

A Systematic Literature Review: The Use of *ELSA Speak* on EFL Students' Speaking Skill

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ABSTRACT

The role of speaking skill as one of the basic skills of mastering English is important to be given special attention, especially for EFL Students. The popularity of *ELSA Speak* as an application that is widely used to help improve speaking skills has led to a lot of research on the application. Therefore, it is necessary to conduct research with the systematic literature review method to find strong evidence about the impacts of using *ELSA Speak* for ELF students' speaking skill. The systematic literature review method process consists of defining the research question, implementing a search strategy, collecting data, reporting results with PRISMA flow diagram, assessing quality, and analyzing the results by narrative synthesis. As a result, the study found 7 studies that were in accordance with the eligibility criteria to be analyzed in depth. All studies show an increase in the use of *ELSA Speak* from various levels of education of EFL students (Junior High School, Senior High School, and University). This application has been proven to be effective in improving pronunciation, fluency in speaking, grammatical structure, vocabulary mastery, and students' confidence in conveying ideas orally in English.

Keywords: *speaking skill, ELSA speak, systematic literature review, EFL students*

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INTRODUCTION

Speaking is one of the four basic skills of mastering English (Listening, reading, and writing). For students, speaking skills are important to ensure and measure their learning ability towards the language through the way they express feelings, share knowledge and information, convey ideas, and more (Azzahra et al., 2019). Apart from being a measuring tool, speaking skill have the potential to motivate students to increase their confidence in English and can be an indicator of the development of their abilities. The development resulting from this speaking skill is one of the determinants of success in mastering English. However, for English Foreign Language (EFL) students, speaking is one of the most difficult skills to master. Supported by Lerazaton (1996 as cited in Asratie et al., 2023), speaking in a second or foreign language is sometimes seen as the most challenging of the four skills.

The contribution of technology in the field of education can be the answer to handling learning problems for students. In particular, the contribution of technology in English learning can be seen through the presence of various applications known as Mobile Assisted Language Learning (MALL). In the context of English language learning, the MALL functions as a tool that supports the achievement of learning objectives. Research by Fan et al. (2023) shows that English learning applications significantly improve students' abilities and motivation, as well as prove their effectiveness in complementing traditional teaching methods. This tool has great potential to improve higher-order thinking skills of the students.

English Language Speech Assistant, or familiarly called *ELSA Speak* is one of the first MALL to involve AI in its programming. *ELSA Speak* is a mobile application that focuses on enhancing speaking skill and English pronunciation through the use of speech recognition technology (Anguera & Van, 2016). *ELSA Speak* can be used by anyone from various levels of education and backgrounds who need to master speaking

skill, including EFL (English as a Foreign Language) students. For EFL students, *ELSA Speak* can help them practice their speaking skill more with an AI feature that can correct pronunciation accurately. *ELSA Speak* effectively can improve pronunciation skill so that it can foster students motivation to learn pronounce (Kholis, 2021). Many language learners consider speaking ability to be a fundamental indicator of language proficiency. These learners prioritize fluency over skills such as reading, writing, or listening comprehension. As a result, they often prefer to be taught by fluent English speakers, believing that speaking is the most critical skill to develop (Elyas & Alghofaili, 2019). Moreover, by using *ELSA Speak*, EFL students have the potential to have fluent English skills like native speakers.

Along with the popularity of *ELSA Speak* as a pioneer in the use of AI in MALL, recently there have been many studies on *ELSA Speak* related to EFL students' speaking skill. Researchers feel that this phenomenon is important to raise as a research. The research will use systematic literature review as a method to know what are the impacts of using *ELSA Speak* on EFL students' speaking skill. Through systematic literature review, the researcher will synthesize scientific evidence to obtain research results in a transparent and reproducible way, then the researcher inputs all the published evidence related to the discussion and assesses the quality of the evidence obtained. Using reproducible methods, systematic reviews aim to reduce various sources of bias, such as reporting bias, evidence selection bias, and publication bias (Drucker et al., 2016). It is hoped that the research can provide the results of analysis and synthesis in the form of well integrated conclusions so that it can become reliable scientific evidence. So that the research will have the opportunity to present the latest evidence regarding the use of *ELSA Speak* on speaking skill of the EFL students.

LITERATURE REVIEW

According Guebba (2021), speaking skill is a tangible manifestation of ideas, concepts, and assumptions designed by humans, which transform abstract ideas into meaningful sounds and speech. speaking skill can be defined as the ability to convey information, viewpoints, and ideas in an accountable way (Razaq et al., 2022) In this context, speaking skill also include the ability to convey messages through spoken language, where interview techniques can be an effective method for developing those skills (Sihotang et al., 2021). According to Brown (2004), there are five main components that form effective speaking skill, namely pronunciation, vocabulary, grammar, fluency, and comprehension. Each of these components interacts with each other and contributes to creating clear and effective communication. Speaking skill are essential for EFL students because they show a positive correlation with overall language skills and can improve other language macro skills, such as listening, reading, and writing (Siddiqui, 2014). They strengthen grammar and vocabulary and increase students' engagement with the language (Naibaho, 2022). Therefore, speaking skill should be a priority in the English learning process.

Yuliawati & Suryadi (2023) explained that the *ELSA Speak* application serves as a tool that students can use to improve their speaking skill in English, with a user-friendly design and a variety of materials offered, so that it can result in a significant improvement in students' oral communication skills if used regularly. Various studies have shown the effectiveness of *ELSA Speak* in improving students' pronunciation skill. In Samad & Ismail (2020) research, this application significantly improved the pronunciation ability of first-semester students at STKIP Muhammadiyah Enrekang, who had much higher post-test scores than pre-test scores. These findings show that *ELSA Speak* can support and improve students' pronunciation skills. Other research by Kholis (2021) It also confirms that the app contributes to improving students' English pronunciation skill, with the average pronunciation score increasing over several teaching cycles. The instant feedback feature in this app allows students to achieve more precise pronunciation, making it an effective tool in the learning process. Furthermore, research by Akhmad & Munawir (2022) using *ELSA Speak* can also improve students' pronunciation skills, with the average score of the pronunciation test significantly improved. Students responded positively to the app, with 82% rating their learning experience as "good." These results confirm that *ELSA Speak* is efficacious in improving pronunciation skills and increasing student motivation.

Research Karim et al. (2023) This application can improve students' speaking skill, with a 17% increase in test scores from pre-test to post-test. Additionally, 90% of students reported feeling more confident speaking English after using the app, demonstrating positive impact of *ELSA Speak* on confidence of the students. The researcher's results show that *ELSA Speak* is an effective tool for improving students' English skills, especially pronunciation and speaking.

METHOD

A Systematic literature review with narrative synthesis technique used as research design research. The process includes defining the research question, implementing a search strategy, collecting data, assessing quality, and analyzing the results (Turk, 2021). Research conducted on an online scientific database *Publish or Perish 8 (#PoP)* used to find articles with data sources; *Scopus*, *Semantic Scholars* and *Google Scholar*. The criteria for the article are to have an experiment and control design study, published within the last ten years (2015-2025), in English, and published globally. The keywords used to search for articles by collecting each component and combining it with Boolean Operators were: ***ELSA Speak OR English Learning App AND Speaking Skill OR Oral Proficiency AND EFL Students OR English Learners***. Then, the search hail is reported in the PRISMA flow diagram. Based on the results of the screening through the *PRISMA* Flow diagram, a quality check will be carried out based on the risk of bias using *Risk of bias in non-randomized studies of Intervention (ROBINS-I)*. Furthermore, the study included is described in its characteristics through data extraction presents based on citation and article title, study design, country, number of samples, educational level, data unit (pre and post-test mean score), and results of the study. Next is the presentation of the results discussed in narrative synthesis based on the guidance of the *Centre for Reviews and Dissemination (CRD)* Framework. This framework is divided into four main stages (developing theory, preliminary synthesis, exploring relationship, and assessing the synthesis) that are interrelated and form a logical flow in the implementation of qualitative synthesis.

RESULTS AND DISCUSSION

The results of article filtering through *Publish or Perish 8* are presented through a *PRISMA* flow diagram consisting of three stages: identification, screening, and inclusion.

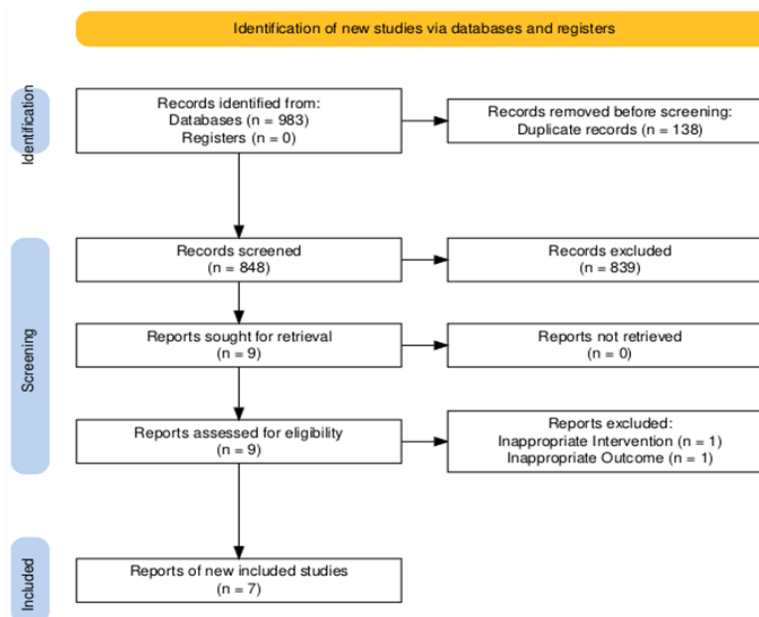


Figure 1. PRISMA flow diagram results report

First, at the identification stage, the initial search process was carried out through the PoP database with *Scopus*, *Semantics Scholar*, and *Google Scholar* sources with a total of 983 records successfully identified from the database source. Then, as many as 138 records were deleted because they were duplicate records, leaving 848 records that were eligible for further screening.

Furthermore, at the screening stage, 848 recordings were screened based on titles and abstracts. From this process, a total of 839 records were excluded because they did not meet the predetermined inclusion criteria. Thus, only 9 reports were considered relevant enough to search for the full text for further assessment. At this stage, no reports fail to be obtained or cannot be accessed, so all (n=9) are successfully obtained for the next process.

The nine reports that have been obtained are then assessed for eligibility based on the inclusion and exclusion criteria that have been set in the systematic review protocol. The results of the assessment showed that two reports had to be issued: one report because the intervention used was inappropriate (inappropriate intervention), and the other because the reported outcome was not relevant to the focus of the study (inappropriate outcome).

Finally, after going through all the stages of selection, a total of seven reports (n = 7) met all the inclusion criteria and were declared worthy of inclusion in this systematic review. The studies are then further analyzed to obtain an in-depth and relevant synthesis of evidence according to the research objectives. The study selection process in this systematic review aims to ensure transparency and accuracy in the selection of data sources that can prove the validity and credibility of the research findings.

Based on the screening results reported through the *PRISMA* flow diagram, seven included studies were assessed for quality with risk bias assessment using *ROBINS-I*.

		Risk of bias domains						
		D1	D2	D3	D4	D5	D6	D7
Study	Alwin et al. (2024)	-	+	×	-	+	-	+
	Aswaty & Indari (2022)	-	+	-	+	+	-	+
	Huda & Rahmawati (2024)	-	+	×	-	+	-	+
	Martom (2022)	-	+	-	+	+	-	+
	Nguyen & Tuyen (2024)	-	+	-	+	+	-	+
	Putri et al. (2024)	-	+	×	-	+	-	+
	Rizqa Putri et al. (2024)	-	+	-	-	+	-	+
		Domains:						
		D1: Bias due to confounding.						
		D2: Bias due to selection of participants.						
		D3: Bias in classification of interventions.						
		D4: Bias due to deviations from intended interventions.						
		D5: Bias due to missing data.						
		D6: Bias in measurement of outcomes.						
		D7: Bias in selection of the reported result.						
		Judgement						
		× Serious						
		- Moderate						
		+ Low						

Figure 2. ROBINS-I assessment results

The seven studies analyzed, four studies (Aswaty & Indari, 2022; Martom et al., 2022; Nguyen & Tuyen, 2024; Rizqa Putri et al., 2024) were categorized as having a moderate overall risk of bias, while the other three studies (Alwin et al., 2024; Huda & Rahmawati, 2024; Putri et al., 2024) were categorized as having a serious overall risk of bias. This suggests that while there is a consistent tendency for study results to demonstrate the effectiveness of *ELSA Speak*.

Moreover, here are the extraction data from seven included studies that are eligible to meet the eligibility criteria.

Table 1. Study Included Data Extraction

No.	Citation & Tittle	Study Design	Country	Number of Samples	Educational Level	Analysis Technique	Data Units (Pre-Test Mean)		Data Units (Post-Test Mean)		Result of the Study
							Intv.	Comp.	Intv.	Comp.	
1.	(Alwin et al., 2024)	Quasi-Experimental	Indonesia	57	Junior High School	SPSS 22	49.07	44.22	82.53	59.22	Increased
	The Use of English Language Speech Assistant (ELSA) Speak Application to Improve Pronunciation										
2.	(Aswaty & Indari, 2022)	True Experimental	Indonesia	40	Senior High School	SPSS 23	37.25	38.25	81.5	72.25	Increased
	The Effect Of Using Elsa (English Language Speech Assistant) Speak Application On Students' Speaking Ability For The Eleventh Grade Of Mas Darul Al Muhajirin In The Academic Year 2021/2022										
3.	(Huda & Rahmawati, 2024)	Quasi-Experimental	Indonesia	18	Senior High School	SPSS 20 & ANCOVA	-	-	82.778	75.278	Increased
	The Effectiveness of <i>ELSA Speak</i> Role Playing to Teach Speaking on Report Texts										
4.	(Martom et al., 2022)	Quasi-Experimental	Indonesia	60	Senior High School	SPSS	46.03	-	76.46	63.39	Increased
	The Effect Of Using <i>ELSA Speak</i> Application For Students' Pronunciation At Smk Kesehatan Of Kapuas Raya Sintang										
5.	(Nguyen & Tuyen, 2024)	Experimental and Questionnaire	Vietnam	50	University	SPSS	2.88	3.56	5.480	4.640	Increased
	The Effects of Using " <i>ELSA Speak</i> app" on the Enhancement of College Students' English-Speaking										
6.	(Putri et al., 2024)	Quasi-Experimental	Indonesia	54	Junior High School	SPSS 22	59.07	56.67	74.81	70.78	Increased
	The effect of <i>ELSA Speak</i> Application Towards Students' Speaking Skill at the Eighth Grade of SMPN 4 Cijaku Lebak-Banten in the										

No.	Citation & Tittle	Study Design	Country	Number of Samples	Educational Level	Analysis Technique	Data Units (Pre-Test Mean)		Data Units (Post-Test Mean)		Result of the Study
							Intv.	Comp.	Intv.	Comp.	
Academic Year 2023/2024											
(Rizqa Putri et al., 2024)											
7.	<i>ELSA Speak</i> as Mobile Assisted Language Learning To Improve Students' Sneaking Skill	Quasi-Experimental	Indonesia	60	Senior High School	SPSS	40.17	37.80	76.93	64.267	Increased

Seven included studies met the experimental design and control study criteria with details of 5 out of 7 Quasi-Experimental studies (71.4%), 1 with True Experiment (14.3%), and 1 Experiment with combining Questionnaire (14.3%). 6 out of 7 studies came from Indonesia (85.7%) and 1 study came from Vietnam (14.3%). Then, all studies consist of varying levels of education. 4 studies consisted of Senior High School (57.1%), 2 studies consisted of Junior High School (28.6%), and 1 study consisted of University (14.3%). All studies used analysis techniques with SPSS with various versions. 3 studies generally mentioned SPSS (42.9%), 2 studies used SPSS 22 (28.6%), 1 study used SPSS 23 (14.3%), and 1 study involved SPSS 20 & ANCOVA (14.3%). All studies used Data Units in the form of pre and post-test scores. 6 out of 7 studies (85.7%) used a Likert scale assessment of 10-100 and 1 study with a likert scale of 1-10 (14.3%). In the pre-test experiment group, 6 studies (85.7%) reported scores, and 1 study (14.3%) did not. Meanwhile, in the pre-test control group, 5 studies (71.4%) reported scores and 2 studies (28.6%) did not. In the post-test of both the experimental and control groups, all studies reported in full. From the results of the study, all studies showed increased results.

Quantitative data from all seven studies showed that the use of *ELSA Speak* had a positive and significant impact on students' speaking skills. The average post-test score of the experimental group was consistently higher than that of the control group. For example, in the study by Huda & Rahmawati (2024), the group that used *ELSA Speak* with the role-play method obtained an average score of 82.78, while the control group only reached 75.28. Likewise, in the study Martom et al. (2022), the difference in post-intervention scores between the experimental (76.46) and control groups (63.96) reached almost 13 points, with an effect size value of 0.58 which was classified as a medium category. Even in the context of basic education, such as SMPN 4 Cijaku (Putri et al., 2024), the experimental group showed an average score of 74.81 compared to 70.78 in the control group, although both showed improvement. Findings from Nguyen & Tuyen (2024) also reinforce this pattern, where the student experiment group experienced a significant increase from an average of 2.88 to 5.48 on a 10-point scale. These results indicate that *ELSA Speak* makes a significant contribution to the acquisition of oral competence, both in micro (pronunciation) and macro (fluency, structure, and fluency) aspects.

Not only does it have an impact on quantitative results, several studies also provide insight into the qualitative and affective aspects of using *ELSA Speak*. A study by Nguyen & Tuyen (2024), which incorporated an attitude questionnaire, found that the majority of college students showed positive attitudes towards these apps in three dimensions: cognitive, affective, and behavioral. Most participants stated that *ELSA Speak* increased learning motivation, helped develop independent learning habits, and increased comfort when speaking English. These findings are in parallel with the report of Karim et al. (2023) which noted that 90% of students feel more confident after using the app. In the cognitive realm, students experience progress in the mastery of contextual vocabulary and clarity of articulation, while affectively, anxiety about speaking is reduced because the interaction takes place in a private space and without social pressure. This indicates

that *ELSA Speak* is not only a pronunciation exercise tool, but also a platform that forms an emotionally supportive learning climate.

Further analysis showed that there was a variation in the impact of *ELSA Speak* based on the level of education and the method of implementation. The greatest effectiveness is seen in vocational and junior high school students, where contextual oral learning is needed but often not supported by conventional technology facilities. The study of Huda & Rahmawati (2024) stands out for using a role-playing approach combined with *ELSA Speak*, enabling integration between natural communication practices and AI-based pronunciation training. This shows that the effectiveness of *ELSA Speak* increases when it is not only used as an individual exercise tool, but also as a support for interactive activities in the classroom. In contrast, at the college level, the improvement remains significant but tends to be more stable, perhaps because students have a stronger linguistic foundation so the impact of the intervention is more linear. On the other hand, the study by Putri et al. (2024) also confirms that *ELSA Speak* is superior to other learning applications such as Cake, even though both are technology-based. This confirms that the success of *ELSA Speak* lies not only in digitization but in the integration of AI features, curriculum personalization, and real-time performance-based evaluation.

An exploration of the relationship between studies shows that the effectiveness of *ELSA Speak* is not uniform in all contexts, but is influenced by the characteristics of the learners, the learning design, and the evaluation instruments used. In general, the increase in post-test scores was seen more prominently in studies involving students at the vocational and junior high school levels. This is most likely due to the need for practical oral learning at this level, where the practice-based communication approach becomes more relevant than the theoretical approach. The studies of Martom et al. (2022) and Huda & Rahmawati (2024), conducted on vocational school students, showed a significant score improvement effect, especially when *ELSA Speak* was combined with active strategies such as role-play. This combination maximizes the app's role not only as a phonetic training tool, but also as a supporter of authentic communication in classroom activities. Meanwhile, the effectiveness in students (Nguyen & Tuyen, 2024) has also been shown to be positive, but with a more linear character of improvement. This is related to a more mature linguistic foundation in participants in college, so that the use of *ELSA Speak* focuses more on strengthening articulation, fluency, and grammatical refinement. In addition, studies at higher levels tend to use more structured evaluation instruments, such as five-band speaking rubrics and attitude validation questionnaires, which provide a more in-depth picture of the process of skill change. Thus, the effectiveness of *ELSA Speak* is not only influenced by the existence of the application itself, but also by the suitability between the context, strategy, and evaluation system used.

The assessment of the strength of the synthesis was carried out by considering the number of inclusion studies, the consistency of the results, the depth of the methodology, and the risk of bias in data reporting and interpretation. Involving seven studies in the period 2022–2024, this synthesis has a sufficiently representative scope to answer research questions comprehensively, especially in the context of Southeast Asia. The consistency of the findings was a major strength: all studies showed that the use of *ELSA Speak* provided a significant improvement in speaking skills compared to the control group. No studies were found showing negative or insignificant effects, which reinforces the conclusion that *ELSA Speak* is an effective tool in general. Nevertheless, methodological quality is not completely uniform. Some studies did not mention randomization techniques or control of outside variables, which opened up the possibility of selection bias or disruptive variables. In addition, most studies only reported p-values without calculating effect size or advanced covariate analysis. Only two studies (Martom et al., 2022; Nguyen & Tuyen, 2024) which presents quantitative indicators such as Cohen's d or partial eta squared, which are important for assessing the strength of effects more precisely. On the other hand, not all studies describe the duration of use of the app in detail, so

the interpretation of the sustainability impact is still limited. Another limitation is the absence of exploration for students with special needs or with limited access to technology, which is important to answer generalizations more broadly. Nevertheless, critical reflection on these potential biases and weaknesses actually strengthens the maturity of the synthesis. Methodological imperfections do not diminish the weight of key findings, but they do mark the importance of more standardized, longitudinal, and inclusive follow-up research. Therefore, this synthesis is considered to have moderate to high validity strength, with limitations that can be overcome through further research approaches that are more rigorous and exploratory.

CONCLUSIONS AND RECOMMENDATION

Based on the results of a systematic review of seven inclusion studies that discussed the use of the *ELSA Speak* application, it can be concluded that *ELSA Speak* has a significant and consistent influence on various aspects of speaking ability. This application has been proven to be effective in improving pronunciation, fluency in speaking, grammatical structure, vocabulary mastery, and students' confidence in conveying ideas orally in English. This effectiveness was evident in the increase in post-test scores of the experimental group that used *ELSA Speak* compared to the control group that did not use the app. The narrative synthesis also shows that the positive impact of *ELSA Speak* can be found at various levels of education, ranging from junior high school, high school, vocational school, to college students. The effect is even more optimal when combined with active learning approaches such as role playing, which encourages students to apply application features in the context of real communication. In addition, studies that combine quantitative and qualitative approaches also show that students respond to the use of *ELSA Speak* with a positive attitude, both cognitive, affective, and behavioral. This indicates that *ELSA Speak* not only has an impact on improving linguistic competence, but also on students' motivation and independent learning habits. These positive effects are consistent across different educational levels and learning approaches, reinforcing the role of *ELSA Speak* as an effective technology-based learning tool in the context of English as a foreign language. Teachers are advised to integrate *ELSA Speak* with active methods such as role-playing. Students should use the app independently to improve their speaking skills and confidence. Researchers can further explore the long-term impact of *ELSA Speak* in collaborative learning and diverse cultural contexts.

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