

MOBILE-ASSISTED LISTENING LEARNING: THE EFFECT OF THE LEARN ENGLISH LISTENING APPLICATION ON INDONESIAN EFL STUDENTS

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ABSTRACT

Listening is often considered one of the most challenging skills for students in English as a Foreign Language (EFL) classrooms due to limited exposure to authentic spoken English and insufficient listening practice. This study aimed to investigate the effectiveness of the Learn English Listening application in improving the listening skills of tenth-grade students at SMAN 2 Palopo. A quantitative approach with a pre-experimental one-group pre-test and post-test design was employed. The participants consisted of 20 students selected through purposive sampling. Data were collected via listening tests administered before and after the treatment and analyzed using descriptive statistics and a paired-samples t-test in IBM SPSS Statistics version 30. The results showed a significant improvement in students' listening skills, with the mean score increasing from 65.90 in the pre-test to 77.10 in the post-test. The paired-samples t-test yielded a $p < .001$ and a large effect size (Cohen's $d = 1.586$), indicating that the application produced a practically and statistically meaningful improvement in listening comprehension. These findings provide empirical evidence supporting the integration of mobile listening applications as effective digital learning tools in Indonesian EFL classrooms, particularly in contexts with limited authentic exposure to English.

Keywords: Digital Learning Media, Learn English Listening, Listening Skills, Mobile-Assisted Language Learning

INTRODUCTION

Listening is a fundamental skill in English language learning, serving as the primary channel through which learners receive comprehensible input. Krashen's (1985) The input Hypothesis captures this idea by positing that language acquisition occurs when learners are exposed to input that is slightly beyond their current competence level, a condition most naturally fulfilled through listening to authentic spoken discourse. Building on this, Rost (2012) and Goh & Vandergrift (2021) emphasize that effective listening demands active cognitive interpretation rather than merely passive reception of sound. In daily communicative contexts, listening accounts for approximately 40-50% of total language use, making it the most frequently used of the four language skills (Gilakjani & Sabouri, 2016; Goh & Vandergrift, 2012).

To understand how listening comprehension works, it is helpful to consider two complementary cognitive mechanisms: bottom-up processing and top-down processing. Bottom-up processing refers to the decoding of incoming speech from the smallest units, phonemes, syllables, words, and phrases, into meaningful language (Field, 2009; Goh & Vandergrift, 2012). Top-down processing, by contrast, involves using prior knowledge, contextual clues, and discourse schema to make sense of spoken language at a higher level (Binti Azhari et al., 2024; Goh & Vandergrift, 2021). Skilled listeners integrate both processes simultaneously; however, EFL learners at lower proficiency levels tend to over-rely on laborious bottom-up decoding, which exhausts working memory and impairs holistic comprehension (Field, 2009; Manihuruk & Sidabutar, 2022). Effective listening instruction must therefore target both processes in a balanced and integrated manner.

Against this theoretical backdrop, the challenges facing EFL listeners become clearer. Gilakjani & Sabouri (2016) identified the most commonly reported obstacles as unfamiliar accents, rapid speech rates, limited vocabulary, the inability to control input pace, and insufficient exposure to authentic spoken English. Graham (2017) added that EFL learners often lack the metacognitive awareness to monitor their own comprehension and apply repair strategies when understanding breaks down, for instance, by using contextual clues to infer the meaning of an unrecognized word. Shaojie et al. (2024) further found that metacognitive listening strategies significantly predicted listening performance within MALL environments, with learning style and self-efficacy acting as important mediating variables.

In the Indonesian EFL context, these challenges are further compounded by sociolinguistic realities that distinguish it from many other learning environments. Unlike learners in contexts where English is a second language, such as Singapore or India, Indonesian students rarely encounter English in authentic daily communication outside the classroom. This means that for most Indonesian students, the 45-minute weekly English class represents their primary, and often only, exposure to spoken English (Ernita et al., 2022; Ramadhianti & Somba, 2022). At SMAN 2 Palopo specifically, preliminary observations and interviews with the English teacher confirmed that many tenth-grade students consistently scored below the minimum competency criterion in listening assessments, particularly in comprehending short conversational exchanges at natural speech speed. This local finding aligns with broader evidence from Hadist & Dewanti (2022), who documented widespread listening comprehension difficulties among Indonesian EFL students at both senior high school and university levels.

Given these persistent challenges, educational technology and MALL in particular have emerged as a promising solution. Mobile-Assisted Language Learning (MALL) is a specialized branch of Computer-Assisted Language Learning (CALL) that leverages the affordances of smartphones, tablets, and other portable devices to facilitate language learning beyond the physical and temporal boundaries of the classroom (Kukulska-Hulme, 2020; Stockwell, 2016). Unlike traditional listening practice, which requires students to be in a classroom with a speaker or tape player, MALL allows students to practice listening anytime, anywhere, while commuting, waiting for a bus, or relaxing at home. As a theoretical framework, MALL rests on several foundational premises. First, it foregrounds learner autonomy, the capacity

of learners to direct their own learning by regulating the pace, sequence, and content of their engagement with language input (Jeong, 2022; Sato et al., 2020). Second, MALL capitalizes on the ubiquity of mobile devices to increase total target-language exposure well beyond classroom hours (Li et al., 2023; Zhang & Pérez-Paredes, 2021). Third, as Kukulska-Hulme & Viberg (2018) demonstrated, MALL affords flexible, socially situated, and collaborative learning opportunities that reduce language anxiety and increase motivation, two factors that directly influence listening comprehension outcomes. Fourth, MALL tools reduce cognitive load, the mental effort required to process new information, by allowing learners to control input complexity through features such as adjustable playback speed, transcripts, and vocabulary glosses (Li, 2023; Shaojie et al., 2024).

A substantial body of empirical research confirms the effectiveness of MALL in developing listening skills across EFL contexts. Li (2023) in a meta-analysis of experimental and quasi-experimental MALL listening studies, researchers found a consistently positive overall effect size, with MALL interventions outperforming traditional methods across diverse settings. Hafour (2025) demonstrated that all modalities of mobile-assisted listening—audio-only, text-audio bimodal, and full multimodal—significantly improved EFL learners' listening comprehension, with different modalities supporting different aspects of listening recognition. Al-shamsi & Al-mekhlafi (2020) found positive effects on both listening scores and learner attitudes among adult EFL learners in Oman, while Alzieni (2020) reported significant improvements in listening at Dubai Men's College. Each & Suppasetseree (2021) showed that mobile-blended cooperative learning significantly enhanced EFL university students' listening comprehension in Cambodia.

In the Indonesian context specifically, Naimah et al. (2024) and Sahraini & Syamsudarni (2018) found that digital audio and multimedia tools produced meaningful listening gains among EFL students. At the application-specific level, Soleha (2022) found that students using the ELLLO application outperformed those relying on traditional instruction, while Wahyuni (2021) reported that the Miracle English application improved both listening scores and learner motivation among Indonesian senior high school students. In a broader synthesis, Peng et al. (2024) demonstrated that incorporating metacognitive strategy instruction within a MALL context further amplified listening gains, suggesting that the combination of mobile tools and guided reflection is more powerful than either alone.

Despite this expanding literature, a significant research gap remains. While many MALL listening studies exist, very few have specifically investigated the Learn English Listening application, a freely accessible tool featuring adjustable audio playback speed, downloadable audio files, written transcripts, and integrated vocabulary support. Unlike many commercially developed applications, the Learn English Listening application is freely available, making it particularly viable for Indonesian public-school contexts where budget constraints often limit access to proprietary learning platforms. However, no published study has yet documented how this application specifically addresses listening difficulties among Indonesian senior high school students. This study, therefore, aims to fill this gap by investigating the effectiveness of the Learn English Listening application in improving listening comprehension among tenth-grade students at SMAN 2 Palopo. The novelty of this research lies in providing context-specific evidence of how a free mobile application can

produce large, educationally meaningful improvements in listening skills within an input-restricted environment.

METHODS

Design

This study employed a quantitative approach using a pre-experimental one-group pre-test and post-test design. In essence, this means that one group of students was tested before the intervention began, received the treatment, and was tested again afterward, with the difference in scores serving as the primary indicator of the application's effect (Creswell & Creswell, 2022). This design was selected because the study took place within a single intact classroom where random assignment to a control group was neither logistically feasible nor ethically permissible, as withholding the intervention from some students would have created an unequal learning opportunity. While the absence of a control group limits definitive causal attribution, meaning we cannot completely rule out alternative explanations for the score gains, the design is appropriate and widely used for exploratory investigations of instructional interventions in naturalistic classroom contexts, and is methodologically consistent with comparable MALL listening studies in similar settings (Soleha, 2022; Wahyuni, 2021).

Population and Sample

The study population comprised all tenth-grade students at SMAN 2 Palopo during the 2024/2025 academic year, totaling 250 students across seven classes. From this population, a sample of 20 students from class X-1 was selected through purposive sampling, a technique in which participants are chosen not randomly, but based on specific characteristics that make them particularly relevant to the research question (Creswell & Creswell, 2022). In this case, class X-1 was selected because preliminary observation and teacher interviews confirmed that it exhibited the most consistent and pronounced listening difficulties among all tenth-grade classes, as reflected in consistently below-minimum listening assessment scores. Selecting this class ensured that the study would be most informative precisely where instructional support was most needed.

Although a sample of 20 students is modest, it is statistically sufficient for the analytical requirements of a paired-sample design. In this type of design, each student serves as their own comparison point; their pre-test score is compared to their post-test score, which means the analysis does not require large sample sizes to detect meaningful differences, particularly when effects are expected to be moderate to large (Creswell, 2014). Prior MALL listening studies with similar pre-experimental designs have employed comparable samples of 15 to 30 students (Soleha, 2022; Wahyuni, 2021), and the purpose of this study was to generate detailed, context-specific insights rather than broad population-level generalizations, a purpose well-suited to purposive sampling.

Instrument

The study used a listening test comprising 28 items, including picture-based questions and short-conversation comprehension questions, designed to measure students' ability to

identify main ideas, specific information, and key details in spoken texts. The test used three item formats to capture different dimensions of listening ability. To ensure the instrument test was validated through expert judgment by a qualified English language educator, who reviewed all items against four criteria: alignment with the stated listening objectives; clarity and appropriateness of the audio content; suitability of item difficulty for tenth-grade students; and accuracy of the answer key.

Data Collection Procedures

Data were collected through three sequential phases, namely the pre-test, treatment, and post-test, which were designed to systematically establish participants' baseline performance, examine the effects of the instructional intervention, and assess subsequent changes in listening proficiency.

Pre-test. Before any instructional intervention, all 20 participants completed the test under standardized conditions to establish individual baseline listening ability. Audio was delivered through a classroom speaker at a consistent volume. Students were not permitted to replay any audio segment. They received no preparatory materials, ensuring that pre-test scores genuinely reflected their unaided listening proficiency at the outset of the study. In the pre-test stage, students completed the listening test before any intervention to establish a baseline measure of their listening ability.

Treatment. The instructional intervention consisted of four sessions, each approximately 60 minutes long, using the Learn English Listening application. Each session was structured according to a three-phase listening framework: pre-listening, while-listening, and post-listening. In the pre-listening, the researcher introduced the session topic and pre-taught key vocabulary to activate prior knowledge. This phase directly supported top-down processing by building a contextual schema before students engaged with the audio. While listening, students engaged with short conversational audio materials through the Learn English Listening application. The application was selected for its free access to authentic English audio across multiple proficiency levels, accompanied by written transcripts, adjustable playback speed controls, and integrated vocabulary definitions. In the post-listening, the researcher facilitated a collaborative whole-class review of students' answers. Corrective feedback was provided for incorrect responses, with particular attention to explaining why specific answer choices were accurate or inaccurate in relation to the spoken text. The teacher also drew students' attention to specific pronunciation patterns, intonation features, or connected speech phenomena that appeared to have caused comprehension difficulties.

Post-test. Following the intervention, a parallel version of the listening test was administered. The post-test items were structurally identical to the pre-test in format and difficulty level. However, the audio content was different to prevent the testing effect, ensuring that improvements reflected genuine gains in listening rather than test familiarity.

Data Analysis

Data were analysed using IBM SPSS Statistics version 30, following a logical sequence designed to ensure that the most appropriate statistical tests were applied. First, descriptive

statistics, including mean scores, standard deviations, and minimum and maximum values, were calculated for both the pre-test and post-test, providing an overall picture of students' listening performance before and after the intervention. Second, the Shapiro–Wilk test was conducted to check whether the data were normally distributed. This step is necessary because the paired-samples t-test, used in the subsequent step, requires normally distributed data to produce valid results; for small samples like this one ($n = 20$), the Shapiro–Wilk test is the most appropriate normality test (George & Mallery, 2003). Third, because both datasets were confirmed to be normally distributed, a paired-samples t-test was conducted to determine whether the difference between the pre-test and post-test mean scores was statistically significant. Finally, Cohen's d was calculated to measure the practical magnitude of the improvement, interpreted according to Cohen's (1988) widely accepted benchmarks: $d = 0.2$ represents a small effect, $d = 0.5$ a medium effect, and $d \geq 0.8$ a large effect. Reporting effect size alongside statistical significance is important because a statistically significant result does not automatically mean a practically meaningful one; the effect size communicates how large and educationally relevant the observed improvement is.

Ethical Consideration

Before data collection, formal approval was obtained from the school administration. All participants were informed about the study's purpose, procedures, and their right to participate voluntarily. Informed consent was secured, and anonymity was maintained by coding student identities (e.g., S1, S2). Furthermore, listening test scores were used exclusively for research analysis and had no bearing on the students' standard learning progress.

Trustworthiness of the Study

To ensure the trustworthiness of the quantitative findings, several measures were implemented. Content validity of the listening test was established through expert judgment, ensuring the instrument accurately reflected the intended constructs. Procedural consistency was maintained across all four treatment sessions through adherence to the same three-phase instructional framework, the same application, and standardized conditions for both assessment administrations. Normality testing before parametric analysis ensured the appropriateness of the statistical approach for the data's characteristics. Reporting both effect size (Cohen's d) and statistical significance provided a fuller, more transparent account of the findings. Finally, the use of a parallel post-test form, structurally equivalent to the pre-test but featuring different content, reduced the risk of direct memory effects inflating post-test scores, thereby enhancing the internal validity of the measurement.

RESULTS

This section presents and interprets the study's quantitative findings regarding the effectiveness of the Learn English Listening application in improving students' listening skills. To ensure clarity, the results are organized in four sequential steps: descriptive

statistics are presented first to characterize students' overall performance before and after the intervention; normality test results are reported to confirm the appropriateness of the subsequent parametric analysis; the paired-samples t-test results then establish the statistical significance of the observed improvement; and finally, the Cohen's d effect size analysis assesses the practical educational magnitude of that improvement.

Table 1. Descriptive statistics of students' pre-test and post-test

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test	20	46	89	65.90	11.201
Post-test	20	54	93	77.10	11.111

Table 1 presents the mean score, which increased from 65.90 in the pre-test to 77.10 in the post-test, reflecting a gain of 11.20 points (approximately 17% improvement). The relatively similar standard deviations (11.201 and 11.111) indicate that the spread of scores remained consistent, meaning that both lower- and higher-achieving students benefited from the intervention.

A closer look at the minimum and maximum scores provides insight into how improvement was distributed across different levels of learners. In the pre-test, the lowest recorded score was 46, and the highest pre-test score was 89, which, by contrast, suggests that at least one student entered the study with near-advanced listening ability. This 43-point gap between the lowest and highest scorers indicates that the class was highly heterogeneous in initial listening ability, a common characteristic of EFL classrooms in Indonesian public schools (Ramadhianti & Somba, 2022). By the post-test, the minimum score had risen from 46 to 54 (+8 points) and the maximum from 89 to 93 (+4 points). The fact that both the lowest and highest ends of the distribution improved suggests that the intervention was beneficial across the full spectrum of learner ability, not only for the weakest or strongest students. This is further supported by the near identical standard deviations across both assessments (11.201 versus 11.111), indicating that the spread of scores within the class remained consistent, meaning the improvement was broadly shared rather than driven by exceptional gains from a small number of students. This pattern can be attributed to the application's scaffolding features: students with lower proficiency could slow the audio speed and rely more heavily on transcripts to support word-level decoding. In contrast, more advanced students could engage at normal speed and use transcripts primarily for self-correction, a form of differentiated practice that the same application simultaneously provided to all learners.

In terms of specific listening competencies, students showed improvement in recognizing key vocabulary in spoken discourse, identifying main ideas in short conversations, and extracting specific factual details from audio texts. These are foundational components of both bottom-up processing (sound and word recognition) and top-down processing (use of context and background knowledge). Before the intervention, many students struggled particularly with speech rate and unfamiliar vocabulary in the audio materials. After the treatment, comprehension improved as students became more

comfortable navigating the application's features, particularly the adjustable playback speed and transcripts, which directly supported word recognition and reduced cognitive overload.

Before conducting hypothesis testing, a Shapiro–Wilk test was used to assess normality.

Table 2. Normality of the Shapiro-Wilk normality test

Variable	Statistic (W)	df	p-value
Pre-test	.967	20	.693
Post-test	.917	20	.086

Before proceeding to the main inferential analysis, it was necessary to verify that the data met the assumptions of the paired-samples t-test. Specifically, the paired samples t-test assumes that the scores in both conditions are approximately normally distributed, meaning that most scores cluster around the mean, with progressively fewer at the extremes. To test this assumption, the Shapiro–Wilk test was conducted, which is the most reliable normality test for small samples ($n < 50$) (George & Mallery, 2003). In this test, a p-value above 0.05 indicates that the data do not deviate significantly from normality; in other words, the normality assumption is satisfied. As shown in Table 2, the Shapiro–Wilk statistic for the pre-test data was .967 with a significance value of .693 ($p > .05$), and for the post-test data .917 with a significance value of .086 ($p > .05$). Because both significance values exceeded .05, the assumption of normality was confirmed for both datasets. The use of the paired-samples t-test was justified.

Table 3. Paired sample t-test results

Pair 1	Mean Difference	t	df	Sig. (2-tailed)
Pre-test – Post-test	-11.200	-7.049	19	.000

Table 3 reports the results of the paired-samples t-test, which directly addresses the central research question: was the improvement in students' listening scores statistically significant? The test yielded $t(19) = -7.049$, $p = .000$ (two-tailed). The negative sign of the t-value is simply a mathematical artefact of computing the difference as pre-test minus post-test; it indicates that post-test scores were higher, not lower, than pre-test scores. The significance value of .000, well below the established threshold of $\alpha = .05$, means that the probability of observing a difference this large purely by chance is less than 0.1%. In other words, the improvement from a class mean of 65.90 to 77.10 is almost certainly a genuine effect of the instructional intervention, not a statistical coincidence.

To examine the magnitude of the effect, Cohen's d was calculated as a standardized measure of effect size, enabling the researcher to quantify the strength of the difference between pre-test and post-test scores beyond mere statistical significance.

Table 4. Paired samples effect size (Cohen's d)

Comparison	Effect Size Measure	Standardizer	Point Estimate (d)	95% CI Lower	95% CI Upper
Pre-test vs. Post-test	Cohen's d	7.061	-1.586	-2.242	-0.912

Table 4 presents the effect size analysis, which answers a question that statistical significance alone cannot: how large and educationally meaningful was the improvement? Knowing that $p = .000$ tells us the result is unlikely due to chance, but it does not tell us whether the change was large enough to matter in practical educational terms. Cohen's d addresses this by expressing the size of the improvement in standard deviation units. Concretely, a Cohen's d of 1.0 would mean the post-test mean is one full standard deviation above the pre-test mean, a substantial and easily observable shift in performance. In this study, the standardizer of 7.061 (the standard deviation of the difference scores) produced a Cohen's d of -1.586 (absolute value: 1.586). According to Cohen's (1988) widely used benchmarks, small ($d = 0.2$), medium ($d = 0.5$), and large ($d \geq 0.8$), a value of 1.586 is not merely large; it is exceptionally large, falling nearly double the threshold for a large effect.

The 95% confidence interval, ranging from -2.242 to -0.912, provides further statistical assurance. This interval means that if this study were repeated many times with different random samples from the same population, 95% of the resulting confidence intervals would contain the true population effect. Crucially, this entire interval, including its lower bound of -0.912, falls in the large-effect range in absolute terms, meaning that even the most conservative plausible estimate of the true effect still represents a large, practically significant improvement. In plain terms, we can be highly confident that the intervention would produce a large, educationally meaningful improvement if implemented again under similar conditions. The magnitude of this effect is consistent with Li's (2023) A meta-analytic finding that MALL interventions tend to produce their largest effects in contexts where learners begin with lower proficiency levels and have limited prior exposure to authentic English input precisely the profile of the participants in this study, suggesting that targeted mobile-assisted listening instruction may be especially powerful for low-proficiency EFL learners in input-restricted environments such as Indonesian secondary schools.

DISCUSSION

The findings of this study revealed that the Learn English Listening application significantly improved students' listening comprehension, with a large effect size (Cohen's $d = 1.586$). This result is consistent with previous research on mobile-assisted listening tools. Yet, it also makes a unique contribution to the literature by demonstrating the effectiveness of a freely accessible application in a resource-limited Indonesian context.

Several studies have reported positive effects of mobile-assisted listening interventions. Soleha (2022) found that students using the ELLLO application outperformed those relying on conventional classroom instruction. Wahyuni (2021) reported that the Miracle English application improved both listening scores and learner motivation among Indonesian senior high school students. Similarly, Al-shamsi & Al-mekhlafi (2020)

documented significant gains in listening comprehension among adult EFL learners in Oman, while Each & Suppasetseree (2021) demonstrated improvements in Cambodian university students through mobile-blended cooperative learning. The present study aligns with these findings but reports a larger effect size, suggesting that the combination of structured teacher guidance and application features may amplify the benefits of mobile-assisted listening.

The improvement observed in this study is theoretically explicable through two complementary lenses. From the perspective of listening comprehension theory, the intervention simultaneously supported both bottom-up and top-down processing (Field, 2009; Goh & Vandergrift, 2012). Bottom-up processing was strengthened through the application's core technical features: the adjustable playback speed allowed students to slow speech to a manageable rate and focus on decoding individual sounds and words; the replay function enabled students to listen to the same segment multiple times, reinforcing phonological pattern recognition; and the transcript feature provided immediate orthographic feedback, helping students connect what they heard with the written form of words they might not have recognized acoustically. Together, these features addressed the core bottom-up processing bottleneck experienced by low-proficiency EFL listeners. Top-down processing, meanwhile, was systematically supported through the teacher-facilitated pre-listening phase, in which topic introduction, discussion questions, and vocabulary previewing activated the relevant background knowledge students needed to interpret spoken discourse at the discourse level, moving beyond word-by-word decoding toward holistic meaning construction.

From the MALL theoretical framework, the findings highlight several key affordances of mobile technology that contributed to the observed improvement. The application's learner control features, particularly the ability to replay audio, adjust speed, and access transcripts without social pressure or time constraints, directly addressed the listening anxiety that commonly inhibits EFL learners' comprehension in traditional classroom settings (Jeong, 2022; Kukulska-Hulme, 2020). Furthermore, Peng et al. (2024) and Shaojie et al. (2024) have demonstrated that metacognitive strategies, such as self-monitoring, goal setting, and reflective review, significantly amplify listening gains in MALL contexts. The post-listening review phase in this study functioned as a structured metacognitive reflection opportunity, encouraging students to evaluate their comprehension, identify their errors, and develop awareness of the specific linguistic features that had caused difficulty. This combination of technological affordance and guided metacognitive reflection may partially account for the particularly large effect size observed.

The findings carry important implications for English teachers, particularly in contexts with limited exposure to authentic English input. First, mobile-assisted listening applications can extend learning beyond classroom boundaries, allowing students to practice anytime and anywhere. Second, the adjustable playback speed and transcripts provide differentiated support, enabling both weaker and stronger students to benefit simultaneously. Third, integrating mobile tools into a structured instructional framework ensures that technology is not used in isolation but as part of a pedagogically sound process. For teachers in resource-constrained schools, the Learn English Listening application offers a cost-free solution that

can enhance listening instruction without requiring expensive proprietary platforms. Moreover, the study highlights the importance of combining digital tools with teacher guidance, as the pre-listening and post-listening phases maximized the effectiveness of the application by preparing students and consolidating their learning.

However, several limitations must be acknowledged. The pre-experimental one-group design, without a control group, means that alternative explanations for score gains cannot be entirely excluded: testing effects (students may have become more familiar with listening test formats after the pre-test), novelty motivation (students may have been more engaged simply because of the novelty of using smartphones in class), or natural learning maturation over the two weeks could have contributed to some portion of the observed improvement. The small sample of 20 students from a single class at one school limits the generalizability of the findings. The four-session intervention is brief, and whether the observed gains represent durable improvements in listening ability or short-term performance effects that may diminish without continued practice remains unknown. Future research should address these limitations through quasi-experimental or experimental designs with matched control groups, larger and more diverse multi-school samples, longer intervention periods with delayed post-tests to assess retention, and investigation of how individual learner variables, including listening anxiety, metacognitive awareness, digital literacy, and prior proficiency, moderate the effectiveness of mobile listening applications.

CONCLUSION

This study demonstrates that the Learn English Listening application is an effective digital tool for improving students' listening skills in an EFL context. The findings highlight that integrating mobile-assisted language learning (MALL) into classroom instruction can significantly enhance students' listening comprehension by providing flexible access to authentic input and opportunities for repeated practice.

The primary theoretical contribution of this study lies in demonstrating how a mobile listening application can simultaneously and synergistically support both bottom-up and top-down listening processes, the two cognitive mechanisms that underpin listening comprehension (Field, 2009; Goh & Vandergrift, 2021). Specifically, the application's adjustable playback speed, replay function, and written transcripts scaffolded bottom-up phoneme and word decoding, while the three-phase instructional framework, particularly the pre-listening vocabulary preparation and topic introduction, facilitated top-down schema activation and contextual interpretation. This dual-process support, embedded within a structured teacher-guided framework, offers a theoretically coherent account of why mobile listening applications work.

Pedagogically, the findings recommend that English teachers incorporate mobile listening applications within a structured, three-phase instructional framework to maximize their effectiveness. Teacher guidance, rather than unassisted independent use, appears to be a key factor in producing meaningful learning gains. Future research should employ experimental or quasi-experimental designs with control groups to strengthen causal inference; using larger, more diverse samples from multiple schools and regions to enhance generalizability; extending intervention periods and incorporating delayed post-tests to

assess the durability of learning gains; and examining how individual learner variables including listening anxiety, metacognitive awareness, digital literacy, and initial proficiency level mediate the effectiveness of mobile listening applications in Indonesian EFL classrooms. Such research would not only extend the empirical base for MALL in listening instruction but also provide increasingly precise guidance for how mobile technology can be most effectively deployed to address the listening development needs of Indonesian EFL learners.

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