INTERACTION: Jurnal Pendidikan Bahasa Vol. 13, No. 2; Juni 2026
P-ISSN: 2406-9558; E-ISSN: 2406-9566

Beyond Digital Access: Teachers' and Students' Perceptions of Technology Integration in Rural EFL Classrooms in Indonesia

Rizqi Claudia Wardani H
rizqiclaudiawardani@gmail.com
Universitas Pendidikan Muhammadiyah Sorong

Muftihaturrahmah Burhamzah
amaburhamzah@unm.ac.id
Universitas Negeri Makassar

Nurdin Noni
nurdinnoni@unm.ac.id
Universitas Negeri Makassar

ABSTRACT

This study investigates the reality of technology integration in English as a Foreign Language (EFL) classrooms at SMA 5 Baraka, Enrekang, Indonesia. Although educational technology has become a central component of contemporary pedagogy, implementation in peripheral and resource-constrained schools often remains inconsistent. The study aimed to explore actual classroom practices, teacher and student perceptions, and contextual barriers affecting sustainable integration. A qualitative case study design was employed. Data were collected through classroom observations, semi-structured interviews, student focus-group discussions, and document analysis. Data were analyzed thematically through coding, categorization, and triangulation. The findings indicate that technology integration occurred primarily through smartphones, projectors, WhatsApp, YouTube, and presentation software. Teachers perceived technology as beneficial for increasing motivation, facilitating listening exposure, and improving instructional efficiency. Students expressed positive attitudes toward multimedia-supported learning environments. However, unstable internet connectivity, inadequate devices, limited professional training, time constraints, and inconsistent institutional support restricted deeper pedagogical innovation. Most practices remained at functional levels of substitution and augmentation rather than transformative use. The study concludes that meaningful technology integration requires infrastructure readiness, sustained teacher development, and context-sensitive policy support. These findings contribute empirical insight into digital inequality and pedagogical adaptation in Indonesian EFL settings.

Keywords: Technology Integration; EFL Classrooms; Qualitative Inquiry; Rural Education; Digital Pedagogy

INTRODUCTION

Technology has transformed language education by providing broader access to information, authentic communication, and interactive learning resources. In English as a Foreign Language (EFL) contexts, digital tools such as learning applications, online videos, learning management systems, mobile devices, and collaborative platforms have become integral components of contemporary language instruction. These technologies enable learners to access authentic English materials, communicate with speakers from diverse linguistic backgrounds, receive immediate feedback, and participate in interactive learning activities beyond the traditional classroom. Consequently, technology has shifted language learning from teacher-centered instruction toward more learner-centered, collaborative, and flexible educational experiences. Rather than functioning solely as supplementary instructional media, digital technologies increasingly serve as pedagogical tools that facilitate meaningful language acquisition, critical thinking, and autonomous learning.

The rapid development of educational technology has further accelerated digital transformation in schools worldwide. Following the expansion of internet accessibility, cloud computing, mobile learning, and artificial intelligence, educational institutions are expected to integrate technology into daily teaching practices to prepare learners for the demands of the twenty-first century. In language education, technology provides opportunities for students to improve listening, speaking, reading, and writing skills through multimedia exposure, interactive exercises, virtual collaboration, and authentic communication. Teachers can utilize digital platforms to design engaging lessons, monitor students' progress, personalize instruction, and create learning environments that accommodate diverse learning styles and proficiency levels. Previous studies have consistently demonstrated that effective technology integration contributes positively to learner motivation, engagement, communication skills, and academic achievement when supported by appropriate pedagogical strategies and institutional resources.

Despite these educational benefits, technology integration extends far beyond the simple availability of digital devices or internet access. Meaningful technology integration requires teachers to possess sufficient technological knowledge, pedagogical competence, and subject-matter expertise to employ digital tools effectively within instructional practices. It also depends on institutional readiness, educational leadership, technical support, infrastructure quality, and continuous professional development. Consequently, successful technology integration represents a complex educational process involving interactions among teachers, students, schools, policies, and technological environments. When one or more of these components are insufficient, technology tends to be used only as a substitute for conventional teaching methods rather than as a catalyst for pedagogical innovation.

Within EFL education, technology plays a particularly important role because language learning requires continuous exposure to authentic linguistic input and meaningful communication. Digital media enable learners to access native-speaker pronunciation, authentic conversations, audiovisual materials, online dictionaries, language-learning applications, and interactive communication platforms that may not be available in conventional classrooms. Technology also encourages learner autonomy by allowing students to practice language skills independently outside classroom hours. Furthermore, collaborative platforms support interaction among learners through discussion forums, online projects, and peer feedback, thereby strengthening communicative competence and intercultural awareness. These advantages have encouraged many educational institutions to integrate technology into English language teaching as part of broader educational modernization efforts.

In Indonesia, the government has promoted educational digitalization through various national initiatives aimed at improving digital literacy, expanding internet connectivity, and encouraging technology-supported teaching and learning. Schools have increasingly adopted digital learning platforms, online assessment systems, multimedia instructional materials, and communication applications to enhance educational quality. These initiatives became even more prominent following the COVID-19 pandemic, which accelerated the adoption of online and blended learning across all educational levels. As a result, many teachers have become more familiar with digital technologies and continue incorporating them into classroom instruction even after the return to face-to-face learning.

Nevertheless, technology integration in Indonesian schools remains uneven. Considerable disparities continue to exist between urban and rural educational contexts regarding technological infrastructure, internet accessibility, device availability, and opportunities for teacher professional development. Schools located in metropolitan areas generally benefit from stable internet connections, modern technological facilities, and regular digital training programs. In contrast, many schools in rural and geographically isolated regions continue to experience unstable internet connectivity, limited access to technological equipment, insufficient maintenance support, and unequal student ownership of digital devices. These contextual challenges significantly influence how teachers utilize technology and often limit the implementation of innovative digital pedagogies. Therefore, understanding technology integration requires careful consideration of the local educational context in which digital learning occurs.

SMA 5 Baraka, located in Enrekang Regency, South Sulawesi, represents one example of a rural educational setting where technology integration is shaped by contextual opportunities and constraints. Although teachers and students have begun utilizing smartphones, projectors, social media applications, and online learning resources to support English instruction, the extent and quality of technology integration remain influenced by infrastructural limitations, institutional support, teacher preparedness, and learner accessibility. Investigating technology integration within this context provides valuable insight into how educational

technology is implemented under real classroom conditions rather than under ideal technological circumstances. Such context-specific evidence is important because educational policies frequently assume that schools possess similar levels of technological readiness despite considerable regional disparities.

Previous studies have widely reported the positive influence of technology on language learning. Gilakjani (2017), for example, argued that digital technologies improve learners' motivation, communication skills, and language achievement when integrated appropriately into classroom instruction. Similarly, Tondeur et al. (2019) emphasized that teachers' beliefs, professional competence, and institutional support strongly determine successful technology integration. Studies conducted in Indonesian educational settings have likewise indicated that digital tools facilitate language learning while simultaneously revealing persistent challenges related to infrastructure, digital competence, and resource availability. These findings collectively demonstrate that technology possesses considerable potential for improving EFL education.

However, much of the existing literature has primarily examined technology integration through quantitative measurements of learning outcomes, technology acceptance, or teacher perceptions within relatively well-resourced educational environments. Comparatively fewer studies have investigated how technology is actually implemented in rural Indonesian EFL classrooms where infrastructural limitations, contextual realities, and local educational conditions substantially influence teaching practices. Furthermore, limited research has simultaneously explored classroom practices, teacher perceptions, student experiences, and contextual barriers within a single qualitative investigation. As a result, a comprehensive understanding of the realities of technology integration in underrepresented rural schools remains insufficient.

Addressing this research gap is important because educational technology should be understood not only as a collection of digital tools but also as a socially situated pedagogical practice influenced by institutional culture, teacher agency, student participation, and resource availability. Examining classroom realities enables researchers to identify the practical challenges teachers encounter, the strategies they adopt to overcome contextual limitations, and the ways students perceive technology-supported learning. Such evidence contributes to a more balanced understanding of technology integration that extends beyond technological optimism toward realistic educational implementation.

Therefore, this study aims to investigate the reality of technology integration in English as a Foreign Language classrooms at SMA 5 Baraka, Enrekang. Specifically, the study seeks to examine how technology is implemented during English instruction, explore teachers' and students' perceptions toward technology-supported learning, and identify the contextual challenges affecting sustainable technology integration. By providing an in-depth qualitative analysis of classroom practices within a rural Indonesian context, this study contributes empirical

evidence to the growing literature on digital pedagogy in EFL education and offers practical recommendations for teachers, school leaders, and policymakers seeking to strengthen technology integration in resource-constrained educational settings.

LITERATURE REVIEW

Previous Related Studies

Numerous studies have examined technology integration in language education from different perspectives. Gilakjani (2017) concluded that technology improves students' motivation, communication skills, and overall language learning when integrated appropriately into classroom instruction. Similarly, Ertmer and Ottenbreit-Leftwich (2019) emphasized that teachers' beliefs, knowledge, and professional confidence strongly influence successful technology implementation.
Tondeur et al. (2019) proposed a comprehensive framework demonstrating that teacher competence, institutional support, and school leadership collectively determine effective classroom technology integration. Likewise, Scherer et al. (2021) found that teachers' acceptance of educational technology is influenced by perceived usefulness, self-efficacy, and organizational support.
Within the Indonesian context, Hidayati and Diana (2022) reported that teachers in rural schools relied primarily on smartphones, WhatsApp, and social media because more sophisticated learning platforms were constrained by limited infrastructure. Purnawarman et al. (2021) further observed that although Indonesian teachers generally demonstrate positive attitudes toward educational technology, many continue to require professional development to integrate technology pedagogically rather than merely functionally.
Despite these valuable contributions, previous research has largely focused on technology acceptance, teacher readiness, or learning outcomes. Limited attention has been given to qualitative investigations that simultaneously explore classroom practices, teachers' perceptions, students' experiences, and contextual challenges within rural Indonesian EFL classrooms. This gap indicates the need for more context-sensitive qualitative studies capable of explaining how technology integration actually occurs in real educational settings.

Technology Integration in EFL Education

Technology integration refers to the meaningful incorporation of digital technologies into teaching and learning processes to improve instructional quality and student learning outcomes. Rather than simply replacing traditional teaching tools, effective technology integration enables teachers to redesign learning experiences that promote active participation, collaboration, creativity, and learner autonomy. In English as a Foreign Language (EFL) education, technology has become increasingly important because language acquisition requires continuous exposure to authentic language input, meaningful communication, and interactive learning experiences.

Various digital technologies have been employed in EFL classrooms, including learning management systems, mobile applications, video-sharing platforms, online dictionaries, digital storytelling tools, virtual meeting platforms, and artificial intelligence-assisted language learning applications. These technologies facilitate the development of listening, speaking, reading, and writing skills while simultaneously encouraging students to become more independent learners. Multimedia resources such as YouTube videos, podcasts, and interactive quizzes provide authentic linguistic input that cannot always be obtained through printed textbooks alone.

Technology integration also supports collaborative learning through online discussion forums, shared digital workspaces, and project-based learning activities. Students can communicate with peers, exchange ideas, receive immediate feedback, and participate in authentic language use beyond classroom boundaries. Consequently, technology contributes not only to language proficiency but also to learners' digital literacy, critical thinking, and intercultural competence. Nevertheless, successful technology integration requires adequate infrastructure, teacher competence, institutional support, and pedagogically appropriate instructional design.

Theoretical Perspectives on Technology Integration

Several theoretical frameworks have been proposed to explain effective technology integration in educational settings. Among the most influential is the Technological Pedagogical Content Knowledge (TPACK) framework developed by Mishra and Koehler (2006). The framework argues that successful technology integration requires teachers to combine three interrelated forms of knowledge: technological knowledge, pedagogical knowledge, and content knowledge. Technology alone cannot improve learning unless teachers understand how digital tools support appropriate teaching strategies and disciplinary content.

Another widely adopted framework is the Substitution, Augmentation, Modification, and Redefinition (SAMR) model proposed by Puentedura (2014). This model categorizes technology integration into four developmental levels. At the substitution level, technology merely replaces traditional instructional tools without changing learning activities. At the augmentation level, technology provides functional improvements while maintaining existing instructional approaches. Modification represents substantial redesign of learning tasks through digital technologies, whereas redefinition enables entirely new learning experiences that would be impossible without technology.

The SAMR model has been extensively used to evaluate the depth of technology integration in classrooms. Studies indicate that many teachers remain at the substitution and augmentation stages because infrastructural limitations, insufficient training, and pedagogical uncertainty prevent more transformative

technology use. Consequently, technology often functions as an instructional aid rather than as an instrument for educational innovation.

Teachers' and Students' Perceptions of Technology Integration

Perception plays a significant role in determining whether technology is successfully integrated into classroom practice. According to Robbins and Judge (2017), perception refers to the process through which individuals organize and interpret information to create meaningful understanding of their environment. Teachers' perceptions influence instructional decisions, willingness to experiment with new technologies, and confidence in adopting innovative pedagogical approaches. Teachers who perceive technology as useful and easy to implement are generally more willing to integrate digital tools into classroom instruction. Positive perceptions are often associated with previous successful experiences, adequate professional training, institutional encouragement, and access to technological resources. Conversely, teachers who experience technical difficulties, insufficient support, or low digital competence may demonstrate reluctance toward technology integration.

Students' perceptions are equally important because technology-supported learning depends on learner engagement and acceptance. Research suggests that students generally perceive multimedia learning positively because digital resources increase classroom interaction, learning flexibility, and motivation. Technology also enables students to access authentic English materials independently and develop greater confidence in practicing language skills outside formal classroom settings. However, unequal access to digital devices, unstable internet connectivity, and varying levels of digital literacy may influence students' learning experiences and perceptions. Understanding both teachers' and students' perceptions provides valuable insight into how technology integration functions within particular educational contexts and helps explain differences in implementation across schools.

Challenges of Technology Integration in Rural EFL Contexts

Although technology offers considerable educational benefits, many schools continue to encounter significant barriers during implementation. Research consistently identifies inadequate technological infrastructure, unstable internet connectivity, insufficient digital devices, and limited institutional support as major obstacles to effective technology integration. These challenges are particularly evident in rural and geographically isolated schools where educational resources remain unevenly distributed. Teacher-related challenges also influence technology integration. Many teachers report limited opportunities for professional development in digital pedagogy, resulting in uncertainty regarding the effective use of educational technologies. Without continuous training, teachers may rely primarily on basic digital tools such as PowerPoint presentations, messaging

applications, or online videos while avoiding more interactive technologies that require advanced digital competence.

Student-related challenges include unequal ownership of digital devices, inconsistent internet access, and varying levels of digital literacy. Some students experience difficulty participating fully in technology-supported learning because they share smartphones with family members or have limited internet quotas. These socioeconomic factors create educational inequalities that extend beyond classroom instruction. Institutional support likewise determines the sustainability of technology integration. School leadership, maintenance services, technical assistance, and educational policies collectively influence teachers' opportunities to incorporate digital technologies into everyday teaching practices. Therefore, technology integration should be understood as a multidimensional educational process rather than merely the availability of technological equipment.

METHOD

Design and Samples

This study employed a qualitative case study design to investigate the integration of technology in English as a Foreign Language (EFL) learning at SMA 5 Baraka, Enrekang. The research focused on understanding how technology was implemented in classroom practices, how teachers and students experienced its use, and what challenges emerged during the learning process. A qualitative case study was considered appropriate because it enabled the researcher to explore the phenomenon deeply within its real educational context. According to Yin (2018), a case study design is suitable for investigating contemporary phenomena within real-life contexts, especially when the boundaries between the phenomenon and the context are not clearly evident. In addition, Creswell and Poth (2018) state that qualitative research emphasizes understanding participants' perspectives, experiences, and meanings in relation to social and educational issues. Therefore, this design allowed the researcher to obtain rich and detailed information regarding technology integration in EFL classrooms.

The participants consisted of ten English teachers and twenty students from grade XI and XII. The participants were selected using purposive sampling because they were directly involved in technology-supported English learning activities. The teacher participants were selected based on three criteria: (1) actively teaching English during the data collection period, (2) integrating digital tools into classroom instruction, and (3) having at least three years of teaching experience. Meanwhile, the student participants were selected based on their active participation in classroom learning activities and their experience using technology during English lessons. The students represented different levels of academic achievement and digital familiarity to provide diverse perspectives regarding technology integration.

Instrument and Procedure

The study used three research instruments, classroom observation sheets, semi-structured interview guides, and document analysis checklists. First, classroom observations were conducted during six English learning sessions to identify actual technology integration practices, teacher-student interaction, and students' responses toward digital learning activities. The observation sheet focused on technology use, classroom engagement, instructional strategies, and learning interaction. Second, semi-structured interviews were conducted with ten English teachers and ten selected students. The interviews aimed to explore participants' perceptions, experiences, benefits, and challenges regarding technology integration in EFL learning. Each interview lasted approximately 20–30 minutes and was audio-recorded with participants' consent. Third, document analysis was conducted to examine lesson plans, teaching media, learning materials, and school technology inventories. The documents were analyzed to support observational and interview findings. The data collection procedure began with classroom observations, followed by interviews and document analysis. The researcher conducted field notes during observations and transcribed all interviews for further analysis.

Data Analysis

The data were analyzed using thematic analysis adapted from Braun and Clarke (2006). The analysis involved several stages: data familiarization, transcription, coding, theme categorization, interpretation, and conclusion drawing. The researcher identified repeated patterns related to technology practices, participant perceptions, and implementation challenges. To enhance trustworthiness, triangulation was conducted across observations, interviews, and document analysis. Member checking was also applied by confirming interview interpretations with participants to ensure credibility and accuracy of the findings.

RESULT AND DISCUSSION

Findings on Current Technology Use

The findings showed that technology was used in limited but meaningful ways. Teachers frequently used smartphones to share materials, projectors for slides, and YouTube videos for listening practice. WhatsApp groups were used for homework reminders and communication. It can be see in the following table,

Table 1. List of Technology Tool and Frequency

Technology Tool	Frequency of Use	Main Purpose
Smartphone	High	Communication, searching materials

Projector	Moderate	Presentations, videos
YouTube	Moderate	Listening, pronunciation
WhatsApp	High	Assignments, announcements
Learning Platforms	Low	Occasional online tasks

Table 1 illustrates the types of digital technologies most frequently used by English teachers during classroom instruction. Smartphones emerged as the most frequently utilized technological tool because they were readily available to both teachers and students and required minimal additional infrastructure. Teachers mainly employed smartphones to distribute learning materials, access online references, communicate with students through messaging applications, and support classroom discussions. Their portability and widespread ownership made smartphones the most practical technological resource within the school's existing conditions.

Projectors and YouTube videos were used with moderate frequency to support classroom presentations and listening activities. Teachers explained that multimedia presentations enabled students to understand lesson content more clearly by combining visual, textual, and audiovisual information. YouTube videos were particularly valuable for exposing students to authentic English pronunciation, conversational expressions, and cultural contexts that could not easily be demonstrated through conventional printed materials. Students also reported that audiovisual resources increased their attention and motivation because lessons became more engaging and interactive than textbook-based instruction.

WhatsApp was another technology used frequently to facilitate communication outside classroom hours. Teachers relied on WhatsApp groups to distribute assignments, announce classroom activities, provide learning materials, and respond to students' questions. The platform also enabled students to maintain communication with their teachers and classmates even when face-to-face meetings were not possible. This finding indicates that communication technologies have become an important extension of classroom learning rather than merely serving administrative purposes.

In contrast, dedicated learning management systems and other online learning platforms were used only occasionally. Interviews revealed that unstable internet connectivity, limited technological facilities, and insufficient teacher familiarity with more advanced educational platforms restricted their regular implementation. Consequently, teachers tended to select technologies that were simple, familiar, and easily accessible rather than adopting more sophisticated digital systems requiring stronger infrastructure and greater technical expertise. These findings suggest that technology integration at SMA 5 Baraka remains largely functional, emphasizing accessibility and practicality over pedagogical transformation.

Teachers' Perceptions toward Technology Integration

The findings revealed that teachers demonstrated positive perceptions toward technology integration in EFL classrooms. Both teachers believed that digital tools helped them explain materials more effectively and increased students' attention during learning activities. Teachers frequently used PowerPoint presentations, YouTube videos, WhatsApp groups, and smartphones to support classroom

instruction. One teacher explained that videos and multimedia materials helped students understand pronunciation and contextual language use more clearly. Another teacher stated that WhatsApp facilitated communication and assignment distribution outside classroom hours. Teachers also perceived technology as a practical solution for accessing authentic English materials that were not available in printed textbooks.

Based on perception theory by Robbins and Judge (2017), teachers' perceptions were influenced by their previous teaching experiences, motivation to improve instruction, and environmental factors such as school support and technological access. Positive experiences using digital media encouraged teachers to continue integrating technology into classroom activities. The findings are consistent with Gilakjani (2017), who found that technology improves instructional effectiveness and learner engagement in language learning environments. Similarly, Ertmer and Ottenbreit-Leftwich (2019) emphasized that teachers' positive beliefs toward technology influence successful classroom integration.

Students' Perceptions toward Technology Integration

Students also expressed positive perceptions regarding technology-supported learning. Most students reported that multimedia materials such as videos, digital quizzes, and online exercises made English lessons more interesting and interactive. Students stated that they became more motivated and confident during lessons involving visual and audiovisual media. Several students explained that YouTube videos improved their listening skills and pronunciation because they could hear authentic English conversations directly from native speakers. Some students also used mobile applications independently to search for vocabulary meanings and grammar explanations.

However, a few students experienced difficulties because they did not always have stable internet access or sufficient mobile data. Some students also shared devices with family members, which limited their participation in online assignments outside school hours. According to Robbins and Judge (2017), students' perceptions were influenced by both internal and external factors. Internal factors included learning motivation, curiosity, and digital familiarity, while external factors involved internet access, device availability, and classroom environment. These findings support Lai and Zheng (2021), who argue that mobile technologies encourage learner autonomy and flexible learning opportunities in EFL contexts.

Challenges of Technology Integration

Although participants demonstrated positive perceptions, several challenges hindered effective technology integration. The major barriers included unstable internet connectivity, limited technological facilities, insufficient teacher training, and unequal access to digital devices among students. Teachers explained that poor internet access frequently interrupted online activities and limited the use of

interactive digital platforms. In addition, the school had a limited number of projectors and technological equipment, causing teachers to rely mainly on smartphones and simple presentation tools.

Teachers also reported that they needed more professional development opportunities related to digital pedagogy and advanced educational applications. Most technology use remained at the substitution and augmentation levels because teachers primarily used digital tools to replace traditional teaching methods rather than redesign learning activities. The findings align with the SAMR model proposed by Puentedura (2014), which explains that technology integration often begins at functional levels before reaching transformative practices. The findings also support UNESCO (2023), which highlights that educational inequality and infrastructure limitations continue to affect digital learning implementation in developing regions.

The findings indicate that teachers and students at SMA 5 Baraka generally perceive technology integration positively because it supports engagement, communication, and access to authentic learning materials. Technology created more interactive and motivating classroom environments, particularly through videos, mobile applications, and digital communication platforms. However, the integration of technology in this rural school context remains functional rather than transformative. Most teachers used technology to support existing instructional practices instead of developing collaborative or innovative digital learning models. This condition reflects the substitution and augmentation stages of the SAMR framework.

Perception theory by Robbins and Judge (2017) helps explain how participants' experiences and environmental conditions shaped their attitudes toward technology use. Positive learning experiences encouraged participants to value digital learning, while infrastructural limitations reduced opportunities for more advanced implementation. The findings suggest that successful technology integration in rural EFL classrooms requires balanced support between technological infrastructure, teacher competence, and institutional policy. Continuous professional training, reliable internet access, and equitable device availability are essential for improving digital learning quality in Indonesian rural schools.
The findings suggest that effective technology integration requires more than device availability. Schools need reliable internet access, maintenance support, and structured professional development. Teachers need mentoring in pedagogically meaningful digital strategies for speaking, listening, assessment, and learner autonomy. Policymakers should design differentiated support for rural and urban schools based on actual readiness levels. This study focused on one school and a limited number of participants; therefore, findings are context-specific and not statistically generalizable. Future studies may compare multiple rural schools, employ mixed methods, or test intervention-based digital teaching models in EFL classrooms.

CONCLUSION

This study concludes that teachers and students at SMA 5 Baraka, Enrekang demonstrate positive perceptions toward technology integration in EFL classrooms. Technology supports student motivation, classroom interaction, listening exposure, and learning flexibility through the use of smartphones, YouTube, projectors, and communication platforms such as WhatsApp. Nevertheless, the implementation of technology integration remains limited by infrastructural barriers, unequal device access, unstable internet connectivity, and insufficient professional development opportunities. As a result, technology integration has not yet reached transformative levels of digital pedagogy. The study recommends that schools and policymakers provide sustainable infrastructure support, digital training programs, and context-sensitive educational policies to strengthen technology integration in rural EFL classrooms. Future research may involve larger participant groups, comparative school settings, or mixed-method approaches to investigate the long-term impact of digital learning practices.

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