internet." (P1)

"It would help if the school had Wi-Fi or at least internet." (P2)

"I hope there is free Wi-Fi in the school or classroom." (P7)

From a phenomenological perspective, these narratives show that coping was part of the learners' everyday experience of trying to continue their education despite technological difficulties. When a device, internet connection, or other resource was unavailable, they did not simply stop learning. Instead, they adjusted to the situation by borrowing devices, looking for available internet access, using other learning materials, or asking others for help. These efforts show how the learners continually found ways to stay involved in their studies even when technology made learning more difficult.

These experiences are consistent with Bandura's (1997) Self-Efficacy Theory, which suggests that believing in one's ability to deal with challenges can encourage persistence. However, the learners' stories also show that their ability to keep going did not depend on determination alone. Support from family members, teachers, and peers, together with whatever resources were available, helped them manage their difficulties. Their resilience was therefore shaped by both their willingness to keep trying and the support they received from the people around them.

The essence of this theme can therefore be understood as persisting through adaptation. Rather than simply accepting their technological limitations, the learners learned to adjust, seek help, and make the most of what was available to them. Their experiences show that resilience does not mean facing difficulties alone; it also means finding practical ways to move forward and knowing when to rely on others for support.

Research Question 5: Explore the meanings and perceptions that rural elementary learners attribute to their experiences of learning amid technological advancement.

Taken together, the themes show that learning amid technological advancement was a constant process of adjusting to both limitations and available support. Technology was important to the learners, but it was not always reliable or readily available. They often depended on borrowed devices, mobile data, stable internet connections, electricity, and the help of people around them. When technology failed, support from family members, teachers, and the community, along with the learners' own efforts to adjust and find alternatives, helped them continue. Their experiences therefore went beyond simply having limited access to technology; they involved uncertainty, dependence on others, meaningful support, and the determination to keep learning despite difficulties.

The findings also show that providing technology alone may not be enough to address the challenges faced by rural learners. Reliable internet access and appropriate devices are important, but learners also need understanding teachers, supportive families, and communities that can respond to their needs. Improving their learning experiences therefore requires schools, families, communities, and policymakers to work together in providing both technological resources and appropriate support. By giving attention to the learners' own experiences, the study highlights that meaningful educational improvement should not focus only on technology but also on creating inclusive and responsive learning environments that reflect the realities of rural learners.

Ethical Considerations

This study adhered to the fundamental ethical principles of respect for persons, beneficence, and justice throughout the research process. Prior to data collection, permission to conduct the study was obtained from the appropriate school authorities. Written informed consent was secured from the parents or guardians of the participating learners, while assent was obtained from the learners themselves after the study's purpose and procedures were explained in language appropriate to their age. Participation in the study was entirely voluntary, and participants were informed of their right to decline or withdraw at any stage without any negative consequences. To protect their privacy, pseudonyms or codes were used instead of their real names, and all information gathered was treated with strict confidentiality. Audio recordings, transcripts, and other research data were securely stored and used solely for academic purposes. Considering that the participants were children, the researcher ensured that the interview and focus group discussions were conducted in a safe, respectful, and child-friendly environment. Questions were limited to topics related to the learners' educational experiences and posed in a manner that minimized discomfort or distress. The researcher remained sensitive to the participants' well-being throughout the data collection process and upheld the ethical standards for conducting research involving human participants.

Conclusion

This phenomenological study explored the lived experiences of rural elementary learners as they navigated learning amid technological advancement. The findings revealed that although technological innovations have created new opportunities for education, rural learners continue to face significant barriers, including limited access to digital devices, unstable internet connectivity, and inadequate technological resources. These challenges affected their participation in learning and highlighted the persistent digital divide experienced by learners in rural communities. Despite these obstacles, the participants demonstrated resilience and determination by adopting various coping strategies to continue their education. The study also underscored the vital roles of families, communities, and teachers in supporting learners through emotional encouragement, instructional assistance, and access to available resources. The four themes Technological Challenges, Family and Community Support, Teacher Influence, and Student Determination and Coping Efforts collectively illustrate that learners' educational experiences are shaped by the interaction of technological, social, and personal factors. Overall, the study concludes that addressing the educational needs of rural learners requires more than expanding access to technology. It also calls for collaborative efforts among schools, families, communities, and policymakers to provide equitable digital resources, responsive teaching practices, and supportive learning environments. By understanding the lived experiences of rural elementary learners, stakeholders can develop more inclusive and context-responsive educational programs that promote equal learning opportunities for all.

Recommendations

Based on the findings and lived experiences of the participants, the following recommendations are proposed: School administrators should establish school-based Wi-Fi hubs or designated internet-access areas where learners can safely access reliable connectivity for school-related activities. This directly responds to participants who expressed difficulty with unstable internet and specifically requested free Wi-Fi in their schools; Schools, local government units (LGUs), and community stakeholders should develop gadget-sharing or device-lending initiatives for learners who do not own digital devices. Schools may maintain a pool of tablets, smartphones, or other appropriate devices that learners can borrow for academic purposes, particularly those who currently depend on their parents' or relatives' phones; Barangays and LGUs should consider establishing community digital learning centers equipped with internet connectivity, charging facilities, and basic digital devices. These centers can provide alternative learning spaces for learners who experience weak internet signals, limited mobile data, or lack suitable technological resources at home; Teachers should provide flexible and accessible learning options for learners experiencing technological difficulties. Printed materials, offline resources, reasonable submission periods, and alternative activities should remain available when learners cannot access the internet or digital devices. Teachers should also continue providing clear explanations and individualized guidance, which participants identified as important in helping them understand their lessons; Schools should strengthen partnerships with families and communities to support learners experiencing technological difficulties. Parents and caregivers may be provided with information on available school and community resources, while schools can establish mechanisms for identifying and assisting learners who frequently experience problems with devices, connectivity, or mobile data; DepEd, LGUs, and other concerned stakeholders should prioritize sustainable digital infrastructure in rural communities, particularly reliable internet connectivity and access to appropriate devices. Programs should consider not only whether technology is available but whether learners can access it consistently and meaningfully for their education; Future researchers may explore the experiences of parents, teachers, and community stakeholders to provide a broader understanding of how technological barriers are addressed within rural communities. Future studies may also examine the effectiveness of interventions such as school Wi-Fi hubs, device-lending programs, and community digital learning centers.

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