

THE EFFECTIVENESS OF ELSA SPEAK APPLICATION ON STUDENTS' SPEAKING SKILLS AT 8TH GRADE OF SMP ISLAM PARISKIAN SERANG

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ABSTRACT

This research is motivated by the low English speaking ability of students caused by lack of confidence, limited vocabulary, and minimal speaking practice. This study aims to determine the effectiveness of using the ELSA Speak application on the speaking ability of eighth-grade students of Pariskian Islamic Middle School, Serang City. This study uses a quantitative approach with a quasi-experimental design. The study population was all eighth-grade students, while the sample consisted of two classes selected using a purposive sampling technique, namely the experimental class and the control class. The research instrument was a speaking test that covered aspects of pronunciation, fluency, vocabulary, and grammar. Data analysis techniques used normality tests, homogeneity tests, and hypothesis tests using the Mann-Whitney U Test and Wilcoxon Signed Rank Test through SPSS 26. The results of the study showed a significant increase in students' speaking ability in the experimental class compared to the control class. The use of ELSA Speak has proven to be more effective in improving speaking ability, especially in the aspects of pronunciation and student confidence. In conclusion, the ELSA Speak application is effective for use as a technology-based learning medium to improve students' English speaking skills.

Keyword: Artificial Intelligence, English Speaking Skills, ELSA Speak Application, Mobile Assisted Language Learning, Quasi-Experimental Design

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INTRODUCTION

Speaking is a key skill in English learning because it allows students to effectively convey ideas, opinions, and information. However, mastering speaking remains a challenge for many EFL learners, requiring both linguistic mastery and continuous practice. With technological advancements, the use of mobile-based learning applications is increasingly being utilized to support speaking skill improvement through self-directed learning and faster feedback (Putri et al., 2024; Rajendran & Yunus, 2021).

The development of artificial intelligence (AI) has also brought innovation to language learning, one example being the ELSA Speak application. This application provides speech

recognition and direct feedback on students' pronunciation, helping to improve pronunciation, fluency, and confidence in communicating in English (Karim et al., 2023; Permatasari & Lubis, 2024).

Despite this, many students still experience difficulties speaking English. Low self-confidence, fear of making mistakes, limited vocabulary, and inadequate mastery of grammar and pronunciation often hinder oral communication. These conditions result in students being less active in speaking activities and having limited opportunities to practice (Hastomo et al., 2024; Khairita Martiya Nurni et al., 2023).

Similar problems were also found among eighth-grade students at Pariskian Islamic Middle School in Serang City. According to English teachers, many students are still hesitant to speak English due to fear of mispronunciation and a lack of confidence. Furthermore, opportunities to practice speaking outside of class are limited, and the learning media used are less interactive, thus suboptimal student motivation to practice speaking (Sari et al., 2023; Putri et al., 2024).

Based on these conditions, this study aims to analyze the effectiveness of the ELSA Speak application in improving the speaking skills of eighth-grade students at Pariskian Islamic Middle School in Serang City. This research is important because the use of AI-based applications in speaking learning at the junior high school level is still relatively limited. The novelty of this study lies in testing the use of ELSA Speak as an AI-based learning medium to improve junior high school students' speaking skills through interactive and extensive speaking activities in the context of English learning (Permatasari & Lubis, 2024; Indrayani et al., 2025).

METHOD

This study used a quantitative approach with a quasi-experimental design to test the effectiveness of the ELSA Speak application on the English speaking skills of eighth-grade students at Pariskian Islamic Middle School in Serang City. The research design involved an experimental group using ELSA Speak and a control group following conventional learning. Measurements were conducted through pre-tests and post-tests to determine changes in students' speaking skills after the treatment was administered (Creswell & Creswell, 2023; Sugiyono, 2022).

The use of ELSA Speak as the independent variable is based on its ability to provide automatic feedback on student pronunciation through Artificial Intelligence (AI) technology. Student speaking ability, as the dependent variable, is measured through pronunciation, fluency, vocabulary, and grammar, which are the main components of English speaking skills (Brown, 2004; Karim et al., 2023).

The population of this study was all eighth-grade students of Pariskian Islamic Middle School, Serang City, in the 2025/2026 academic year. The research sample was determined using a purposive sampling technique by selecting two classes with relatively similar English language ability characteristics: one class as the experimental group and one class as the control group (Sugiyono, 2022; Arikunto, 2020).

Students participating in the study sample must meet certain criteria, such as being actively enrolled in eighth grade, obtaining permission from a parent or guardian, maintaining good attendance, and having access to devices that support the ELSA Speak application. The selection of pre-formed classes aligns with the characteristics of quasi-experimental research in an educational context (Creswell & Creswell, 2023; Kang, 2021).

The research instrument consisted of a speaking test, which required students to verbally describe family members, administered during the pre- and post-test. Assessment was conducted using a speaking rubric covering pronunciation, grammar, vocabulary, and fluency. The instrument's validity was aligned with the English language learning outcomes of junior high school students, while

reliability was maintained through the use of the same assessment rubric for all study participants (Brown, 2004; Brown, 2007).

The research data were analyzed using SPSS version 26. The analysis began with descriptive statistics to determine the average value and distribution of the data, then continued with the Shapiro-Wilk normality test and Levene's Test homogeneity test. Because the data were not normally distributed, hypothesis testing was carried out using the Wilcoxon Signed Rank Test to compare pre-test and post-test scores in the same group and the Mann-Whitney U Test to compare post-test results between the experimental and control groups (McKnight & Najab, 2010; Gosselin, 2024).

The research was conducted in three stages: pre-test, treatment, and post-test. In the pre-test, both groups were given a speaking test to determine the students' initial abilities before treatment. The pre-test results were used as a basis for comparing the development of speaking skills after the research was completed (Brown, 2004; Creswell & Creswell, 2023).

In the treatment phase, the experimental group participated in learning using the ELSA Speak application, which provides AI-based pronunciation and speaking exercises, while the control group participated in conventional speaking lessons. After all treatments were completed, both groups took a post-test with a difficulty level equivalent to the pre-test to measure students' speaking ability improvement. The results were then analyzed to determine the effectiveness of ELSA Speak in improving students' English speaking skills (Putri et al., 2024; Permatasari & Lubis, 2024).

RESULTS AND DISCUSSION

Pre-Test Experimental Class

Table 1 Frequency Table of Pre-Test (Experiment Class)
Pretest

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	40	1	3.8	3.8	3.8
	60	11	42.3	42.3	46.2
	65	8	30.8	30.8	76.9
	70	3	11.5	11.5	88.5
	75	1	3.8	3.8	92.3
	80	1	3.8	3.8	96.2
	85	1	3.8	3.8	100.0
	Total	26	100.0	100.0	

The pre-test results of the experimental class showed scores ranging from 40 to 85. The most frequently obtained score was 60, achieved by 11 students (42.3%), followed by a score of 70 obtained by 8 students (30.8%). These findings indicate that students' pronunciation abilities were still relatively low before the implementation of the ELSA Speak application.

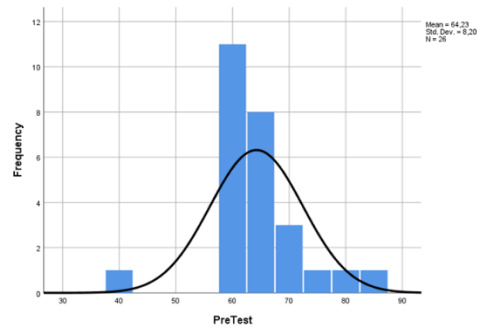


Figure 1 Pre-Test Histogram (Experimental Class)

Post-Test Experimental Class

Table 2 Frequency Table of Post-Test (Experiment Class)

Posttest

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	70	2	7.7	7.7	7.7
	75	5	19.2	19.2	26.9
	80	12	46.2	46.2	73.1
	85	5	19.2	19.2	92.3
	90	2	7.7	7.7	100.0
	Total	26	100.0	100.0	

The post-test results of the experimental class showed an improvement in students' speaking performance, with scores ranging from 70 to 90. The most frequently obtained score was 80, achieved by 12 students (46.2%), while scores of 75 and 85 were each obtained by 5 students (19.2%). Overall, the students' scores increased by 24.55% compared to the pre-test, indicating a positive effect of the ELSA Speak application on students' speaking ability.

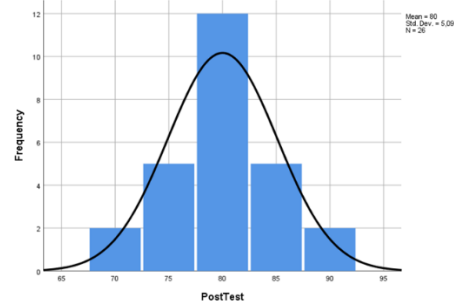


Figure 2 Post-Test Histogram (Experimental Class)

Pre-Test Control Class

Table 3 Frequency Table of Pre-Test (Control Class)

Pretest

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	40	1	3.7	3.7	3.7

45	1	3.7	3.7	7.4
50	5	18.5	18.5	25.9
55	5	18.5	18.5	44.4
60	3	11.1	11.1	55.6
65	1	3.7	3.7	59.3
70	4	14.8	14.8	74.1
75	1	3.7	3.7	77.8
80	2	7.4	7.4	85.2
85	2	7.4	7.4	92.6
90	2	7.4	7.4	100.0
Total	27	100.0	100.0	

The pre-test results of the control class showed that the most frequently obtained scores were 50 and 55, each achieved by 5 students (18.5%). Other scores were distributed across a smaller number of students, indicating varied levels of speaking ability before the treatment. Overall, the results reflect that students in the control class had relatively moderate speaking proficiency at the beginning of the study.

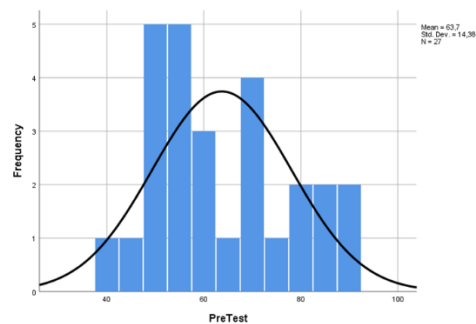


Figure 3 Pre-Test Histogram (Control Class)

Post-Test Control Class

Table 4 Frequency Table of Post-Test (Control Class)

Posttest

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	65	1	3.7	3.7	3.7
	70	5	18.5	18.5	22.2
	75	13	48.1	48.1	70.4
	80	5	18.5	18.5	88.9

85	2	7.4	7.4	96.3
95	1	3.7	3.7	100.0
Total	27	100.0	100.0	

The post-test results of the control class showed that the most frequently obtained score was 75, achieved by 13 students (48.1%). The scores of 70 and 80 were each obtained by 5 students (18.5%). Overall, the students' speaking scores increased by 12.41 points or approximately 19.48% compared to the pre-test, indicating a moderate improvement in speaking ability after the learning process.

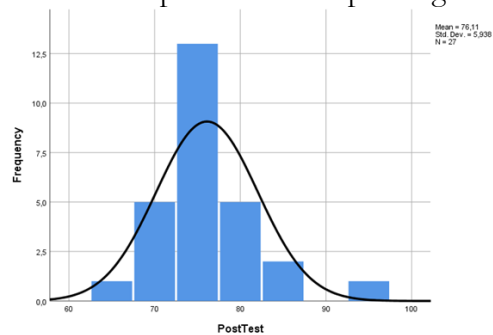


Figure 4 Post-Test Control Class
Table 5 Frequency Statistics

Statistics

		Pre-Test Experimenta l Class	Post-Test Experimenta l Class	Pre-Test Control Class	Post-Test Control Class
N	Valid	26	26	27	27
	Missing	1	1	0	0
Mean		64.23	80.00	63.70	76.11
Standard Error of	Mean	1,610	1,000	2,768	1,143
Median		65.00	80.00	60.00	75.00
Mode		60	80	50a	75
Standard Deviation		8,209	5,099	14,384	5,938
Variance		67,385	26,000	206,909	35,256
Skewness		-,027	,000	,427	1,172
Standard Error of	Skewness	,456	,456	,448	,448
Kurtosis		3,470	,084	-,918	2,981
Standard Error of	Kurtosis	,887	,887	,872	,872
Range		45	20	50	30
Minimum		40	70	40	65
Maximum		85	90	90	95
Sum		1670	2080	1720	2055

Based on Table 5, the pre-test mean scores of the control class (63.70) and experimental class (64.23) indicate that both groups had relatively similar speaking abilities before the treatment. After the intervention, the mean score of the control class increased to 76.11 (19.48%), while the experimental class increased to 80.00 (24.55%). In addition, the decrease in standard deviation in both groups suggests that students' scores became more consistent after the learning process. Overall, although both classes showed improvement, the experimental class demonstrated a greater increase in speaking performance than the control class.

Data Analysis

Table 6 The Results of the Normality Test

Tests of Normality

		Kolmogorov-Smirnova			Shapiro-Wilk		
Classes		Statistics	df	Sig.	Statistic	df	Sig.
Result	Pre-Test (Experimental)	,183	26		,026	,856	,002
	Post-Test (Experimental)	,231	26		,001	,910	,027
	Pre-Test (Control)	,172	27		,039	,933	,083
	Post-Test (Control)	,278	27		,000	,866	,002

Based on the Shapiro-Wilk normality test, only the pre-test data of the control class were normally distributed (Sig. = 0.083 > 0.05). In contrast, the pre-test and post-test data of the experimental class (Sig. = 0.002 and 0.027) and the post-test data of the control class (Sig. = 0.002) were not normally distributed because their significance values were below 0.05. Therefore, the data did not fully meet the assumption of normality, indicating that non-parametric statistical tests were appropriate for further analysis.

Table 7 The Results of Independent Samples Test (Pre-Test)

Group Statistics

Classes		N	Mean	Standard Deviation	Std. Error
Result	Pre-Test (Experimental Class)	26	64.23	8,209	1,610
	Pre-Test (Control Class)	27	63.70	14,384	2,768

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Standard Error Difference	95% Confidence Interval of the Difference	
Result	Equal variances assumed	14,068	,000	,163	51	,871	,527	3,234	-5,965	7,019
	Equal variances not assumed			,166	11,610	,870	,527	3,202	-5,937	6,991

Based on Levene's Test, the pre-test data were not homogeneous because the significance value was 0.000, which was lower than 0.05. However, the t-test for Equality of Means showed a

significant value of 0.871 (> 0.05), indicating no significant difference between the pre-test scores of the experimental and control classes. Therefore, both groups had relatively equivalent initial speaking abilities before the treatment was administered.

Table 8 The Results of Independent Samples Test (Post-Test)
Group Statistics

Classes	N	Mean	Standard Deviation	Std. Error Mean
Result	Post-Test (Experimental)	26	80.00	5,099
t	Post-Test (Control)	27	76.11	5,938

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Standard Error Difference	95% Confidence Interval of the Difference	
Result	Equal variances assumed	,414	,523	2,554	51	,014	3,889	1,523	,832	6,946
t	Equal variances not assumed			2,561	50,357	,013	3,889	1,518	,839	6,938

Based on Levene's Test, the post-test data were homogeneous because the significance value was 0.523, which was higher than 0.05. Furthermore, the t-test for Equality of Means produced a significant value of 0.014 (< 0.05), indicating a significant difference between the post-test scores of the experimental and control classes. The higher mean score of the experimental class (80.00) compared to the control class (76.11) suggests that the use of the ELSA Speak application had a positive effect on students' speaking achievement.

Table 9 Mann-Whitney U Test

Ranks

Class	N	Mean Rank	Sum of Ranks
Results	1	26	32.90
	2	27	21.31
Total	53		

Based on the Mann-Whitney U test results, the Asymp. Sig. (2-tailed) value was 0.004, which was lower than 0.05. This finding indicates a significant difference between the experimental and control classes. Therefore, the alternative hypothesis (H_a) was accepted and the null hypothesis (H_0)

was rejected, suggesting that the use of the ELSA Speak application had a significant effect on students' speaking ability.

Table 10 Wilcoxon Signed Rank Test of Experimental Class Ranks

		N	Mean Rank	Sum of Ranks
Posttest - Pretest	Negative Ranks	0a	,00	,00
	Positive Ranks	24b	12.50	300.00
	Ties	2c		
	Total	26		

a. Posttest < Pretest

b. Posttest > Pretest

c. PostTest = PreTest

Based on the Wilcoxon Signed Ranks Test, the Asymp. Sig. (2-tailed) value was 0.000, which was lower than 0.05. This result indicates a significant difference between the pre-test and post-test scores of the experimental class. The findings show that students' speaking skills improved significantly after the implementation of the ELSA Speak application, confirming the effectiveness of the treatment in enhancing speaking performance.

Table 11 Wilcoxon Signed Rank Test of Control Class Ranks

		N	Mean Rank	Sum of Ranks
Posttest - Pretest	Negative Ranks	5a	5.30	26.50
	Positive Ranks	17b	13.32	226.50
	Ties	5c		
	Total	27		

a. Posttest < Pretest

b. Posttest > Pretest

c. PostTest = PreTest

Based on the Wilcoxon Signed Ranks Test, the control class obtained an Asymp. Sig. (2-tailed) value of 0.001, which was lower than 0.05, indicating a significant difference between the pre-test and post-test scores. Although the control class also showed improvement in speaking ability, the increase was lower compared to the experimental class. This suggests that conventional learning also contributed to students' progress, but less effectively than the ELSA Speak intervention (Gibbons & Chakraborti, 2011).

Research Discussion

The findings of this study revealed that the use of the ELSA Speak application significantly improved students' speaking skills at the eighth grade of SMP Islam Pariskian Kota Serang. Based on the results of the pre-test and post-test, the experimental class showed greater improvement compared

to the control class after receiving treatment using the ELSA Speak application. The improvement could be seen in several aspects of speaking skills, particularly pronunciation, fluency, and speaking confidence.

Before the treatment was conducted, the students in the experimental class still experienced difficulties in speaking English. Most students lacked confidence and were afraid of making pronunciation mistakes during speaking activities. In addition, students tend to hesitate while speaking because they have limited vocabulary mastery and low speaking fluency. These conditions were reflected in the pre-test results, where most students obtained relatively low scores. However, after the implementation of ELSA Speak during the learning process, the students gradually showed improvement in their speaking performance. According to Karim et al., (2023) the students become more active, confident, and motivated to practice speaking English both inside and outside the classroom. The findings of this research demonstrated that technology-assisted language learning positively influenced students' speaking achievement. The ELSA Speak application provides students with opportunities to practice speaking independently through Artificial Intelligence (AI)-based pronunciation correction. Students received immediate feedback regarding pronunciation accuracy, intonation, and stress patterns.

Permatasari & Lubis (2024) stated this feature helped students identify their pronunciation mistakes directly and improve them through repeated practice. As a result, students became more aware of correct pronunciation and were able to produce English utterances more accurately.

The statistical analysis also supported the effectiveness of the application. Based on the Mann–Whitney U Test, the significance value was 0.004, which was lower than 0.05. This result indicated that there was a significant difference between the experimental class and the control class after the treatment was applied. In addition, the Wilcoxon Signed Ranks Test in the experimental class showed a significance value of 0.000, indicating significant improvement between the pre-test and post-test scores. Meanwhile, the control class also experienced improvement, but the increase was lower compared to the experimental class. Therefore, it can be concluded that the ELSA Speak application significantly improved students' speaking skills.

The findings of this study are in line with previous research conducted by (Kholis, 2021), who found that the ELSA Speak application effectively improved students' English pronunciation skills through Automatic Speech Recognition (ASR) technology. The study explained that students became more motivated and confident because the application provided direct pronunciation feedback and allowed learners to practice independently. Similar to the findings of the present study, students who used ELSA Speak showed improvement in pronunciation accuracy and speaking fluency after several weeks of practice.

Furthermore, the findings are also supported by (Vančová, 2023), who stated that AI-powered pronunciation tools positively affect learners' speaking performance. Their study explained that Artificial Intelligence technology enables students to receive personalized learning experiences and immediate pronunciation correction. As a result, learners become more engaged in speaking practice and demonstrate better speaking achievement compared to conventional learning methods. In this research, students in the experimental class also showed higher enthusiasm and participation during speaking activities because they could practice speaking repeatedly using the application (Claudia Puti, 2024).

In addition, (Nguyen et al., 2025) found that AI-powered voice recognition technology significantly supported pronunciation competence among EFL learners. The study revealed that voice-recognition applications help students improve speaking fluency and pronunciation accuracy through continuous practice and direct corrective feedback. This finding is relevant to the current

study because the students in the experimental class became more fluent and confident after using ELSA Speak.

According to (Mardiah & Saadillah, 2025) the application encouraged students to practice speaking more frequently without fear of making mistakes. Another important finding of this research was related to students' confidence in speaking English. Before the treatment, many students were reluctant to speak because they were afraid of being laughed at by their classmates when making pronunciation mistakes.

However, after using ELSA Speak, students appeared more comfortable and confident during speaking activities. The application created a supportive learning environment because students could practice individually before performing in front of the class. As a result, students become more motivated to participate actively in classroom speaking activities (Syabina & Rahman Hz, 2024). Moreover, the use of ELSA Speak also creates a more interactive and enjoyable learning atmosphere. Conventional speaking activities often make students feel bored because the learning process mainly relies on textbooks and teacher explanations. In contrast, ELSA Speak provided interactive speaking exercises that attracted students' attention and encouraged them to practice more actively. The students showed positive responses toward the use of technology in English learning because the application was easy to access through their smartphones and could be used anytime and anywhere (Nabila et al., nd).

The findings of this study also support the concept of mobile-assisted language learning (MALL), which emphasizes that mobile technology can facilitate flexible and autonomous learning experiences. (Gusrianto & Iswahyuni, 2025) through ELSA Speak, students were able to practice English speaking independently outside classroom hours. This flexibility increased students' learning intensity and speaking exposure, which ultimately improved their speaking performance. Students who practiced more frequently using the application tended to achieve better speaking scores in the post-test.

In addition, the improvement in students' speaking ability can also be associated with the role of repeated practice in language learning. The ELSA Speak application allows students to repeat pronunciation exercises continuously until they achieve better accuracy. Repetition is considered important in language acquisition because it helps learners internalize correct pronunciation patterns and improve fluency gradually. Therefore, students who actively used the application demonstrated more significant improvement compared to those who only relied on classroom instruction. Based on the discussion above, it can be concluded that the ELSA Speak application was effective in improving students' speaking skills at SMP Islam Pariskian Kota Serang. The application significantly enhanced students' pronunciation, fluency, and confidence in speaking English. Furthermore, the integration of AI technology and mobile learning created a more interactive, flexible, and enjoyable learning environment for students. Therefore, ELSA Speak can be considered an effective instructional media for teaching speaking skills in English language learning, especially for junior high school students.

CONCLUSION

Based on the research results, it can be concluded that the use of the ELSA Speak application is effective in improving the speaking skills of eighth-grade students of Pariskian Islamic Middle School, Serang City. This is proven through the results of statistical tests that show a significant difference between the experimental class and the control class, both in the Mann-Whitney U test and the Wilcoxon Signed Rank Test. The increase in the average score in the experimental class which is higher than the control class indicates that the use of ELSA Speak has a positive impact, especially on

aspects of pronunciation, fluency, and students' confidence in speaking English. In addition, students who use the application show more active participation and better speaking skills after the learning process compared to before the treatment is given.

However, this study has several limitations, such as the relatively limited sample size of two classes in one school, so the results cannot be widely generalized. Furthermore, the duration of application use was also limited, so it does not fully describe the long-term impact on improving students' speaking skills. Based on these limitations, further research is recommended to involve a larger sample, a longer intervention period, and integrate other variables such as learning motivation and learning strategies to obtain more comprehensive results. Practically, the results of this study provide implications that English teachers can utilize AI-based applications such as ELSA Speak as an alternative learning medium to improve students' speaking skills, especially in technology-based learning that is more interactive and independent.

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