Koli Journal: English Language Education
Vol 6, No 2, December 2025
E-ISSN: 2745-9055
DOI: *https://doi.org/10.30598/koli.6.2.108-121*

Contextualized Low-Tech Blended Learning for EFL Instruction in Remote Island Schools: A Classroom Action Research at SMP Negeri Tiakur, Indonesia

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ABSTRACT

This study demonstrates that a low-tech blended learning model, which integrates locally contextualized video materials and Google Classroom, can significantly improve English grammar achievement among junior high school students in a remote island context. At SMP Negeri Tiakur in Maluku Barat Daya, Indonesia, a single-cycle classroom action research intervention with thirteen eighth-grade students resulted in a 51.8% mean score increase (from 4.46 to 6.77) and enhanced engagement, motivation, and digital adaptability. To better contextualize this improvement, the 51.8% gain in mean scores translates to an effect size above the general educational 'hinge point' of 0.40, as proposed by John Hattie, indicating a practically significant impact on learning outcomes. Most students (89%) indicated that blending cultural content with technology made English learning more meaningful and accessible. These findings reinforce the view that the impact of digital pedagogy depends on meaningful contextual integration rather than technological sophistication. The study contributes to understanding how culturally grounded, low-tech blended learning can empower learners in underserved educational environments.

Keywords: Blended Learning, Contextual EFL Instruction, Digital Pedagogy, Kalwedo Culture, Remote Island Education

INTRODUCTION

Educational equity remains a significant challenge in Indonesia, where geography characterized by thousands of islands presents a notable opportunity gap for learners in accessing quality digital education. In remote island regions such as Maluku Barat Daya, this gap is exacerbated by uneven technological infrastructure, which limits connectivity and access to digital resources. Despite these challenges, English as a Foreign Language (EFL) instruction is mandated as a national curricular requirement. This context highlights the central argument that combining simple digital tools with locally relevant content provides an effective and culturally responsive approach to enhancing English learning in settings limited by technology.

Blended learning, which combines face-to-face and digital instruction, provides flexibility and autonomy for learners. In under-resourced environments, however, its effectiveness relies less on advanced technology and more on adapting pedagogy to local realities. This study demonstrates that through the use of basic school facilities and culturally relevant video content, meaningful blended learning can be achieved in settings with limited access by prioritizing contextual adaptation over technological complexity. However, it is crucial to acknowledge that technology is not a neutral entity. It is imbued with social dimensions that affect power dynamics, access, and digital capital. By addressing these underlying questions, educators can gain a deeper understanding of how the 'low-tech' label may obscure issues of inequality and access, thereby influencing the sustainability of digital learning interventions.

Furthermore, while many studies have examined blended learning in urban schools or higher education contexts (Lim & Wang, 2016; Fitriani, Indrawati, & Wahyuni, 2020), few have explored

its implementation in rural and remote EFL settings. Research on low-tech or culturally contextualised blended learning in Indonesia remains limited. Studies by Dewi (2021) and Pratiwi and Wibowo (2020) show that WhatsApp- and Google Classroom–based blended models improved students' engagement and grammar mastery, but they were conducted in suburban or semi-urban contexts. The unique socio-cultural and infrastructural conditions of remote islands—where students often lack personal digital devices—require a distinct pedagogical approach. Thus, this study fills a research gap by investigating how a low-tech blended learning model, designed within the cultural framework of Kalwedo values, supports students' linguistic and affective development. This research is distinct in directly addressing remote island constraints and in embedding local cultural content, offering new insights applicable to similar under-resourced settings.

The research explores the application of online scaffolding stages in designing blended activities. The five stages—access and motivation, online socialisation, information exchange, knowledge construction, and development—are integrated into the learning tasks. For example, access and motivation are established by introducing students to the platform and cultural content that resonates with their background to spark interest. Online socialisation occurs through group work and discussions facilitated by Google Classroom, encouraging student interaction. Information exchange is enhanced by activities that require students to share their thoughts and reflections on video content. Knowledge construction is supported by exercises that connect grammar with cultural narratives, making learning relevant. Finally, development is seen as students independently utilising digital tools to complete tasks, reflecting improved digital literacy and content understanding.

Thus, these scaffolding strategies illustrate how educators can adopt this blended learning model effectively, structured to guide teachers through implementing activities step-by-step.

Furthermore, blended learning represents a pedagogical shift from traditional instruction to a more flexible learning environment that combines in-person and digital learning experiences (Graham, 2006). According to Horn and Staker (2014), blended learning allows students to control aspects of time, place, and pace while engaging in guided classroom activities. It facilitates differentiated instruction, enhances engagement through multimedia resources, and promotes learner autonomy. In Indonesian EFL contexts, blended learning has been found to improve students' participation and comprehension (Aji & Hardini, 2020; Syakur, Susminingsih, & Azzahra, 2020). However, challenges remain when applied in regions with limited internet access and minimal digital literacy.

In such cases, low-tech blended learning becomes a practical adaptation. Lim and Wang (2016) suggest that successful blended learning does not necessarily depend on sophisticated technology but on meaningful pedagogical integration. When supported by localised materials and cooperative activities, even basic digital platforms—such as Google Classroom or offline video playback—can provide rich, interactive learning experiences. This study adopts that principle to demonstrate how limited digital access can still support meaningful learning outcomes when pedagogy is carefully contextualised.

Therefore, digital pedagogy extends beyond the use of technology; it emphasises designing learning environments that foster critical thinking, creativity, and collaboration through digital means (Rasheed et al., 2020). Effective digital pedagogy considers socio-cultural context and learner diversity, especially in settings where students are still developing basic technological

fluency. In remote EFL classrooms, teachers play a crucial role as mediators who scaffold digital tasks and help learners navigate online tools responsibly (Hidayati & Saputra, 2021).

In the Tiakur City context, digital pedagogy was enacted through guided use of Google Classroom within the school's computer laboratory. Students collaborated in groups to watch learning videos, complete digital exercises, and discuss grammar points. This model aligns with Vygotsky's (1978) social constructivist theory, emphasising learning as a socially mediated process. Through structured digital interaction, students not only acquired linguistic knowledge but also developed fundamental digital literacy—a crucial competency for 21st-century learners (Setiawan & Widiati, 2021).

Moreover, cultural contextualization plays a critical role in language learning by linking linguistic forms to learners' identities and lived realities. As Suherdi (2015) notes, contextual English learning rooted in local culture enhances students' emotional engagement and sense of belonging. Similarly, Maruanaya and Tetelepta (2022) demonstrated that integrating Maluku's Kalwedo cultural values into English materials improved students' motivation and intercultural awareness. When learners recognise familiar cultural symbols and narratives in the target language, they perceive English not as a foreign entity but as a medium of expressing their own cultural identity. In this study, cultural contextualization was achieved through the use of locally produced videos depicting traditional activities and daily interactions reflecting Kalwedo values. This approach operationalises the principles of contextualised pedagogy (Freire, 1970) by situating learning within learners' socio-cultural environments. By combining digital pedagogy with local wisdom, this study positions blended learning not merely as a technological innovation but as a culturally responsive pedagogical model.

Despite the growing body of literature on blended learning in Indonesia, there remains a notable lack of empirical research addressing how this model can be implemented effectively in remote island schools using minimal technological resources. Previous studies (Dewi, 2021; Pratiwi & Wibowo, 2020) have explored blended learning using mobile-based applications but have not integrated cultural contextualization or examined students' perceptions in depth. Moreover, few studies have analysed the intersection between digital pedagogy, cultural learning, and rural educational equity. By directly tackling these challenges in a remote island setting with limited infrastructure and foregrounding the integration of Kalwedo culture, this study uniquely contributes empirical evidence on how localised blended learning can promote both linguistic competence and positive attitudes in marginalised contexts.

The cultural element is particularly significant in the context of Tiakur. Kalwedo, a local Maluku philosophy emphasising solidarity, respect, and community cooperation, provides an authentic cultural framework for contextualising English learning materials. Incorporating local cultural narratives into instructional videos allows students to connect language learning with their lived experiences, making grammar concepts more relatable and meaningful. This aligns with Suherdi's (2015) perspective that English for Local Contexts must reflect learners' socio-cultural realities to enhance engagement and motivation. By integrating the Kalwedo culture into digital materials, this research introduces an innovative approach that bridges global pedagogy and local identity.

Therefore, the present study seeks to address two primary research questions:

1. Which specific design elements within a low-tech blended learning model are most effective in improving students' English grammar achievement in SMP Negeri Tiakur?

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2. How do students perceive and respond to these design elements, particularly the contextualised blending of local culture and simple digital tools?

This study contributes to filling that gap by offering empirical evidence from a unique geographical and cultural setting—demonstrating that even within infrastructural limitations, meaningful English language learning can occur through a contextualised, low-tech blended learning model. The results aim to inform both theory and practice, promoting inclusive, culturally responsive, and context-aware EFL pedagogy for Indonesia's remote educational landscapes.

METHODOLOGY

Research Design

This study employed a Classroom Action Research (CAR) design, which is particularly suitable for improving teaching practices and understanding classroom phenomena through reflective cycles (Kemmis & McTaggart, 1988). The CAR framework used in this study consisted of one complete cycle, including four stages: planning, acting, observing, and reflecting. The research aimed to address a specific pedagogical issue, students' low mastery of English grammar, through a contextually adapted low-tech blended learning intervention.

The design of this study reflects the participatory nature of action research, wherein the teacher and researchers collaboratively designed, implemented, and evaluated the learning process. The intervention was implemented over one week and focused on the topic of the Simple Present Tense as part of the English grammar curriculum. The collaborating teacher, Mrs. Rina, played a pivotal role in tailoring the intervention to the students' needs, offering insights and adjustments based on her extensive experience with the classroom dynamics.

During the planning stage, the researchers designed a series of blended learning activities integrating face-to-face instruction, locally produced learning videos reflecting Kalwedo cultural contexts, and Google Classroom–based discussion tasks. The acting stage involved executing these plans in the classroom and the school computer laboratory. Mrs. Rina shared an anecdote about the initial skepticism she faced from students regarding the use of digital tools, which was overcome through incremental exposure and culturally relevant content. In the observing stage, researchers documented students' participation, engagement, and digital interaction using an observation checklist. Finally, the reflecting stage involved data analysis and collaborative reflection to evaluate the effectiveness of the intervention and identify potential improvements for future cycles. Throughout these stages, Mrs. Rina's insights were invaluable, as her reflections on student engagement and the iterative adjustments to instructional strategies reinforced the authenticity and adaptability of the action-research process.

This design choice was aligned with the goal of Classroom Action Research: to bridge theory and practice while improving educational quality in real classroom settings. The single-cycle format was chosen due to time limitations and the specific instructional focus, but it was conducted with rigorous data triangulation to ensure reliability and validity. However, the one-week duration of the intervention is a limitation that readers should consider when evaluating the scalability of the findings. While the results indicate significant short-term improvements, further research over extended periods would be necessary to confirm the sustainability and broader applicability of these outcomes.

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Setting and Participants

The research took place at SMP Negeri Tiakur, a junior high school located in Maluku Barat Daya, one of Indonesia's easternmost island regencies. The school represents a typical remote educational context with limited technological infrastructure and students who generally lack access to personal digital devices. The study involved 13 eighth-grade students (7 males and 6 females) aged between 13 and 14 years.

Preliminary observation revealed that more than half of the students did not own mobile phones or laptops at home, making school facilities the only available means for digital learning. Consequently, all digital activities were conducted in the school computer laboratory, which has basic computer units and limited internet connectivity.

Despite these challenges, students demonstrated curiosity and enthusiasm for technology-assisted learning. The socio-cultural context of the participants, grounded in Kalwedo values that emphasise togetherness and respect, was utilised as a pedagogical resource to promote collaboration during the learning process.

Instruments and Data Collection

Three main instruments were used to collect data: achievement tests, observation checklists, and student perception questionnaires. Each instrument addressed different dimensions of learning improvement to enable data triangulation.

Achievement Tests

The pre-test and post-test were designed to measure students' mastery of the Simple Present Tense. Both tests consisted of 20 multiple-choice and 5 short-answer items assessing recognition and production of grammatical structures in contextual sentences. Scores were converted into a 10-point scale to maintain consistency. The test results were analysed descriptively to calculate the mean, range, and improvement percentage.

Observation Checklist

An observation checklist was used to record students' behavioural indicators such as attention during video viewing, active participation in discussions, initiative in answering questions, and digital engagement through Google Classroom. The observers (two researchers) used a four-point rating scale ranging from "very low" to "very high" engagement. Qualitative field notes were also taken to capture spontaneous student reactions and interactions.

Student Perception Questionnaire

The questionnaire aimed to assess students' perceptions of blended learning in three key dimensions: ease of use, engagement, and usefulness. Each dimension included Likert-scale items ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The data were analysed in percentage form to determine the proportion of students expressing positive responses.

Data Analysis Procedures

Data were analysed both quantitatively and qualitatively. Quantitative data from the pre-test and post-test were processed using descriptive statistics (mean, minimum, maximum, gain score, and improvement percentage). Qualitative data from observation notes and open-ended questionnaire responses were analysed using content analysis, focusing on recurring themes such as participation, motivation, and digital adaptation.

A triangulation approach was adopted (Creswell, 2014), comparing outcomes from the three instruments to strengthen the validity of interpretations. Improvement in test scores was cross-

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checked with behavioural evidence of active participation and students' self-reported perceptions of engagement and usefulness.

RESULTS

Quantitative Results: Students' Grammar Achievement

The quantitative analysis revealed a substantial improvement in students' English grammar performance after the implementation of the blended learning model. Table 1 presents the pre-test and post-test scores of all participants.

Table 1. Students' Pre-test and Post-test Results (Cycle 1)

No	Name	Pre-test	Post-test	Development
1	M. P	6.50	8.00	+1.50
2	M. S.	4.50	6.50	+2.00
3	M. L. R.	3.50	6.00	+2.50
4	J. L. K	4.00	5.50	+1.50
5	D. W.	5.50	6.50	+1.00
6	K. J. R.	6.50	6.50	+0.00
7	R. S.	7.00	8.00	+1.00
8	A. Y. S.	3.00	5.00	+2.00
9	A. T.	2.50	5.00	+2.50
10	D. L	4.00	9.00	+5.00
11	M. B. T	3.00	5.00	+2.00
12	M. N. S	2.50	6.50	+4.00
13	R. T.	5.50	7.00	+1.50

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Mean	4.46	6.77	+2.31
Minimum	2.50	5.00	+2.50
Maximum	7.00	9.00	+2.00
The percentage of mean improvement	–	51.8%	–

The mean improvement of 2.31 points (51.8%) indicates that students significantly enhanced their understanding of the Simple Present Tense after participating in the blended learning activities. While some students, such as Kevin J., maintained similar scores, most participants demonstrated consistent progress, especially those who actively engaged during discussions and video sessions.

Qualitative Results: Observation and Engagement

Observation data revealed that students exhibited noticeable behavioural transformation during the learning process. Initially, many students were hesitant to interact with digital tools. However, by the third session, they demonstrated confidence in navigating Google Classroom and commenting on shared posts.

Students were particularly enthusiastic during video-based learning activities. The localised video content depicting familiar settings and cultural traditions captured their attention. Observers noted that students often related the scenes to their personal experiences, such as attending traditional ceremonies or community gatherings. This cultural resonance enhanced both cognitive and emotional engagement, consistent with Suherdi's (2015) argument that culturally grounded materials strengthen affective involvement.

In classroom discussions following video viewing, students began constructing sentences in the Simple Present Tense based on scenes they watched. For instance, when describing a local fisherman's routine shown in the video, a student wrote, "He goes fishing every morning and sells fish in the market." Such contextual sentence production demonstrated both grammatical understanding and cultural reflection.

Collaborative learning behaviour also increased. Students worked in small groups to summarise the video content before posting short reflections on Google Classroom. Although some students initially struggled with typing and navigating the interface, peer collaboration and teacher guidance facilitated smoother participation. The learning environment thus became socially supportive and culturally meaningful—a realisation of Vygotsky's (1978) social constructivism within digital pedagogy.

Students' Perception of Blended Learning

Data from the questionnaire provided further evidence of positive reception toward the intervention. Table 2 summarises students' overall responses categorised by three major dimensions.

Table 2. Students' Perception of the Blended Learning Model

Aspect	Description	% of "Agree" or "Strongly Agree"

Ease of Use	Video materials and Google Classroom were easy to access and use.	84.6%
Engagement	Local culture–based videos increased motivation and interest.	89.2%
Usefulness	The blended model helped students understand grammar better.	92.3%

A large majority of students (over 80% in all aspects) expressed positive attitudes toward the low-tech blended learning model. Students described the experience as enjoyable, novel, and motivating. Qualitative feedback indicated that the videos made English learning more engaging and accessible, and that collaborative computer-based activities were perceived as exciting.

This sense of collective learning underscores the cultural principle of Kalwedo, which emphasizes cooperation and shared responsibility. Students' engagement, therefore, was not only technological but also socio-cultural in nature. To ensure that this motivational surge persists beyond the intervention, future research could implement longitudinal studies that track student engagement over extended periods. For example, follow-up assessments of English learning motivation and socio-cultural engagement could be conducted one year after the intervention. Such measures would provide insight into the long-term impact of Kalwedo-centered learning, guiding educational strategies and reinforcing the implementation of culturally contextualized pedagogical methods. The triangulation process revealed strong alignment between quantitative improvement, observed engagement, and students' self-reported perceptions. The 51.8% increase in test scores corresponded with higher behavioral indicators of participation and the overwhelmingly positive feedback from the questionnaire.

The triangulation process revealed strong alignment between quantitative improvement, observed engagement, and students' self-reported perceptions. The 51.8% increase in test scores corresponded with higher behavioural indicators of participation and the overwhelmingly positive feedback from the questionnaire.

Students who showed the highest post-test gains were also those observed as most active during class and most responsive in digital activities. Conversely, the one student with no score improvement (Kevin J.) was noted to be less participative during video discussions due to limited confidence in using English. This cross-validation indicates that learning gains were closely linked to engagement intensity and cultural relevance of materials.

Findings from this single-cycle classroom action research indicate that contextualised low-tech blended learning can effectively enhance both cognitive and affective dimensions of EFL learning in remote island contexts. The integration of Kalwedo-based cultural content improved grammatical understanding and also fostered motivation, digital adaptation, and collaborative learning.

These results support the central tenet of digital pedagogy: meaningful technology integration depends on cultural responsiveness and pedagogical design rather than the sophistication of technological tools. However, it is important to acknowledge that even 'low-tech' solutions can have hidden costs, such as dependencies on available digital infrastructure and the need for regular maintenance to ensure functionality. These challenges could potentially lead to technical issues that might disrupt the learning process, especially in resource-limited environments like SMP Negeri Tiakur. By addressing these potential difficulties, the argument becomes more balanced,

recognizing both the promise and the challenges of integrating digital tools in educational contexts. Still, the case of SMP Negeri Tiakur demonstrates that creative and culturally grounded instruction can produce significant improvements in learning outcomes.

DISCUSSION

The results of this study demonstrate that the implementation of contextualised low-tech blended learning effectively enhanced students' grammar achievement, engagement, and digital literacy in a remote island school. The findings align with and expand upon existing literature on blended learning and digital pedagogy, while adding a unique cultural dimension rooted in the Kalwedo values of Maluku Barat Daya. This discussion interprets the results across three key domains: cognitive improvement, affective and motivational engagement, and digital-cultural adaptation, before addressing the broader theoretical and practical implications.

Cognitive Development through Contextualised Learning

The substantial improvement in students' mean test scores—from 4.46 to 6.77, representing a 51.8% increase—provides strong evidence that low-tech blended learning can strengthen English grammar mastery even in technology-limited environments. This improvement is consistent with previous research (Lim & Wang, 2016; Syakur et al., 2020), which asserts that integrating online and face-to-face learning can optimise exposure, practice, and feedback opportunities.

In this study, cognitive gains were achieved through repetitive, multimodal exposure to linguistic input. The video-based component, combined with discussion and digital exercises, created a balanced learning cycle where students encountered grammar both visually and contextually. According to Graham (2006), such multimodal design encourages deeper cognitive processing and facilitates language retention. Students were not merely memorising grammatical rules but using them in meaningful communication — for instance, describing scenes from the videos using the Simple Present Tense. This suggests that the Kalwedo-based videos served as authentic input, bridging abstract grammatical structures with lived cultural experiences.

Moreover, this finding supports the constructivist perspective (Vygotsky, 1978), which posits that learning occurs when new information is linked to existing knowledge and experiences. By embedding grammar instruction within familiar cultural contexts, the blended model enabled students to construct meaning collaboratively, thereby reinforcing long-term understanding.

Affective and Motivational Engagement

Beyond cognitive outcomes, the study also revealed substantial affective and motivational benefits. Observation data and questionnaire results showed that students were highly enthusiastic and emotionally invested in the learning process. More than 89% agreed that locally culture-based videos increased their motivation to learn English, while 92% found the blended model helpful for understanding grammar. These findings corroborate Boelens et al. (2017), who emphasise that learner engagement in blended environments depends on contextual relevance and interactive learning design.

Students' motivation was not only sparked by novelty but also by cultural familiarity and personal relevance. The Kalwedo philosophy—rooted in mutual respect and community cooperation—resonated deeply with students, providing emotional connection and pride in their cultural identity. As Suherdi (2015) argued, contextual English teaching that integrates local culture encourages learners to view the foreign language as a medium for expressing their identity rather than as an external or abstract system.

This phenomenon also reflects Deci and Ryan's (1985) Self-Determination Theory, where intrinsic motivation arises when learners experience autonomy, competence, and relatedness. Through collaborative group activities, digital reflection, and shared cultural narratives, students experienced all three components, resulting in higher engagement and persistence in learning tasks. Thus, the use of culturally grounded materials not only enhanced language comprehension but also fostered a sense of belonging and emotional investment.

Digital Literacy and Social Collaboration

An equally important finding of this research concerns the development of students' digital literacy and collaborative skills. Despite limited personal access to technology, students successfully adapted to Google Classroom through guided practice and peer collaboration. Initially hesitant, they gradually became confident in navigating the platform, posting reflections, and responding to teacher prompts.

This progress affirms Rasheed et al. (2020), who argue that digital pedagogy is not primarily about technology use but about fostering purposeful digital interaction that enhances learning outcomes. The school's computer laboratory served as a shared digital environment where learners supported one another—a manifestation of Vygotsky's (1978) Zone of Proximal Development, where social interaction mediates skill acquisition.

Additionally, the findings resonate with Setiawan and Widiati (2021), who emphasise that developing digital competence among students in remote Indonesia requires school-based collective learning experiences rather than individualised, device-dependent models. The Tiakur case illustrates that low-tech digital pedagogy—anchored in cooperation and guided facilitation—can effectively build foundational digital literacy while supporting linguistic learning goals.

Integration of Blended Learning and Cultural Pedagogy

One of the most significant contributions of this study lies in demonstrating how blended learning and cultural pedagogy can be integrated to address educational inequity in remote areas. The integration of Kalwedo cultural values transformed a potentially generic blended learning model into a culturally resonant, inclusive pedagogical framework. Students were not passive recipients of digital instruction but active participants who related English grammar to familiar cultural contexts.

This synthesis echoes Freire's (1970) Pedagogy of the Oppressed, which advocates situating education within learners' sociocultural realities to empower them as co-creators of knowledge. Similarly, Maruanaya and Tetelepta (2022) highlighted that Kalwedo-based English materials strengthen students' cultural awareness and motivation. The present findings expand upon these insights by illustrating how digital tools, when employed thoughtfully, can amplify cultural engagement rather than diminish it.

Therefore, this study contributes to the evolving discourse on contextualised blended learning by showing that even low-resource environments can support high-quality instruction if pedagogy honours learners' cultural capital.

Theoretical and Practical Implications

The findings of this study yield several theoretical, pedagogical, and contextual implications relevant to both EFL education and blended learning scholarship.

From a theoretical perspective, the results reinforce and extend the conceptual framework of Digital Pedagogy (Rasheed et al., 2020) and Blended Learning (Graham, 2006) by demonstrating that technological sophistication is not a prerequisite for effective learning. Instead, pedagogical

contextualization—the meaningful alignment of content, culture, and community—plays a decisive role in determining learning success. The study also enriches Vygotsky's (1978) Social Constructivist Theory by providing empirical evidence that collaborative, digitally mediated interactions within a culturally familiar setting enhance both language and digital competencies. To illustrate the practical relevance of these findings, consider a short vignette of a teacher in another remote island, Tanimbar, who piloted this model. By integrating local cultural stories into English lessons and using basic video playback tools, students showed significant improvements in participation and grammar tests. Such practical examples can inspire replication and further adoption of the model in similar educational contexts.

From a pedagogical standpoint, this study suggests that teachers in remote or resource-limited schools can implement blended learning effectively using low-tech, culturally grounded approaches. Rather than relying on continuous internet access or individual devices, schools can maximise shared digital facilities such as computer laboratories. Teachers can design learning activities that integrate locally relevant media, cooperative learning, and simple online platforms like Google Classroom. Such strategies democratize access to digital learning and reduce dependency on expensive technology.

The results also highlight the importance of teacher facilitation as the bridge between technology and student learning. In low-tech environments, the teacher's role extends beyond content delivery to include digital guidance, cultural mediation, and motivational support. By facilitating social interaction and reflection, teachers foster not only linguistic competence but also emotional and digital resilience among students.

From a contextual and policy perspective, the study advocates for inclusive digital education strategies tailored to Indonesia's diverse geographical conditions. Government and institutional initiatives should prioritize equity over advancement, ensuring that rural and island schools are equipped with basic digital infrastructure and training programs for teachers. This aligns with the spirit of Indonesia's Merdeka Belajar policy, which encourages contextual and innovative pedagogy across regions. To bridge the identified infrastructure gaps, district leaders could consider implementing a Mobile Digital Hub initiative. This plan would deploy mobile units equipped with digital learning tools and resources to remote areas, thereby increasing access to education and training for students and teachers in those locations. Ending with a policy challenge can convert findings into momentum, prompting stakeholders to take concrete actions in meeting these infrastructural and educational needs.

Recommendations for Further Research

While this study offers valuable insights, it was limited to a single cycle of action research with a small sample size of 13 students. Future studies could extend this model across multiple cycles to examine sustained learning growth and behavioural change over time. Longitudinal research may reveal the long-term impact of contextualised blended learning on self-regulated learning, digital literacy, and language proficiency in similar low-resource contexts.

Further comparative studies are also recommended to evaluate the effectiveness of different low-tech platforms (e.g., WhatsApp, Telegram, Google Classroom) in supporting collaborative EFL learning in rural or island settings. Additionally, mixed-methods research could explore how teachers' digital competence and cultural pedagogical awareness influence students' outcomes in blended learning environments. Furthermore, there is potential for future research to delve into collaborative content creation, where students actively contribute to the development of Kalwedo

modules. This participatory curriculum design embodies Freirean co-authorship and could lead to innovative, culturally relevant educational materials. Such involvement might inspire further inquiry into how partnership-driven approaches can enhance both teaching and learning experiences.

Finally, subsequent studies could focus on developing a standardised Kalwedo-based digital module that can be adapted across Maluku's schools. Such an initiative would contribute to both curriculum innovation and the preservation of local cultural identity through English education.

CONCLUSION

This study concludes that contextualised low-tech blended learning, which integrates simple digital tools, culturally relevant materials, and collaborative pedagogy, can significantly improve English learning outcomes, motivation, and digital literacy in remote island schools. Despite infrastructural limitations, students at SMP Negeri Tiakur achieved meaningful academic and affective gains, demonstrating that technology-enhanced learning can succeed in challenging contexts when guided by inclusive and context-aware design.

Theoretically, this study affirms that effective digital pedagogy relies on the contextual and meaningful use of technology rather than its complexity. Pedagogically, it demonstrates that integrating local culture with English instruction fosters learner motivation and participation. Practically, it provides a sustainable model for educators in similar rural or island contexts, showing that educational equity can be advanced through innovation grounded in local wisdom.

Ultimately, this research underscores that educational innovation does not require technological sophistication but rather significance and relevance. When instruction aligns with students' realities, cultural identities, and technological capacities, learning becomes both possible and empowering. The experience at SMP Negeri Tiakur provides evidence that culturally integrated, low-tech blended learning can support inclusive and meaningful English language education in Indonesia's remote regions. To illustrate this empowerment, consider a student reflecting on their journey: "Learning English through our local stories made me feel proud. I can now share my culture in English, and that gives me confidence to connect with others beyond our island." This reflection highlights the newfound agency and inspiration gained through this learning approach.

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