

# Applying Elsa Speak with Mobile-Assisted Language Learning (MALL) to Improve Students' Speaking Achievement

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## Abstract

Speaking is one of the most essential skills in English learning; however, many students in English as a Foreign Language (EFL) contexts still experience difficulties in developing speaking proficiency due to limited opportunities for practice and teacher-centered instruction. At SMA Aziziah Palembang, students showed low performance in fluency, pronunciation, and confidence during speaking activities. This study investigated the effectiveness of the ELSA Speak application combined with the Mobile-Assisted Language Learning (MALL) strategy in improving students' speaking skills. A quasi-experimental design employing a pre-test and post-test control group was applied to two tenth-grade classes. The experimental group received instruction through ELSA Speak-based activities, while the control group was taught using conventional methods. Students' speaking performance was assessed in fluency, pronunciation, grammar, vocabulary, and comprehension using a rubric adapted from Brown (2004). The findings revealed that the experimental group's mean score improved from 14.75 to 15.75, while the control group showed only a slight increase from 13.53 to 13.69. The improvement in the experimental group was particularly evident in pronunciation and fluency. Nevertheless, statistical analysis confirmed a significant difference between the post-test score of the two groups ( $p = 0.027$ ), and a significant improvement within the experimental group ( $p = 0.000$ ). The relatively moderate magnitude of improvement may have been influenced by the short treatment duration and limited access to smartphones for practice. The study highlights the potential of integrating ELSA Speak and the MALL strategy to support speaking development in EFL classrooms. The study contributes to the growing discussion on technology-assisted language learning and provides implications for future English-speaking instruction.

## INTRODUCTION

English has become one of the most important languages in the era of globalization and international communication. It functions not only as a medium for intercultural interaction but also as an essential skill in education, business, technology, and professional development. According to Statista (2023), English is spoken by approximately 1.53 billion people worldwide, including native and non-native speakers, making it the most widely used language globally. In addition, Berlitz (2024) reports that English is used officially in more than 70 countries and dominates various international sectors such as science, higher education, tourism, and diplomacy. The Internet Society Foundation (2023) further reveals that more than 55% of online content is written in English, indicating the growing importance of English proficiency in the digital era. Consequently, the ability to communicate effectively in English has become increasingly necessary, particularly speaking skills, because speaking is directly related to communication in real-life situations.

In Indonesia, English is taught as a foreign language; however, many students still experience difficulties in mastering speaking skills. According to the Education First English Proficiency Index (EF EPI, 2023), Indonesia was placed in the low proficiency category, ranking 79th out of 113 countries with a score of 468. This condition indicates that Indonesian learners still face major challenges in using English effectively for communication. Speaking becomes one of the most difficult skills for students because it requires learners to produce language spontaneously while maintaining pronunciation, fluency, vocabulary, grammar, and comprehension simultaneously. Brown (2004) explains that speaking is a complex productive skill involving both linguistic and cognitive processes. Similarly, Goh and Burns (2012) state that speaking requires the integration of cognitive, social, and emotional factors, making it one of the most demanding language skills to develop.

In English as a Foreign Language (EFL) contexts, students often have limited opportunities to practice speaking outside the classroom. Hiver (2021) argues that insufficient exposure to authentic communication negatively affects learners' speaking development and confidence. Li (2023) also emphasizes that learners who rarely interact with native or proficient English speakers tend to struggle with pronunciation accuracy, fluency, and natural speech patterns. In Indonesian classrooms, speaking activities are frequently teacher-centered, causing students to become passive participants during learning. Many students are reluctant to express their ideas orally because they are afraid of making mistakes or being judged by their peers. Psychological barriers such as anxiety, low confidence, and fear of errors often reduce students' willingness to communicate in English.

Several previous studies have identified common speaking problems among Indonesian EFL learners that are closely related to the challenges described above. Fitriyanti and Malihah (2022) found that pronunciation, vocabulary mastery, and fluency are among the most dominant difficulties faced by students in speaking English. Aminah et al. (2025) and Mamang et al. (2023) also reported that limited interaction with native speakers and the lack of a supportive English-speaking environment contribute significantly to students' low speaking performance. Furthermore, Zhang, Dai, and Ardasheva (2020) explain that students with limited language exposure usually demonstrate low confidence and weak communication skills during speaking activities. These findings support the argument that insufficient opportunities for authentic communication, combined with psychological barriers such as anxiety and fear of making mistakes, may hinder students' speaking development. As a result, many learners are unable to express ideas fluently despite having basic grammatical knowledge and vocabulary.

The problems related to speaking skills were also found at SMA Aziziah Palembang. Based on preliminary observation, many students experienced difficulties in fluency, pronunciation, and confidence during speaking activities. Students tended to hesitate when expressing ideas in English and often depended heavily on teacher guidance. Traditional teaching methods that focused more on written exercises than oral communication also limited students' opportunities to practice

speaking actively. In addition, the lack of exposure to authentic English communication environments became another obstacle in improving students' speaking achievement.

This situation is partly explained by the limited presence of English in Palembang's public life compared with more internationally connected cities. In daily life, students in Palembang have relatively limited opportunities to encounter English outside the classroom. English-language signs, public announcements, tourism services, and interactions with international communities are less common than in major tourist destinations or globally connected cities. As a result, students are rarely exposed to authentic spoken English and have limited opportunities to practice communicating with international visitors or proficient English speakers. This condition may hinder the development of speaking skills, as insufficient exposure to authentic communication has been shown to negatively affect learners' speaking proficiency and confidence (Hiver et al., 2021). The issue of limited exposure to English communication is particularly evident in Palembang. Students have relatively few opportunities to encounter authentic spoken English outside the classroom and to interact with native or proficient English speakers in daily life. This situation is partly influenced by the limited presence of English in public settings compared with more internationally connected cities. For example, unlike Bali, which receives large numbers of international tourists and provides greater opportunities for authentic English interaction, Palembang offers fewer opportunities for such communication. According to the *Badan Pusat Statistik* (BPS) of Bali Province (2023), Bali received more than 5.2 million international tourists in 2023, while BPS South Sumatra (2024) reported that the number of foreign tourist visits to Palembang through Sultan Mahmud Badaruddin II Airport from 2022 to 2024 only reached 1,128 visitors. This difference suggests that students in Palembang have more limited opportunities to hear and practice authentic spoken English. Consequently, alternative learning strategies are needed to provide students with interactive speaking practice and immediate feedback.

One potential solution for addressing speaking problems in EFL classrooms is the integration of technology into language learning. Technology-based learning has become increasingly important because it offers flexible, interactive, and student-centered learning experiences. Mobile-Assisted Language Learning (MALL) is one of the most widely discussed approaches in modern language learning. Kukulska-Hulme (2020) explains that MALL enables students to access learning materials anytime and anywhere through mobile devices. MALL also supports autonomous learning, repeated practice, and immediate feedback, which are essential for speaking development. In addition, MALL allows learners to practice independently outside classroom hours, thereby increasing their opportunities for communication practice. Empirical evidence further supports MALL as a practical response to these challenges. Previous studies have reported that mobile-assisted language learning provides learners with greater access to learning resources, increased opportunities for language practice, and more flexible learning experiences. Nah et al. (2008) argue that MALL supports collaborative and individualized learning by enabling learners to access language materials beyond the classroom while addressing learners' individual needs. Similarly, Burston (2013) highlights that mobile technologies can facilitate continuous language learning by allowing students to engage with learning activities anytime and anywhere. Arvanitis and Krystalli (2021) further note that MALL contributes to increased learner motivation, participation, and interaction with language materials. These features are particularly relevant to speaking instruction because they provide learners with more opportunities to practice, receive feedback, and engage in meaningful language use outside regular classroom hours. Through smartphones and mobile applications, students are able to practice speaking repeatedly without depending entirely on classroom instruction. Therefore, MALL can be considered a practical approach to addressing common speaking challenges in EFL contexts, particularly those related to limited exposure, insufficient practice opportunities, and low learner confidence.

One of the mobile applications that has attracted attention in English language learning is ELSA Speak (English Language Speech Assistant). ELSA Speak is an artificial intelligence (AI)-based application designed to improve English pronunciation and speaking fluency. Founded in 2015, the application uses Automatic Speech Recognition (ASR) technology to analyze learners' speech and provide immediate corrective feedback. Becker and Edalatshams (2019) explain that AI-powered speech recognition technology can effectively identify learners' pronunciation errors and provide personalized feedback for improvement. ELSA Speak offers various features such as pronunciation exercises, role-play activities, conversation simulations, fluency analysis, and progress tracking, which help learners practice speaking interactively.

The integration of ELSA Speak with the MALL strategy is considered relevant for improving students' speaking skills because the application provides flexible and interactive speaking practice. Through repeated speaking activities and instant feedback, learners can become more aware of their pronunciation errors and gradually improve their fluency. According to Georgiou (2025), AI-based language applications contribute significantly to pronunciation development because they provide personalized learning experiences and immediate feedback. In addition, ELSA Speak creates opportunities for learners to practice English independently, which is particularly useful in EFL contexts where exposure to native speakers is limited.

Previous studies have reported positive findings regarding the use of ELSA Speak in language learning. Ngan et al. (2024) found that students who used ELSA Speak for three months demonstrated significant improvement in pronunciation and communication confidence. Patmasari and Zaitun (2024) also reported that students' speaking scores improved significantly after using ELSA Speak in speaking activities. Similarly, Akhmad and Munawir (2022) concluded that ELSA Speak effectively improved students' pronunciation ability and increased their motivation to practice speaking. Putri et al. (2024) further revealed that students taught using ELSA Speak achieved higher speaking scores than those who learned through conventional teaching methods.

Although many studies have confirmed the effectiveness of ELSA Speak, several research gaps remain. Most previous studies focused on university students or vocational school learners, while studies involving senior high school students in Indonesia are still limited. In addition, limited research has specifically investigated the integration of ELSA Speak with the Mobile-Assisted Language Learning (MALL) strategy in public senior high school contexts, particularly in Palembang. Furthermore, some previous studies focused mainly on pronunciation without examining broader aspects of speaking achievement such as fluency and speaking confidence. Therefore, further research is needed to investigate the effectiveness of ELSA Speak integrated with the MALL strategy in improving students' speaking achievement.

Based on these conditions, this study aimed to investigate the effectiveness of using the ELSA Speak application integrated with the Mobile-Assisted Language Learning (MALL) strategy to improve students' speaking achievement at SMA Aziziah Palembang. Specifically, the study focused on identifying whether there was a significant difference in students' speaking achievement before and after the implementation of ELSA Speak and whether students taught using ELSA Speak achieved better speaking performance than those taught using conventional methods.

This study proposed the hypothesis that students taught using the ELSA Speak application integrated with the MALL strategy would demonstrate better speaking achievement than students taught through conventional instruction. The integration of ELSA Speak and MALL was predicted to improve students' pronunciation and fluency because learners were provided with continuous speaking practice, immediate corrective feedback, and flexible learning opportunities. Through interactive and technology-supported learning, students were expected to become more confident and motivated in speaking English.

The theoretical foundation of this study was based on theories of speaking skills, Mobile-Assisted Language Learning (MALL), and technology-assisted language learning. Brown (2004)



explains that speaking consists of several important components, including pronunciation, grammar, vocabulary, fluency, and comprehension. These components were used as indicators in assessing students' speaking achievement in this study. Furthermore, the concept of MALL proposed by Kukulska-Hulme and Shield (2008) emphasizes the role of mobile technology in supporting flexible and interactive language learning. The study also adopted theories related to AI-based pronunciation learning through ELSA Speak, which provides real-time feedback and autonomous learning opportunities for learners.

Conceptually, this study positioned ELSA Speak as the independent variable integrated with the MALL strategy, while students' speaking achievement served as the dependent variable. The speaking achievement indicators included pronunciation, fluency, grammar, vocabulary, and comprehension adapted from Brown (2004). The use of ELSA Speak was expected to improve students' speaking achievement by providing repeated speaking practice, pronunciation correction, and interactive communication activities. The conceptual framework of this study assumed that technology-supported learning environments encourage learners to practice more actively and independently, leading to better speaking performance.

In summary, this study addressed the issue of low speaking achievement among EFL learners, particularly students at SMA Aziziah Palembang, by integrating the ELSA Speak application with the Mobile-Assisted Language Learning (MALL) strategy. The study was conducted because speaking proficiency has become increasingly important in modern education, communication, and future career preparation, yet many Indonesian students still struggle to communicate confidently and accurately in English-speaking situations. Previous studies have shown the positive impact of technology-assisted language learning on speaking skills; however, limited studies have investigated the effectiveness of ELSA Speak in Indonesian senior high school contexts. Therefore, this study contributes to the existing literature by providing empirical evidence regarding the use of AI-based mobile learning applications to improve students' speaking achievement. The novelty of this study lies in the integration of ELSA Speak and the MALL strategy within a senior high school setting in Palembang, focusing on students' pronunciation and fluency development through interactive mobile-assisted learning.

## METHOD

This study employed a quantitative quasi-experimental design using a pre-test and post-test control group design to investigate the effect of the ELSA Speak application integrated with a Mobile-Assisted Language Learning (MALL) approach on students' speaking skills. The study was conducted at SMA Aziziah Palembang during the 2024/2025 academic year over a period of twelve meetings. Quasi-experimental research was considered appropriate because the researcher was unable to randomly assign individual students into groups while still aiming to examine the causal relationship between the treatment and students' speaking achievement. The study focused on improving students' pronunciation and fluency through technology-assisted speaking practice supported by artificial intelligence (AI)-based feedback provided by the ELSA Speak application.

The population of this study consisted of all tenth-grade students at SMA Aziziah Palembang, totaling 87 students distributed across three classes. Random sampling was employed to select the sample in order to minimize bias and ensure fairness in group selection. Two classes consisting of 64 students were selected as the research sample. Class X.1, consisting of 32 students, was assigned as the experimental group, while class X.2, consisting of 32 students, served as the control group. The experimental group received speaking instruction integrated with the ELSA Speak application and MALL activities, whereas the control group was taught through conventional English teaching methods without the use of the application. Tenth-grade students were selected because they were considered suitable participants for developing foundational English speaking skills and had more flexible learning schedules compared to upper-grade students.

The data were collected through speaking tests administered before and after the treatment. The pre-test was conducted to identify students' initial speaking proficiency, while the post-test was administered after the treatment sessions to measure students' improvement. In both tests, students performed individual speaking tasks on familiar topics related to their daily lives. Each student was given preparation time before delivering a short oral performance lasting approximately one to three minutes. Students' speaking performances were evaluated using a speaking rubric adapted from Brown (2004), which assessed five aspects of speaking ability: pronunciation, fluency, grammar, vocabulary, and comprehension. However, the main focus of this study was students' pronunciation and fluency development. To maintain objectivity and consistency in scoring, all speaking performances were assessed by two independent raters. The students' responses were also audio-recorded to support accurate evaluation.

The treatment was conducted over ten meetings between the pre-test and post-test sessions. During the treatment, the experimental group used the ELSA Speak application as part of classroom and independent learning activities following the principles of Mobile-Assisted Language Learning (MALL). At the beginning of each session, the researcher introduced the speaking topic, target vocabulary, pronunciation focus, and speaking objectives. Students then practiced using several features of the ELSA Speak application, including pronunciation drills, conversation practice, speech analysis, and AI-generated feedback. The learning topics included self-introduction, daily activities, hobbies, giving directions, expressing opinions, describing people, and telling past experiences. Students were encouraged to practice repeatedly using their mobile devices both inside and outside the classroom to improve pronunciation accuracy, fluency, stress, and intonation. In addition to digital practice, classroom speaking activities such as role plays, peer discussions, conversation strips, and guided speaking tasks were also implemented to strengthen students' oral communication skills. Meanwhile, the control group continued learning through regular classroom instruction without integrating the ELSA Speak application.

The validity of the speaking instrument was established through expert judgment to ensure that the test content aligned with the objectives of speaking assessment. Meanwhile, the reliability of the speaking scores was measured using inter-rater reliability analysis through Pearson Product Moment correlation. The results indicated very strong agreement between the two raters across both pre-test and post-test assessments, demonstrating that the instrument produced reliable and consistent scores. The collected data were statistically analyzed using SPSS (Statistical Package for the Social Sciences) version 25 through Paired Samples t-tests and Independent Samples t-tests to determine the effectiveness of the ELSA Speak application integrated with the MALL approach on students' speaking skills.

## **FINDINGS AND DISCUSSION**

This study investigated the effectiveness of the ELSA Speak application integrated with the Mobile-Assisted Language Learning (MALL) strategy in improving students' speaking skills at SMA Aziziah Palembang. The findings clearly answer the research question by indicating that the integration of ELSA Speak and MALL was effective in improving students' speaking performance. Students in the experimental group showed greater improvement than those in the control group. The findings were obtained from descriptive statistics, normality and homogeneity testing, as well as paired-sample and independent-sample t-tests based on students' pre-test and post-test scores covering pronunciation, grammar, vocabulary, fluency, and comprehension.

Before conducting hypothesis testing, the data were first examined through normality and homogeneity tests to ensure that the assumptions for parametric statistical analysis were fulfilled. The Shapiro-Wilk test initially indicated that the experimental group's pre-test ( $p = 0.009$ ) and post-test ( $p = 0.027$ ) data were not normally distributed, whereas the control group data were normally distributed ( $p > 0.05$ ). Therefore, a residual-based normalization technique was applied to improve the data distribution. After the transformation process, all datasets fulfilled the normality assumption with significance values above 0.05. Furthermore, Levene's test showed a significance value of 0.933 ( $p > 0.05$ ), indicating that the variances between the experimental and control groups were homogeneous. These findings confirmed that the data met the assumptions required for parametric statistical analysis.

The descriptive statistics demonstrated that students in the experimental group showed greater improvement in speaking performance compared with students in the control group. Students who learned through the ELSA Speak application integrated with the MALL strategy achieved higher post-test scores after the treatment. In contrast, students who received conventional instruction showed only slight improvement in speaking performance. Descriptive statistics of experimental and control groups are presented in Table 1.

**Table 1.** Descriptive Statistics of Experimental and Control Groups

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pretest Experimental	32	8	20	14.75	3.538
Posttest Experimental	32	9	22	15.75	3.417
Pretest Control	32	6	22	13.53	3.733
Posttest Control	32	6	22	13.69	3.856

(Source: Research Data, 2025)

As shown in Table 1, the experimental group experienced a clearer improvement than the control group. The mean score of the experimental group increased from 14.75 in the pre-test to 15.75 in the post-test, whereas the control group showed only a slight increase from 13.53 to 13.69. In addition, the experimental group demonstrated improvement in both minimum and maximum scores after the treatment. These results indicate that students benefited from repeated speaking practice and immediate pronunciation feedback provided through the ELSA Speak application.

The findings of this study are consistent with previous studies which reported that mobile-assisted language learning positively supports students’ speaking development. However, unlike several previous studies that mainly emphasized pronunciation accuracy, the present study found that the integration of the ELSA Speak application with the MALL strategy also enhanced students’ overall speaking performance, including fluency, vocabulary, and classroom participation. These findings indicate that the integration of the ELSA Speak application with the MALL strategy contributed not only to pronunciation improvement but also to students’ overall speaking performance.

To examine the difference between the experimental and control groups, an independent-sample t-test and a paired-sample t-test were conducted. The summary of the statistical analyses is presented in Table 2.

**Table 2.** Summary of t-test

Test	Mean Difference	p-value
Independent (Post-test Experimental vs Control)	2.06	0.027
Paired (Pre-vs Post-test Experimental)	1.00	0.000

(Source: Research Data, 2025)

As presented in Table 2, the independent-sample t-test produced a significance value of 0.027, which was lower than 0.05, indicating a statistically significant difference between the post-test scores of the experimental and control groups. The experimental group achieved better speaking performance after receiving instruction through the ELSA Speak application integrated with the MALL strategy. In addition, the paired-sample t-test showed a significance value of 0.000, confirming a significant improvement between the pre-test and post-test scores within the experimental group after the implementation of the treatment.

Overall, the findings demonstrate that the implementation of the ELSA Speak application integrated with the MALL strategy positively affected students' speaking skills at SMA Aziziah Palembang. Compared with conventional teaching methods, the integration of mobile-assisted language learning provided students with more flexible, interactive, and intensive speaking practice opportunities. These findings suggest that integrating mobile-assisted language learning into speaking instruction can provide meaningful support for students' English speaking development.

The findings of this study demonstrated that the integration of the ELSA Speak application with the Mobile-Assisted Language Learning (MALL) strategy positively influenced students' speaking skills at SMA Aziziah Palembang. The statistical analyses showed that students who learned through ELSA Speak combined with the MALL strategy achieved significantly better speaking performance than students who received conventional instruction. Although the descriptive increase in scores was relatively moderate, the statistical significance indicated that the treatment produced a meaningful impact on students' speaking development. These findings answered the objective of the study by confirming that mobile-assisted language learning can effectively support English speaking instruction, particularly in improving pronunciation, fluency, vocabulary use, and speaking participation.

One of the most important aspects contributing to the improvement was the immediate feedback system provided by the ELSA Speak application. Through automatic speech recognition technology, students received direct correction regarding their pronunciation performance. This feature enabled students to identify pronunciation errors independently and repeat speaking practices several times until they achieved better accuracy. Such learning conditions promoted autonomous learning because students did not depend solely on teacher correction during classroom interaction. According to Pham and Pham (2025), applications such as ELSA Speak encourage students to become more independent learners by providing personalized speaking feedback and flexible learning opportunities. In the context of this study, the application appeared to reduce students' anxiety in speaking English because students could practice repeatedly without fear of making mistakes in front of peers.

The findings also suggested that the integration of technology into speaking instruction increased students' engagement during classroom activities. In conventional speaking classes, students often participate passively because speaking activities mainly depend on teacher explanation and limited classroom interaction. However, during the implementation of the ELSA Speak application, students became more actively involved in pronunciation practice, listening activities, repetition drills, and speaking exercises. This active participation may have contributed to the improvement of their speaking performance. Harmer (2007) explained that speaking skills develop more effectively when learners are provided with meaningful opportunities to use language actively rather than merely receiving theoretical explanation. Therefore, the use of ELSA Speak integrated with communicative classroom activities may have created a more interactive learning environment that encouraged students to participate more confidently.

The improvement in students' speaking ability was also influenced by the instructional materials applied during the treatment. The researcher selected several materials such as *Minimal Pairs*, *Basic Pronunciation*, *Tongue Twisters*, *Describing People*, *Daily Routines*, and *Hobbies* because these topics focused on strengthening students' fundamental speaking competence. These materials provided opportunities for students to practice both pronunciation and communicative expression simultaneously. Hirschfeld (2022) argued that pronunciation mastery and vocabulary development are fundamental elements for successful oral communication because learners need understandable pronunciation and sufficient lexical knowledge to communicate effectively. In this study, students practiced common expressions and sentence patterns repeatedly, which may have strengthened their confidence and familiarity with spoken English.

Among the speaking components, pronunciation appeared to show one of the clearest improvements. Before the implementation of the treatment, many students experienced difficulty pronouncing English sounds that do not commonly exist in Indonesian phonology. Several students mispronounced consonants such as /θ/ and /ð/, while others confused short and long vowel sounds, including /ɪ/ and /i:/. This difficulty often reduced intelligibility and made students less confident during speaking activities. After using the ELSA Speak application, students gradually became more aware of pronunciation distinctions and attempted to articulate words more accurately. The repetitive corrective practice available in the application may have helped students internalize proper articulation patterns. This finding is consistent with McCrocklin, Fetting, and Markus (2022), who found that technology-assisted pronunciation training improves learners' awareness of English phonological features and enhances pronunciation intelligibility through repetitive feedback mechanisms.

The findings further demonstrated improvement in students' suprasegmental pronunciation features, particularly word stress and intonation. At the beginning of the treatment, many students tended to produce flat and monotonous speech with incorrect stress placement. Several students also emphasized inappropriate syllables in multisyllabic words, causing misunderstanding during communication. Through repeated listening and pronunciation activities provided by the application, students gradually learned to place stress more accurately and vary their intonation according to sentence meaning. Derwing and Munro (2015) explained that explicit pronunciation training combined with immediate feedback can improve learners' awareness of English rhythm, stress, and intonation patterns. Similarly, Brazil (1997) emphasized that intonation functions not only as a grammatical signal but also as a communicative device expressing emotions, attitudes, and speaker intentions. In this study, the visual and auditory feedback provided by the application may have helped students recognize natural speech patterns more effectively.

Another important finding was related to students' fluency development. Although the increase in fluency was not extremely high, students in the experimental group demonstrated greater confidence in producing longer utterances and expressing ideas more continuously. Activities related to Daily Routines, Hobbies, and Describing People encouraged students to communicate using complete sentences rather than isolated vocabulary items. Through repeated speaking exposure, students became more accustomed to organizing ideas verbally in English. Nation and Macalister (2010) argued that fluency develops through continuous language use and repeated exposure to communicative speaking tasks. In the present study, students were encouraged to practice speaking regularly both during classroom activities and through independent interaction with the application, which may have contributed to gradual fluency improvement.

However, the findings also indicated that fluency improvement remained relatively limited compared with pronunciation improvement. This condition may have occurred because fluency development generally requires a longer intervention period and more extensive communicative interaction. Tavakoli and Hunter (2018) explained that speaking fluency develops gradually through sustained communicative practice over time. Since this study was conducted in only twelve meetings, the duration of the treatment may not have been sufficient to produce substantial fluency gains. Therefore, although the statistical analyses demonstrated significant improvement, the speaking development observed in this study may represent only an initial stage of fluency enhancement.

The use of the ELSA Speak application also appeared to contribute to students' vocabulary development and speaking confidence. Through repeated exposure to speaking tasks and contextual learning materials, students gradually learned how to use vocabulary in communicative situations. Students were not merely memorizing isolated words but were practicing vocabulary through meaningful speaking activities. Rajayi and Maleki (2023) argued that vocabulary retention becomes more effective when learners use vocabulary in authentic communication rather than through mechanical memorization. In this study, students practiced newly learned vocabulary directly in speaking tasks, which may have strengthened both comprehension and language retention.



Another factor influencing the success of the treatment was teacher support during the learning process. During the implementation of the study, not all students possessed personal mobile devices that could be used continuously in classroom activities. To overcome this challenge, the teacher facilitated learning by providing available devices and arranging students' turns in using the application. The teacher also guided students in operating the application and encouraged them to participate actively during speaking practice. Ngan et al. (2024) emphasized that teacher assistance remains highly important in technology-assisted learning because technological tools alone cannot ensure successful learning outcomes without appropriate pedagogical support. In this study, teacher involvement appeared to play an essential role in maintaining students' motivation and classroom participation.

The findings further demonstrated that the integration of ELSA Speak with the MALL strategy created a more student-centered learning environment than conventional classroom instruction. Students were able to practice speaking independently according to their own pace and learning needs. They could repeat pronunciation exercises multiple times until they felt satisfied with their performance. This flexibility may have increased students' confidence because they had greater control over their learning process. According to Kukulska-Hulme and Shield (2008), mobile-assisted language learning supports flexible and personalized learning experiences because students can access learning materials anytime and anywhere. In the context of this study, such flexibility appeared to increase students' engagement and willingness to participate in speaking activities.

Compared with the control group, students in the experimental group demonstrated greater improvement in overall speaking performance. The independent-samples t-test revealed a statistically significant difference between the two groups ( $p = 0.027 < 0.05$ ), indicating that students who learned through the integration of ELSA Speak and the MALL strategy achieved better speaking outcomes than those who received conventional instruction. In addition, the paired-samples t-test showed a significant improvement in the experimental group after the treatment ( $p = 0.000 < 0.05$ ). The control group, which received conventional instruction, showed only slight improvement in speaking scores. These findings suggest that the integration of ELSA Speak with communicative classroom activities provided more opportunities for intensive pronunciation practice, individualized feedback, and active speaking engagement. These findings support previous studies reporting that technology-assisted language learning can create more engaging and motivating language learning environments than traditional instruction alone.

The present study also contributes additional insight to previous research concerning the use of ELSA Speak in English learning contexts. Several previous studies mainly emphasized the effectiveness of ELSA Speak in improving pronunciation accuracy. However, the findings of this study demonstrated that the integration of ELSA Speak with the MALL strategy also supported broader speaking development, including fluency, vocabulary use, classroom participation, and speaking confidence. This difference may have occurred because the present study integrated pronunciation practice with communicative speaking activities rather than focusing solely on isolated pronunciation drills. Consequently, students were encouraged not only to pronounce words correctly but also to apply their speaking skills in meaningful communication.

Furthermore, the findings of this study support the theoretical perspective of Mobile-Assisted Language Learning, which emphasizes the role of technology in facilitating flexible, interactive, and learner-centered language instruction. Mobile learning environments allow students to continue practicing language skills beyond classroom boundaries. In speaking instruction, this flexibility is especially important because speaking competence develops through repeated practice and continuous exposure to communicative interaction. The ELSA Speak application appeared to support these learning conditions by allowing students to practice pronunciation repeatedly and independently.

Despite the positive findings, several limitations should be acknowledged. First, the duration of the treatment was relatively short, consisting of only twelve meetings, which may have limited the extent of speaking development achieved by students. Second, unequal smartphone ownership among students created challenges in implementing individual practice consistently during classroom activities. Third, the study involved only one school and a relatively limited number of participants, limiting the generalizability of the findings to broader educational settings. Additionally, the present study mainly focused on quantitative analysis and did not investigate students' perceptions, motivation, or learning experiences in depth.

Although the findings of this study indicated a statistically significant improvement in students' speaking performance, the magnitude of improvement can be considered moderate rather than highly substantial. This result suggests that while the integration of ELSA Speak and the MALL strategy effectively enhanced students' speaking skills, the development of speaking competence requires sustained practice and continuous exposure over a longer period of time. Therefore, the significant yet moderate improvement observed in this study should be interpreted as an encouraging indication that technology-assisted language learning can support speaking development, although greater gains may be achieved through longer and more intensive implementation.

This condition may be explained by the nature of speaking skill development itself, which is a complex and gradual process requiring sustained exposure, continuous practice, and meaningful interaction over an extended period of time. Speaking fluency, in particular, does not develop rapidly within a short intervention because it involves cognitive processing, lexical retrieval, and real-time language production simultaneously.

Therefore, future researchers are recommended to conduct longer intervention periods involving larger participant groups from different educational contexts. Future studies may also explore the integration of mobile-assisted language learning with other communicative speaking strategies to obtain more comprehensive findings regarding speaking development. In addition, qualitative methods such as interviews, classroom observations, and reflective journals may provide deeper understanding regarding students' attitudes, challenges, and learning experiences during technology assisted speaking instruction.

## **CONCLUSION AND IMPLICATIONS**

This study was conducted to investigate the effectiveness of integrating the ELSA Speak application with the Mobile-Assisted Language Learning (MALL) strategy in improving students' English speaking skills at SMA Aziziah Palembang. The findings indicate that the integration of ELSA Speak and MALL positively contributed to students' speaking performance, particularly in pronunciation and fluency development. Although the improvement was statistically significant, the magnitude of improvement remained moderate rather than highly substantial. Overall, the combination of immediate pronunciation feedback, repeated speaking practice, meaningful communicative materials, and teacher facilitation created a more interactive and supportive learning environment for students. Compared with conventional classroom instruction, technology-assisted speaking learning provided students with more flexible and intensive opportunities to practice speaking English actively. Therefore, the integration of mobile-assisted language learning applications such as ELSA Speak may serve as an effective supplementary approach for improving students' speaking skills in English language classrooms.

The results suggest that the use of ELSA Speak supports learners in developing more accurate pronunciation through its automatic speech recognition system, which provides immediate corrective feedback. This feature enables students to identify pronunciation errors independently and engage in repeated practice until more accurate production is achieved. In addition, the MALL-based learning environment allows students to practice speaking in a more flexible and interactive manner, which contributes to increased engagement and participation in speaking activities.

However, the development of speaking fluency appeared to be less pronounced compared to pronunciation improvement. This finding indicates that while technology-assisted pronunciation practice can be achieved in a relatively short period, fluency development requires more sustained communicative exposure and extended practice over time. The limited duration of the intervention (twelve meetings) may have restricted the extent of fluency development, as speaking fluency involves real-time language processing, automaticity, and continuous language production.

Another important finding is that learning outcomes were also influenced by contextual classroom conditions. Unequal access to smartphones among students created limitations in the frequency and independence of practice. In addition, teacher facilitation played a crucial role in ensuring the effectiveness of the learning process. The teacher's guidance in operating the application, managing group participation, and encouraging students' engagement contributed significantly to the success of the implementation.

Overall, this study demonstrates that the integration of ELSA Speak with the MALL strategy provides a meaningful contribution to the development of students' speaking skills. The findings confirm that mobile-assisted language learning can serve as an effective supplementary approach in English language teaching, particularly in creating a more interactive, learner-centered, and practice-oriented speaking environment. However, the results also indicate that longer implementation periods and more equitable access to digital devices are necessary to achieve more substantial and sustained improvements in speaking competence.

The findings of this study generate several implications that are directly connected to the results and contribute to the development of English language teaching practices, learning theory, and future research directions.

## **Practical Implications**

From a pedagogical perspective, the integration of ELSA Speak with MALL offers practical value for English teachers, particularly in speaking instruction. The application can be utilized as a supplementary learning tool to enhance pronunciation practice and provide students with opportunities for independent learning outside classroom time. Teachers are encouraged to integrate mobile-assisted activities into speaking lessons to increase student engagement and provide more individualized learning experiences. However, teacher facilitation remains essential in guiding students, monitoring progress, and ensuring that technology is used effectively for learning purposes.

### **Theoretical Implications**

The findings contribute to the development of Mobile-Assisted Language Learning (MALL) theory in the context of speaking skill acquisition. The study supports the notion that mobile technology can enhance language learning by providing immediate feedback, increasing learning autonomy, and facilitating repeated practice. Furthermore, the results extend previous research on ELSA Speak by demonstrating that its pedagogical contribution is not limited to pronunciation improvement but also extends to broader speaking competencies, including fluency development, vocabulary use, and learner confidence. This indicates that technology-assisted pronunciation tools can play a more comprehensive role in oral language development when integrated with communicative learning strategies

### **Social and Educational Implications**

This study also has social and educational implications related to learner affect and classroom dynamics. The use of ELSA Speak helped reduce students' speaking anxiety by allowing them to practice repeatedly in a non-threatening environment. This condition encourages more active participation and reduces fear of making mistakes in front of peers. In addition, the study highlights the importance of addressing digital inequality in educational settings, as unequal access to smartphones can affect the consistency and effectiveness of mobile-based learning activities.

### **Future Research Implications**

The limitations of this study suggest several directions for future research. First, future studies are recommended to extend the duration of intervention in order to obtain more significant improvements in speaking fluency and overall communicative competence. Second, research with larger and more diverse samples across different educational levels is needed to improve the generalizability of the findings. Third, future studies may explore the integration of ELSA Speak with other communicative speaking strategies or additional language learning applications to obtain more comprehensive results. Finally, combining quantitative and qualitative approaches is recommended to gain deeper insights into students' learning experiences, motivation, and challenges in technology-assisted language learning environments.

In conclusion, the integration of the ELSA Speak application with the Mobile-Assisted Language Learning (MALL) strategy contributed positively to students' English speaking performance. The statistical findings showed that students in the experimental group achieved significantly better speaking performance than those in the control group, indicating the effectiveness of the intervention. The improvement was reflected in several aspects of speaking performance, including pronunciation, fluency, vocabulary use, and overall speaking competence. The combination of immediate pronunciation feedback, repeated practice opportunities, communicative learning materials, and teacher facilitation created a more interactive and supportive learning environment compared to conventional instruction. Therefore, mobile-assisted language learning can be considered a promising supplementary approach in English language teaching, particularly for enhancing students' speaking competence in secondary education contexts.

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