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The Effect of IT-Based Applications on Students' Speaking Skills in English Language Learning in Rural South East Sulawesi

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ABSTRACT

The integration of Information Technology (IT)-based applications in English language teaching has gained significant attention as a means to enhance students' speaking skills, particularly in EFL contexts within rural areas. This study aimed to examine the effect of IT-based applications on the speaking skills of junior high school students in Rural Southeast Sulawesi. A quasi-experimental design was employed involving 82 students from grade VIII (44 students across two classes) and grade IX (38 students across two classes). The experimental group utilized various IT-based applications for interactive speaking practice, while the control group received conventional teacher-cantered instruction. Data were collected through pre-test and post-test speaking assessments and analysed using paired sample t-tests and independent sample t-tests. The findings revealed a statistically significant improvement in the speaking skills of students in the experimental group compared to the control group ($p < 0.05$), particularly in fluency, pronunciation, vocabulary, and grammatical accuracy. These results indicate that IT-based applications can effectively support the development of English-speaking proficiency among students in rural Indonesian schools. The study recommends the integration of technology-enhanced learning tools in the English curriculum to foster more engaging and effective language learning experiences.

Keywords: IT-Based Applications; Speaking Skills; English Language Learning

INTRODUCTION

Speaking skill is considered one of the most essential components in English language learning, particularly in English as a Foreign Language (EFL) context. It

enables learners to communicate ideas, express opinions, and interact effectively in real-life situations. Without adequate speaking proficiency, learners often face difficulties in achieving communicative competence despite possessing reasonable knowledge of grammar and vocabulary. In today's globalized world, strong English-speaking skills are increasingly demanded for academic success, career opportunities, and intercultural communication.

The development of speaking skills requires continuous practice, immediate feedback, and authentic language exposure. However, traditional teacher-centred methods frequently limit students' opportunities to practice speaking actively. Many EFL learners remain passive in the classroom due to anxiety, fear of making mistakes, and lack of confidence. These issues highlight the need for innovative pedagogical approaches that can create more interactive and learner-centred environments to foster oral proficiency.

In recent years, the integration of Information Technology (IT)-based applications has emerged as a promising solution to enhance speaking skills. Mobile applications, online platforms, speech recognition tools, and multimedia resources provide interactive practice, real-time feedback, and increased motivation for learners. Studies have shown that technology-supported instruction significantly improves fluency, pronunciation, vocabulary use, and grammatical accuracy among EFL students.

Various IT-based tools such as speech-to-text applications, video conferencing platforms, and gamified language apps allow students to practice speaking beyond the classroom constraints. These tools offer personalized learning experiences and reduce speaking anxiety by providing a low-pressure environment for repetition and self-correction. Empirical evidence indicates that students exposed to technology-based methods demonstrate greater engagement and better speaking performance compared to those receiving conventional instruction.

Despite the potential benefits of IT-based applications, their implementation faces unique challenges in rural Indonesian schools. located in a remote area, exemplifies typical rural educational settings characterized by limited infrastructure, unstable internet connectivity, and restricted access to digital devices. Students in such contexts often have minimal exposure to English outside the classroom, resulting in low speaking proficiency.

English teachers in rural junior high schools frequently encounter additional obstacles, including inadequate teaching resources, large class sizes, and students' low motivation due to the perception that English is irrelevant to daily life. These conditions contribute to persistent gaps in speaking skills between urban and rural students. Consequently, innovative yet context-appropriate technology integration becomes crucial to bridge this disparity.

Although numerous studies have explored the use of technology in EFL speaking instruction, research specifically examining its effectiveness in small rural junior high schools in Indonesia remains limited. Most existing studies focus on urban or university levels, leaving a gap in understanding how IT-based applications can be adapted to resource-constrained environments such as rural southeast sulawesi. This study addresses that gap by investigating the effect of IT-based applications on the speaking skills of eighth and ninth-grade students.

The present study aims to examine the effectiveness of IT-based applications in improving students' English-speaking skills in Rural Southeast Sulawesi, involving 82 students from grade VIII (44 students in two classes) and grade IX (38 students in two classes). It is hoped that the findings will provide practical insights for English teachers in rural areas and contribute to the broader discourse on technology-enhanced language learning in Indonesian junior high schools.

LITERATURE REVIEW

Speaking skill constitutes a fundamental component of communicative competence in English as a Foreign Language (EFL) learning. It enables learners to convey ideas, negotiate meaning, and engage in real-life interactions. In EFL contexts, where English is rarely used outside the classroom, developing oral proficiency remains challenging due to limited exposure and opportunities for authentic practice. Effective speaking instruction must address not only linguistic elements such as pronunciation, vocabulary, grammar, and fluency but also affective factors including anxiety and motivation.

In rural Indonesian junior high schools, students often encounter significant barriers to developing English speaking skills. Limited infrastructure, unstable internet access, large class sizes, and minimal exposure to English in daily life contribute to low speaking proficiency. Teachers frequently rely on traditional teacher-centred methods, which restrict active speaking practice and exacerbate students' anxiety and lack of confidence. These conditions highlight the persistent urban-rural disparity in English language outcomes.

The integration of Information Technology (IT)-based applications has emerged as a promising pedagogical innovation to overcome these challenges. Mobile-assisted language learning (MALL), speech recognition tools, gamified apps, and AI-powered platforms provide interactive, personalized, and low-anxiety environments for speaking practice. Such tools offer immediate feedback, repetition opportunities, and authentic language input, thereby increasing learner engagement and autonomy beyond classroom constraints.

Numerous empirical studies conducted since 2020 have demonstrated the positive effects of IT-based applications on EFL speaking skills. Sosas (2021) found that technology tools such as video conferencing and social media interactions improved fluency, accuracy, and confidence among students by creating real

communicative situations and reducing speaking anxiety. Similarly, Moayeri and Khodareza (2020) reported significant gains in speaking accuracy through mobile-assisted applications, attributing the improvement to supplementary informal practice that motivates learners.

Recent research further supports the efficacy of specific digital tools. Napitupulu (2025) conducted a quasi-experimental study in rural Indonesian secondary schools and revealed that technology-based teaching methods led to substantially higher speaking scores (Cohen's d = 2.10) compared to conventional instruction, with notable improvements in confidence and linguistic accuracy. Hasan (2022) showed that WhatsApp-based mobile programs enhanced tertiary EFL learners' speaking performance, while AI-powered tools have been shown to boost vocabulary, pronunciation, and overall oral proficiency.

In the Indonesian context, several studies at the secondary level align with these findings. Research on applications such as ELSA Speak and other speech-assisted tools consistently reported improvements in pronunciation, fluency, and student motivation among junior high school learners. These studies emphasize that IT-based applications are particularly beneficial in resource-limited settings when integrated thoughtfully, although challenges such as internet connectivity and teacher readiness persist.

Theoretically, this study is grounded in Krashen's Affective Filter Hypothesis, which posits that low anxiety and high motivation facilitate language acquisition, and Constructivist Learning Theory, which highlights the role of active, interactive experiences in knowledge construction. IT-based applications can lower the affective filter by providing private practice spaces and immediate feedback while promoting constructivist engagement through authentic tasks. Despite growing evidence, research specifically examining the effect of IT-based applications on speaking skills in small rural junior high schools in Indonesia, such as rural southeast sulawesi remains limited. Most prior studies focus on urban settings or higher education levels. This study addresses that gap by investigating the effectiveness of IT-based applications among 82 eighth and ninth-grade students.

METHOD

Design and Sample

This study employed a quasi-experimental design with a pretest–post-test non-equivalent control group. The design was selected because random assignment was not feasible due to the intact class structure in the school. Two groups were involved: an experimental group that received instruction integrated with IT-based applications and a control group that followed conventional teacher-centered speaking instruction. Both groups completed pretest and post-test assessments to measure changes in English speaking skills.

The research was conducted in a rural junior high school in Southeast Sulawesi, Indonesia, characterized by limited infrastructure and resources. The participants consisted of 82 students from grades VIII and IX in the 2025/2026 academic year. Grade VIII included 44 students across two classes, while grade IX included 38 students across two classes. One class from each grade level was assigned to the experimental group (n = 41), and the other class to the control group (n = 41). Participants were selected using purposive sampling based on class availability and comparable initial English proficiency levels as indicated by school records.

Instruments and Procedures

Speaking skills were assessed using a validated rubric adapted from Brown (2004) and Hughes (2003), covering pronunciation, fluency, vocabulary, and grammatical accuracy, with a total score of 100. Both the pretest and post-test consisted of similar individual speaking tasks, which were audio-recorded and evaluated by two independent raters. Inter-rater reliability was established through prior training, achieving a Cronbach's Alpha of 0.87. In addition, a semi-structured questionnaire was administered to the experimental group at the end of the treatment to gather students' perceptions of the use of IT-based applications in speaking instruction.

Data collection was conducted in three stages. First, a pretest was administered to both groups to determine baseline speaking ability. Second, the experimental group received IT-integrated speaking instruction for eight weeks (two sessions per week, 40 minutes per session), involving activities such as pronunciation practice, role-play simulations, recording, self-assessment, and real-time feedback. The control group, meanwhile, received traditional instruction using textbooks, teacher explanation, and repetition without technological support. Both groups followed the same speaking topics aligned with the Kurikulum Merdeka. Third, a post-test with comparable tasks was administered after the treatment. All speaking performances were recorded for scoring purposes. Ethical considerations were addressed by obtaining permission from the school principal and informed consent from students and parents.

Data Analysis

Quantitative data from the pretest and post-test were analyzed using descriptive statistics, including mean and standard deviation, to summarize students' performance. Inferential statistics were also applied: paired sample t-tests were used to examine differences within each group between pretest and post-test scores, while independent sample t-tests were conducted to compare the gains between the experimental and control groups. The level of significance was set at $p < 0.05$, and all analyses were performed using SPSS version 26. Qualitative data obtained from the questionnaire were analyzed thematically to provide supporting insights into students' perceptions of the IT-based instructional approach.

RESULT AND DISCUSSION

The pretest results indicated that both the experimental and control groups had comparable initial speaking skills. The experimental group (n=41) obtained a mean score of 48.76 (SD = 6.82), while the control group (n=41) achieved a mean score of 47.92 (SD = 7.15). An independent samples t-test confirmed no statistically significant difference between the groups at the pretest stage ($t(80) = 0.58$, $p = 0.564$), suggesting homogeneity in starting proficiency levels. After the eight-week intervention, the post-test revealed a notable improvement in the experimental group. The mean speaking score increased to 76.34 (SD = 5.91), representing a substantial gain of 27.58 points. In contrast, the control group showed only a modest improvement, with a post-test mean of 53.17 (SD = 6.48) and a gain of 5.25 points.

A paired samples t-test within the experimental group demonstrated a statistically significant difference between pretest and post-test scores ($t(40) = -18.76$, $p < 0.001$), indicating that the integration of IT-based applications effectively enhanced students' speaking performance. The control group also showed a significant but smaller improvement ($t(40) = -4.12$, $p = 0.002$). An independent samples t-test on the post-test scores confirmed a statistically significant difference between the experimental and control groups ($t(80) = 17.45$, $p < 0.001$, Cohen's $d = 3.72$), with a large effect size. This suggests that the use of IT-based applications had a strong positive impact compared to conventional instruction. Analysis of speaking components showed the greatest improvements in the experimental group across all aspects. Pronunciation increased from a pretest mean of 11.45 to 19.82, fluency from 12.30 to 18.76, vocabulary from 12.85 to 19.12, and grammatical accuracy from 12.16 to 18.64. The control group exhibited smaller gains in each component.

The questionnaire results from the experimental group further supported the quantitative findings. A majority of students (82.9%) reported increased confidence in speaking English, while 78.0% agreed that the applications provided helpful immediate feedback. Additionally, 85.4% expressed positive attitudes toward continued use of IT-based tools in English lessons. No major technical obstacles were reported during the intervention, although occasional internet instability in the rural setting required offline practice modes. Overall, the data indicate consistent and meaningful progress attributable to the technology-enhanced approach. The results clearly demonstrate that IT-based applications significantly improved the English-speaking skills of eighth and ninth-grade students in Rural Southeast Sulawesi compared to traditional methods.

The substantial improvement in the experimental group's speaking scores aligns with previous studies on technology integration in EFL contexts. The large gain of 27.58 points and high effect size confirm that interactive IT-based applications facilitate more frequent and meaningful speaking practice than conventional classroom activities. The significant difference between groups ($p < 0.001$) supports the effectiveness of IT tools in reducing speaking anxiety and increasing learner autonomy. Students could record, repeat, and self-correct privately, which is

particularly beneficial in rural settings where fear of public mistakes is common. Improvements across all four speaking components (pronunciation, fluency, vocabulary, and grammar) suggest that the applications provided comprehensive support. Immediate feedback features likely played a key role in helping students notice and address linguistic errors more effectively than teacher feedback alone.

These findings are consistent with research on mobile-assisted language learning (MALL) in Indonesian junior high schools, where technology tools have been shown to boost oral proficiency in resource-limited environments. The modest gains in the control group reflect the limitations of traditional methods that offer limited individual practice opportunities. The positive student perceptions (over 78% agreement on confidence and feedback) indicate high motivation and engagement. This affective benefit complements the linguistic gains and supports the idea that technology can make English learning more enjoyable and less intimidating for rural students.

However, the study also highlights contextual challenges. Occasional internet issues underscore the need for applications with robust offline capabilities when implementing technology in remote areas like rural southeast sulawesi. Future interventions should combine online and offline features for better accessibility.
The results contribute to the limited body of research on technology-enhanced speaking instruction at the junior high level in rural Indonesia. Unlike most prior studies focused on urban or university settings, this research demonstrates that carefully selected IT-based applications can be effectively adapted even with constrained resources. The integration of IT-based applications offers a practical and effective solution for improving English speaking skills in rural junior high schools. English teachers are encouraged to incorporate such tools, while schools and policymakers should support infrastructure development to maximize the benefits of technology in language education.

CONCLUSION

This study has demonstrated that the integration of IT-based applications significantly improves English speaking skills among junior high school students in a rural setting. The quasi-experimental results revealed a substantial gain in speaking performance for the experimental group compared to the control group, with notable enhancements in pronunciation, fluency, vocabulary, and grammatical accuracy. These findings confirm that technology-enhanced learning provides more interactive practice opportunities and immediate feedback, which are often limited in traditional classroom instruction in Rural Southeast Sulawesi.

The positive outcomes highlight the potential of IT-based applications to address common challenges in rural EFL contexts, such as low motivation, speaking anxiety, and limited language exposure. By fostering learner autonomy and creating low-pressure environments for practice, these tools contribute to more engaging

and effective language learning experiences. The study supports the broader discourse on technology integration in Indonesian education, particularly under the Kurikulum Merdeka framework, where student-centred approaches are emphasized.

Future research should explore the long-term effects of IT-based applications on speaking retention and investigate optimal implementation strategies in areas with infrastructure constraints. English teachers and school policymakers are recommended to provide necessary training and technical support to maximize the benefits of such tools. Ultimately, the thoughtful integration of IT-based applications can help bridge the urban-rural gap in English proficiency and equip students with essential 21st-century communication skills.

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