



## TEACHING SPEAKING BY USING 'ELSA AI' TO THE EIGHTH GRADE STUDENTS OF SMP NEGERI 42 PALEMBANG

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### ABSTRACT

This study investigates the effectiveness of the ELSA Speak application in enhancing English speaking skills among eighth-grade students at SMP Negeri 42 Palembang. Employing a quantitative method with a quasi-experimental design (one-group pre-test and post-test design), the research involved 34 students. The instruments used included a pre-test, treatment, and post-test. The results indicate that using ELSA Speak effectively improves English pronunciation skills compared to traditional learning methods. The average pre-test score of the students was 64.9118, which increased to 85.5882 in the post-test, showing an improvement of 31.82%. Hypothesis testing revealed a significance value of 0.000, indicating a significant effect of using ELSA Speak on students' performance improvement. The Cohen's Kappa value of 0.809 demonstrates excellent inter-rater reliability, which positively supports the validity of the obtained results. Future research should examine the long-term effects of ELSA Speak on fluency and confidence, compare it with other language learning tools, and involve larger, more diverse samples for broader insights.

**Keywords:** *Teaching, Speaking, ELSA AI*

## 1. INTRODUCTION

Speaking is a critical component of English proficiency, enabling individuals to express ideas, thoughts, and emotions in real time. As such, it plays a central role in developing communicative competence. According to Harmer (2001), speaking is "the ability to express oneself in a conversation" and requires learners to use their knowledge of grammar, vocabulary, and pronunciation in a fluid and spontaneous manner. However, despite its importance, many students encounter difficulties in acquiring speaking skills. Challenges such as shyness, a limited vocabulary, low participation, and a tendency to revert to their native language can significantly hinder their progress. Dornyei (2001) also notes that "language learners often face psychological barriers, including anxiety

and low self-confidence, which contribute to their reluctance to speak".

Field observations conducted during practice at SMP Negeri 42 Palembang revealed that students struggled with speaking due to a lack of self-confidence, insufficient vocabulary, and unengaging, traditional teaching methods. As a result, many students were reluctant to participate in class discussions and were not given sufficient opportunities to practice speaking English in meaningful contexts. According to Brown (2000), "traditional language instruction often neglects speaking practice, focusing primarily on written exercises and grammar rules, which can leave learners unprepared to use the language in real-world situations."

To address these issues, the use of AI-powered tools such as the ELSA Speak

application has been proposed as an innovative solution to enhance speaking skills. The ELSA Speak app leverages Artificial Intelligence (AI) to provide personalized learning experiences. According to Chapelle (2001), Wahyuni et al. (2019) and Khanh (2021), "Technology-enhanced language learning tools can offer learners immediate feedback, promote self-directed learning, and help address individual learning needs." ELSA Speak, specifically, provides voice recognition technology that offers real-time feedback on students' pronunciation, intonation, and vocabulary usage, helping to correct mistakes and refine their speaking skills.

This research aims to assess the effectiveness of ELSA Speak in improving the speaking abilities of 8th-grade students at SMP Negeri 42 Palembang. The theme "Plan a Holiday" was chosen to engage students in a relevant and creative task that would encourage them to use English spontaneously. As Spratt et al. (2011) state, "Task-based activities like planning a holiday provide real-life scenarios that require learners to use language in context, making learning both meaningful and enjoyable." In this task, students will speak for 3 to 7 minutes about their holiday plans, practicing key language elements such as vocabulary, pronunciation, and sentence structure.

By focusing on practical, real-world topics like planning a holiday, the study aims to help students build their speaking fluency in a fun and interactive way. ELSA Speak's real-time feedback on pronunciation and vocabulary is designed to boost students' confidence in their ability to speak English. In addition, the app's interactive exercises are aligned with the principles of communicative language teaching, which emphasizes the importance of interaction and fluency in language learning (Richards & Rodgers, 2014; Sujiati et al. 2023; Dash, 2022).

This research is expected to benefit a range of stakeholders. For teachers, the study will demonstrate the potential of AI-based language learning tools in improving speaking skills, allowing educators to integrate technology into their teaching methods. As Warschauer & Meskill (2000) notes, "Technology can act as a powerful catalyst for improving both teaching and learning by providing innovative and

engaging ways to practice language skills." For students, the use of ELSA Speak offers a platform to improve their speaking skills in a low-pressure environment, encouraging greater participation and language use. As Nunan (2005) suggests, "Learners are more likely to engage with learning activities when they feel confident and supported."

Furthermore, schools will benefit from the integration of technology that resonates with the needs of today's digital-native students. Researchers will gain insight into the potential of AI-driven applications in enhancing language proficiency, while future studies can explore the long-term impact of such tools on language development. According to Godwin-Jones (2010), Pokrivcakova (2019) and Azamatova et al. (2023), "AI-powered tools have the potential to revolutionize language learning by providing personalized learning experiences and bridging the gap between traditional classroom instruction and autonomous learning".

Ultimately, the integration of AI-powered applications like ELSA Speak offers an opportunity for students to gain practical speaking experience in English, addressing both their linguistic needs and emotional barriers to language use. As Nunan (2004) concludes, "Incorporating technology into language learning is not just about improving skills but also about fostering a deeper connection with the language and making learning more engaging and effective".

## 2. LITERATURE REVIEW

### 2.1 *Concept of Teaching*

Teaching is an interactive process where teachers guide and support students by sharing knowledge and fostering a comfortable learning environment. Effective teaching requires skills, strategies, and methods tailored to student needs, promoting communication, skill development, and critical thinking (Hien & Phuong, 2023). Different teaching approaches, such as the Communicative Approach and Guided Conversation, help enhance English-speaking skills by encouraging interactive learning (Brown & Yule 2004). Using technology can further support speaking practice, boosting confidence and pronunciation. Teaching,

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therefore, integrates instruction, guidance, and motivation, aiming to prepare students for real-world interactions and decision-making.

**2.2 Concept of Speaking**

Speaking involves expressing thoughts through verbal and nonverbal means, where both speaker and listener communicate ideas effectively. Key aspects of speaking include vocabulary, grammar, pronunciation, and fluency, all essential for clear and natural communication. Psychological barriers like fear of mistakes, shyness, anxiety, low confidence, and lack of motivation can hinder students' speaking performance (Jaya et al., 2019; Yousefabadi et al., 2022). Solutions include fostering a supportive classroom, using group work, simplifying language, and creating an English-speaking environment. Successful speaking activities focus on high student participation, balanced contributions, and maintaining motivation with topics that engage and challenge students at an appropriate language level.

**2.3 Concept of 'ELSA Speak' Application**

ELSA Speak, an AI-powered app developed by Vu Van in 2015, helps users improve English pronunciation through speech recognition technology and is used globally. It features pronunciation accuracy, vocabulary building, grammar, and tailored communication skills, with data-driven progress tracking and exam preparation for TOEFL and IELTS. ELSA aids users with industry-specific language and confidence-building, fostering global collaboration and career opportunities. The app is intuitive and supports multiple languages, covering a variety of topics. However, it requires a smartphone, internet access, and offers limited free content. To use, students download, register, take a pronunciation test, and receive feedback for improvement.

**2.4 Research Hypothesis**

The research hypothesis is formulated as follows:

Ho : The use of the ELSA Speak application is not an effective

method for improving students' English-speaking skills.

Ha : The use of the ELSA Speak application is an effective method for improving students' English-speaking skills.

**3. RESEARCH METHODOLOGY**

This study employed a quasi-experimental method using a one-group pre-test and post-test design. The independent variable was the implementation of the ELSA AI application, while the dependent variable was the speaking proficiency of eighth-grade students. The population included 283 students from SMP Negeri 42 Palembang, with class VIII.5 (34 students) selected as the sample through purposive sampling. Data collection involved pre-tests, treatment using the ELSA Speak application, and post-tests to evaluate speaking improvements. A speaking test served as the research instrument, assessed for validity and reliability using Cohen's Kappa. Data analysis compared pre- and post-test mean scores via the Paired Sample T-test using SPSS 29. Scoring adhered to an eight-criterion rubric, scaled to 100 points, with classifications ranging from "Poor" to "Excellent." The findings aimed to determine the efficacy of ELSA Speak in enhancing students' speaking abilities.

**4. FINDINGS AND DISCUSSION**

The study titled "Teaching Speaking by Using ELSA AI to the Eighth Grade Students at SMP Negeri 42 Palembang" was conducted to evaluate the effectiveness of the ELSA Speak application in improving English speaking pronunciation skills among students of class VIII.5. A quasi-experimental method with a one group pre-test and post-test design was used, incorporating pre-tests, treatment, and post-tests. The study took place from May 29 to May 31, 2024, involving 34 students. Key findings include:

**Table 4.1 The Result of Pretest and Post-test**

No	Respondents	Pre-Test Scores	Interpretation	Post-Test Scores	Interpretation
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1	AS	71	Good	85	Very Good
2	AFA	68	Fair	78	Good
3	AF	55	Poor	75	Good
4	ANM	72	Good	90	Excellent
5	AR	69	Fair	91	Excellent
6	AH	59	Poor	94	Excellent
7	AFA	58	Poor	93	Excellent
8	AFA	62	Fair	84	Very Good
9	APR	64	Fair	87	Very Good
10	DAI	63	Fair	91	Excellent
11	DP	72	Good	81	Very Good
12	EP	62	Fair	76	Good
13	HMD	64	Fair	92	Excellent
14	FAS	63	Fair	89	Very Good
15	KRS	62	Fair	95	Excellent
16	KMA	59	Poor	84	Very Good
17	LIPS	62	Fair	83	Very Good
18	MAA	71	Good	93	Excellent
19	MB	59	Poor	90	Excellent
20	MA	56	Poor	83	Very Good
21	MF	70	Good	84	Very Good
22	MF	59	Poor	78	Good
23	MRR	70	Good	92	Excellent
24	NS	68	Fair	78	Good
25	NZT	65	Fair	84	Very Good
26	PAS	64	Fair	89	Very Good
27	RMA	62	Fair	94	Excellent
28	S	61	Fair	84	Very Good
29	SSK	71	Good	77	Good
30	TPA	73	Good	76	Good
31	VGDR	71	Good	85	Very Good
32	ZW	62	Fair	88	Very Good
33	ZCF	73	Good	91	Excellent
34	RI	67	Fair	76	Good
<b>TOTAL</b>		<b>2207</b>		<b>2910</b>	
<b>MEAN</b>		<b>64,9118</b>		<b>85,5882</b>	

Source: Researcher 2024

Based on the table above, in class VIII.5 using the communicative approach learning method, the average score was 64,9118 with the highest score being 73 and the lowest score being 55. Based on this data, there were 34 people who had not met the minimum KKM completion criteria, namely 75.

Based on the assessment table above, class VIII.5 which received treatment using the ELSA Speak application obtained an average score of 85,5228 with the highest score being 95 and the lowest score being 76. Based on this data, a total of 34 students

succeeded in meeting the minimum KKM completion criteria. namely 75.

Based on the results of the assessment table above, it is known that the test results of students in class VIII.5 who after receiving treatment with the ELSA Speak application got a higher average score, namely 85.5882, than when using the previously used learning method, they got an average score, namely 64.9118. This means that the use of ELSA Speak can improve the English speaking pronunciation skills of class VIII.5 students.

### *Statistical Analysis*

**Table 4.2 Paired Samples Statistics**

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**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test	64,9118	34	5,25915	,90194
	Post Test	85,5882	34	6,18462	1,06065

Source: Researcher 2024

Table 4.3 presents a summary of the descriptive statistics for both the pre-test and post-test data. It shows the average scores of class VIII.5 students for both tests, with the pre-test average at 64.9118 and the post-test average at 85.5882.

**Table 4.3 Paired Samples Correlations**

<b>Paired Samples Correlations</b>				
		N	Correlation	Sig.
Pair 1	Pre Test & Post Test	34	,141	,425

Source: Researcher 2024

Table 4.4 displays the results of the correlation test between the two sets of data: the pre-test and post-test. The Pearson product-moment correlation yielded a significance value of **0.425**. Since **0.425** is greater than **0.05**, which is the threshold for decision-making in correlation tests, it indicates that there is no significant correlation between the pre-test and post-test variables for class VIII.5.

**Table 4.4 Paired Samples Test**

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Pre Test - Post Test	-20,67647	7,53063	1,29149	-23,30403	18,04891	-16,010	33	,000

Source: Researcher 2024

**Basis for Decision Making**

1. If the Sig value (2-tailed) is <0.05, it indicates a significant difference between the learning outcomes of the pre-test and post-test data.
2. If the Sig value (2-tailed) is >0.05, it signifies no significant difference between the learning outcomes of the pre-test and post-test data.

In this case, since the Sig value (2-tailed) is 0.000, which is less than 0.05, the researcher concludes that there is a significant difference in English learning outcomes between the Pre-test and Post-test data for each student in class VIII.5 at SMP Negeri 42 Palembang.

Additionally, the author conducted an inter-rater reliability test using Cohen's

Kappa to assess the agreement between two evaluators in measuring students' English speaking abilities. This test also evaluated the consistency between the alternative new method of using the ELSA application for learning to speak English and the conventional methods.

**Table 4.5 Measurement of Students' Speaking Ability Scores by Two Raters**

No.	Rater 1	Rater 2
1	3	3
2	3	3
3	3	3
4	4	4
5	4	4
6	4	4
7	4	4

8	4	4
9	4	4
10	4	4
11	5	4
12	4	4
13	5	4
14	4	4
15	5	5
16	4	4
17	4	4
18	4	4
19	4	4
20	4	4
21	4	4
22	4	4
23	4	4
24	4	4
25	4	4
26	4	4
27	4	4
28	5	5
29	4	4
30	4	4
31	4	4
32	4	4

33	4	4
34	4	4

Source : (Elder et al, 2020)

Description : 1 : Very Poor  
 2 : Poor  
 3 : Sufficient  
 4 : Good  
 5 : Very Good

According to Lopez-Garcia et al. (2020), Cohen's Kappa values are categorized as follows:

< 0: Agreement is less than what would be expected by chance.	0.41 - 0.60: Fair to good agreement.
0 - 0.20: Very low agreement.	0.61 - 0.80: Good to excellent agreement.
0.21 - 0.40: Low to medium agreement.	0.81 - 1.00: Perfect agreement.

**Table 4.6 Case Processing Summary**

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
rater1 * rater2	34	100,0%	0	0,0%	34	100,0%

Source : Researcher 2024

**Table 4.7 Rater 1 & Rater 2 Crosstabulation**

Count		rater2			Total
		3,00	4,00	5,00	
rater1	3,00	3	0	0	3
	4,00	0	27	0	27
	5,00	0	2	2	4
Total		3	29	2	34

Source : Researcher 2024

**Table 4.8 Symmetric Measures**

Symmetric Measures				
	Value	Asymp. Std. Error <sup>a</sup>	Approx. T <sup>b</sup>	Approx. Sig.

Measure of Agreement	Kappa	,809	,129	6,325	,000
N of Valid Cases		34			

- a. Not assuming the null hypothesis.
- b. Using the asymptotic standard error assuming the null hypothesis.

Source : Researcher 2024

The results indicated a Cohen's Kappa value of 0.809, signifying a very good level of agreement between the two raters in categorical assessments. This score reflects the reliability and consistency of the assessment instruments utilized, as well as the raters' strong understanding of the applied criteria. With this high level of agreement, the resulting data can be regarded as valid, making it suitable for decision-making and further analysis.

**Implementation of Research Result**

The findings from this study align with and build upon previous research exploring the effectiveness of technology, specifically AI-based tools, in enhancing students' language skills, particularly in speaking and pronunciation. The significant improvement in the students' English speaking abilities after using the ELSA Speak application supports earlier studies that emphasize the positive impact of technological interventions on language learning.

In a study by Yang & Kyun (2022), the use of AI-driven applications was found to improve learners' language proficiency by offering personalized feedback and targeted practice. Similarly, the results of this study show a substantial increase of 31.82% in the students' post-test scores compared to their pre-test scores, suggesting that the ELSA Speak app provides a more effective and engaging approach to language learning than traditional methods. This supports the findings of Kuddus (2022), who highlighted the potential of technology, particularly AI, in providing learners with immediate, individualized feedback, which is a key factor in improving language skills.

Furthermore, the hypothesis test results, which showed a significance value of 0.000, mirror the conclusions of previous research by Azamatova et al. (2023), who demonstrated that mobile and AI-based applications significantly enhance learners' speaking and pronunciation abilities. Their study found similar results, where students

who used AI-powered applications for pronunciation practice showed marked improvement in their speaking skills. The data from this study—particularly the increase in scores from 64.9118 in the pre-test to 85.5882 in the post-test—echoes these findings, reinforcing the notion that targeted, technology-based interventions can significantly improve English pronunciation.

Moreover, the lack of correlation between the pre-test and post-test variables (significance value of 0.425) further supports the idea that the pre-test scores did not significantly predict the post-test results. This suggests that the improvement observed in the post-test was likely due to the intervention itself (the use of the ELSA Speak application), rather than being a result of other factors, such as initial skill levels. This outcome is consistent with the work of Dornyei (2001), who discussed the challenges of relying solely on pre-test data to assess the effectiveness of teaching methods, particularly when new tools or strategies are implemented.

Percentage Increase Calculation:

Percentage Increase =

$$\frac{\text{Post-Test Score} - \text{Pre-Test Score}}{\text{Pre-Test Score}} \times 100\%$$

$$\text{Percentage Increase} = \frac{85,5882 - 64,9118}{64,9118} \times 100\%$$

$$\text{Percentage Increase} = \frac{20,6764}{64,9118} \times 100\%$$

$$\text{Percentage Increase} = 0,3182 \times 100\%$$

$$\text{Percentage Increase} = 31,82\%$$

The Cohen's Kappa result of 0.809 signifies a very good level of agreement between the assessors in categorical measurements, suggesting consistent results across the assessed categories. This high value reflects "excellent" agreement, indicating that the assessment criteria were

applied reliably and consistently. The strong level of agreement enhances confidence in the research findings, confirming the validity of the data for decision-making, further analysis, or additional studies. Overall, the Cohen's Kappa value of 0.809 indicates a high level of inter-rater reliability, reinforcing the validity of the results obtained.

## 5. CONCLUSION AND SUGGESTION

This study examines the impact of the ELSA Speak application on improving the English speaking abilities of class VIII.5 students at SMP Negeri 42 Palembang. A quasi-experimental design with a one-group pre-test and post-test approach was used, involving 34 participants. The data collection methods consisted of a pre-test, treatment phase, and post-test. The results showed that ELSA Speak significantly boosted students' pronunciation skills compared to conventional teaching methods. The average score on the pre-test was 64.9118, which increased to 85.5882 on the post-test, marking a 31.82% improvement. Hypothesis testing revealed a significance value of 0.000, confirming the positive effect of ELSA Speak on student performance.

Recommendations include encouraging the integration of ELSA Speak into school curricula due to its demonstrated effectiveness, and ensuring teachers receive adequate training to incorporate the app into their teaching methods. It is also suggested that future research involve larger, more varied participant groups to further confirm these findings and explore the app's long-term impact. Ongoing assessments should be carried out to ensure the app continues to enhance students' English speaking skills, while developers are urged to update and expand the app's content to maintain its relevance and engagement.

## 6. REFERENCES

Azamatova, A., Bekeyeva, N., Zhaxylikova, K., Sarbassova, A., & Ilyassova, N. (2023). The Effect of Using Artificial Intelligence and Digital Learning

Tools based on Project-Based Learning Approach in Foreign Language Teaching on Students' Success and Motivation. *International Journal of Education in Mathematics, Science and Technology*, 11(6), 1458–1475.

<https://doi.org/10.46328/ijemst.3712>

Brown, G., & Yule, G. (2004). *Teaching the spoken language: An approach based on the analysis of conversational English*. Cambridge University Press.

Brown, .D. (2000). *Principles of Language Learning and Teaching*. Longman.

Chapelle, C. (2001). *Computer Applications in Second Language Acquisition: Foundations for Teaching, Testing, and Research*. Cambridge University Press.

Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications

Dash, B. B. (2022). Digital Tools for Teaching and Learning English Language in 21 st Century. *International Journal Of English and Studies*, 4(2), 8–13. <http://dx.doi.org/10.47311/IJOES.2022.4202>

Dornyei, Z. (2001). *Motivational Strategies in the Language Classroom*. Cambridge University Press.

Elder, C., & Iwashita, N. (2020). "Assessing speaking in a second language: The role of the task and the rating scale." *Language Testing*.

Godwin-Jones, R. (2010). Emerging Technologies. *Language Learning and Tecnology*, 14(2), 4–11. <http://lt.msu.edu/vol14num2/emerging.pdf>

Harmer, J. (2001). *How to teach English*.

Hien, N. T. T., & Phuong, V. T. (2023). The effectiveness of the storytelling

- technique on students' achievement and motivation in English speaking skills. *Multidisciplinary Reviews*, 6(Special Issue). <https://doi.org/10.31893/multirev.2023spe011>
- Jaya, A., Hermansyah, & Rosmiyati, E. (2019). Redefining Project Based Learning In English Class. *Esteem Journal of English Education Study Programme*, 2(<https://jurnal.univpgripalembang.ac.id/index.php/esteem/issue/view/304>). <https://doi.org/https://doi.org/10.31851/esteem.v2i2.2423>
- Khanh, C. G. (2021). The Effect of ICT on Learners' Speaking Skills Development. *International Journal of TESOL & Education*, 1(1), 22–29.
- Kuddus, K. (2022). Artificial Intelligence in Language Learning: Practices and Prospects. *Advanced Analytics and Deep Learning Models*. <https://doi.org/https://doi.org/10.1002/9781119792437.ch1>
- López-García, P., & Pérez-Moreno, M. A. (2020). "Inter-rater reliability of the Kappa statistic: a systematic review." *Frontiers in Psychology*, 11, 569.
- Nunan, D. (2004). *Task-based Language Teaching*. Cambridge University Press.
- Nunan, D. (2005). *Practical English Language Teaching: Young Learners*. McGraw-Hill.
- Pokrivcakova, S. (2019). Preparing teachers for the application of AI-powered technologies in foreign language education. *Journal of Language and Cultural Education*, 7(3), 135–153. <https://doi.org/10.2478/jolace-2019-0025>
- Richards, J. C., & Rodgers, T. S. (2014). *Approaches and Methods in Language Teaching* (3rd Editio). Cambridge University Press.
- Spratt, M., Pulverness, A., & Williams, S. (2011). *The teaching of English as a Foreign Language* (3rd ed.). Routledge.
- Sujiati, R., Jaya, A., Rosmiyati, E., & Noviati. (2023). Efl Teachers' Attitudes and Experiences on the Implementation of Multiliteracies. *Esteem Journal of English Education Study Programme*, 7(1), 85–96. <https://doi.org/10.31851/esteem.v7i1.12653>
- Wahyuni, S., Mujiyanto, J., Rukmini, D., & Fitriati, S. W. (2019). Examining Teachers' Innovation in EFL Classrooms in Promoting Students' Autonomous Learning. *International Conference on English Language Teaching, Literature, and Translation*, 188, 330–339. <https://doi.org/10.2991/elslt-18.2019.64>
- Warschauer, M., & Meskill, C. (2000). *Technology and Second Language Learning* (1st ed.). Routledge.
- Yang, H., & Kyun, S. (2022). The current research trend of artificial intelligence in language learning: A systematic empirical literature review from an activity theory perspective. *Australasian Journal of Educational Technology*, 38(5), 180–210. <https://doi.org/10.14742/ajet.7492>
- Yousefabadi, M. M., Ghasemnezhad, T., & Akbarie, Y. (2022). The Effect of Anxiety, Motivation and Self-Confidence in Language Learners' Reading Proficiency. *NeuroQuantology*, 20(16), 4966–4976. <https://doi.org/10.48047/NQ.2022.20.16.NQ880504>