

The Effectiveness of Using ELSA Speak Application to Teach English Speaking Skills to High School Students

Wipen Asteriana

English Language Education Study Program, Faculty of Language, Art, and Humaniora, Hamzanwadi University, Indonesia

Received : September 12, 2025

Revised : December 22, 2025

Accepted : December 27, 2025

Published: December 28, 2025

Corresponding Author

Wipen Asteriana

wipena.210202072@

student.hamzanwadi.ac.id

DOI: 10.29303/jeef.v5i4.927

© 2025 The Authors. This open access article is distributed under a (CC-BY License)

Abstract

This study investigates the effectiveness of the ELSA Speak application in improving high school students' English-speaking skills. A quasi-experimental design with one group pre-test and post-test was employed, involving 26 students of Grade XI at MA Al-Mubarak NW Sembalun. Students were assessed on pronunciation, fluency, grammar, vocabulary, and comprehension. Data were collected through pre-tests, post-tests, and semi-structured interviews. Quantitative analysis showed a significant improvement in speaking scores from a mean of 12.11 (pre-test) to 18.07 (post-test). A paired sample t-test confirmed the difference was statistically significant ($p < 0.05$). Qualitative findings revealed that students gained confidence, fluency, and motivation through interactive features and instant feedback of the app. These results demonstrate that ELSA Speak is an effective digital tool for enhancing students' speaking proficiency and should be integrated into classroom practice. Future studies could explore the long-term effects of using ELSA Speak by conducting longitudinal research over multiple semesters. Additionally, comparative studies involving different age groups or diverse linguistic backgrounds would help determine the app's adaptability and effectiveness across varied educational contexts.

Keywords

ELSA Speak, speaking skill, AI-based learning, pronunciation, English education

INTRODUCTION

Language is a set of important tools in human life (Fromkin, Rodman, & Hyams, 2018). Humans cannot be separated from language; it is with language that humans can communicate (Yule, 2020). Language is our main source of communication (O'Grady, Archibald, Aronoff, & Katamba, 2017). People use language to communicate with each other; with language we can express our feelings, thoughts, and ideas to other people (Crystal, 2019). It is a method in which we share our ideas and thoughts with others (Ilyosovna, 2020).

In today's globally connected world, English has emerged as a global lingua franca, essential for cross-cultural communication in diverse professional fields. In countries where English is a foreign language, such as Indonesia, schools have increasingly prioritized English learning. However, mastering a foreign language poses challenges for students, particularly in skills like grammar, writing, and speaking. Among these, English speaking proficiency is deemed especially crucial for academic success and career advancement evident in research showing that internal motivators like self-confidence and personal satisfaction significantly enhance willingness to speak English among Indonesian EFL learners (Larasati et al., 2024). Additionally, studies indicate that psychological barriers such as anxiety and shyness alongside limited opportunities for real-world practice, impede EFL students' oral performance (Ambawani et al., 2025). Therefore, targeted support in speaking practice, including technological tools and interactive learning, is essential for improving communicative competence and preparing students for global engagement.

Speaking ability is one of the important language skills for students to master. The importance of speaking is so important and important that individuals often ignore the need to speak effectively and interestingly, thus causing difficulties in developing this ability (Van Huy et al., 2024). Even though it is recognized as an important skill in language learning, the

reality is that in learning speaking, not all students have the opportunity to practice it regularly in conventional language learning.

Language learning that still uses conventional methods certainly has basic characteristics, but cannot fully serve the needs of diverse learners, especially in learning to speak. Many students struggle with anxiety and lack of confidence when speaking English, which can hinder their ability to engage in meaningful conversations.

Therefore, innovative approaches are needed in language learning to help students improve their speaking skills. This approach should focus on providing innovative learning experiences so that students have the opportunity to practice speaking more often and in interesting contexts. One innovative approach is the use of technology.

Elsa Speak Application

In the current era of globalization, the use of technology in the world of education offers a solution in creating a new speaking learning atmosphere for students, especially through the use of artificial intelligence (AI) applications. Technology aids language acquisition by giving students access to resources, allowing them to practice speaking, and facilitating direct communication with native speakers (Zhao & Lai, 2023). There are many applications that offer English learning that involve artificial intelligence (AI) to analyse user pronunciation and provide real-time feedback. One application that provides various interactive and interesting speaking exercises that can help students learn English more happily is the English Language Speech Assistant (ELSA) application.

The use of the ELSA Speak application, which is equipped with automatic speech recognition technology and instant feedback, has proven effective in improving students' pronunciation, intonation, and speaking fluency in independent and mobile-based English learning, as supported

by various recent studies, such as Fauziah et al. (2024), Wilujing and Karikawati (2025), and Rahman et al. (2024).

By examining the effectiveness of ELSA Speak, this research seeks to influence the development of a broader discourse regarding the application of digital tools in language education, thereby offering valuable implications for educators and curriculum developers (Elsani et al., 2023). Understanding how AI applications can enhance the language learning experience is critical to helping students prepare for an increasingly globalized world.

Although several studies have explored the use of AI-based applications such as *ELSA Speak* in improving the speaking proficiency of Indonesian students in English language learning contexts (e.g., Salsabila et al., 2024; Karim et al., 2023), there remains a gap in experimental research that specifically examines the effectiveness of these applications in enhancing overall speaking proficiency, particularly in the context of English as a medium of instruction. Furthermore, while existing literature highlights challenges faced by students, such as speaking anxiety and lack of confidence (Horwitz, 2001), there is limited empirical evidence on how AI applications can effectively address these psychological barriers and provide meaningful speaking practice (Saragih & Lubis, 2025; Mardiah & Saadillah, 2025). Furthermore, most studies focus on the use of the technology in general in language learning without exploring the specific impact of immediate feedback provided by AI applications on students' speaking ability. This gap highlights the need for research that focuses on the implementation of AI tools in language education, particularly in the context of Indonesian learners.

This research provides a new lens by directly investigating the impact of using the ELSA Speak app on teaching the speaking skills of Indonesian students who are learning English. While previous research has discussed the benefits of technology in language learning, this study focuses on the application of AI technology in providing immediate feedback on pronunciation, intonation, and fluency. By analysing the effectiveness of ELSA Speak, this research is expected to contribute to the existing literature by presenting ideas on how AI applications can improve English speaking skills.

RESEARCH METHOD

This study employed a quantitative approach with a quasi-experimental design, specifically the one-group pre-test and post-test model, to investigate the effectiveness of the ELSA Speak application in enhancing English speaking skills among high school students. The research was conducted at MA Mubarak NW Sembalun, involving 26 purposively selected twelfth-grade students who demonstrated a need for improvement in speaking proficiency and were open to technological learning tools. Over the course of six meetings, participants received treatment through structured interaction with the ELSA Speak app. Data collection began with a pre-test, where students delivered a 2-3 minute spoken presentation on topics like self-introduction or daily routines, assessed using a standardized rubric covering pronunciation, fluency, grammar, vocabulary, and comprehension.

Following the intervention period, a post-test was administered using different but comparable topics—such as describing a holiday or sharing future plans—to measure progress. The same assessment rubric was applied to ensure consistency, allowing for a direct comparison between pre-

and post-test scores. This comparison served as the primary method for evaluating the app's impact on students' speaking abilities. The absence of a control group is a characteristic of the pre-experimental design used, which focuses on observing changes within a single group before and after an intervention, making it suitable for initial assessments of program effectiveness in a real classroom setting.

To complement the quantitative data, qualitative insights were gathered through semi-structured interviews with ten randomly selected students. These interviews explored their perceptions of the ELSA Speak application, focusing on aspects such as motivation, confidence, ease of use, and challenges encountered. The qualitative data were analyzed using thematic coding, with categories including speaking improvement, motivation and engagement, technology integration, autonomous learning, and classroom implementation. This mixed-methods approach provided a comprehensive understanding of both the measurable improvements in speaking performance and the students' personal experiences, offering valuable implications for the integration of AI-driven tools in language education.

RESULT AND DISCUSSION

Pre-test Results

Pre-test was administered to determine students' initial abilities before being treated with the ELSA Speak application. The test was conducted by asking students to speak spontaneously for 2–3 minutes on simple topics such as introduce yourself and describe your favorite place. The assessment covered five main aspects:

- Pronunciation – clarity of word pronunciation.
- Fluency – smoothness of speech without many pauses.
- Vocabulary – variety of words used.
- Grammar – accuracy of sentence structure.
- Comprehension – ability to understand and respond to questions.

Table 1 below shows the pre-test results.

No.	Name of Students	Pre-test
1.	S1	11
2.	S2	12
3.	S3	13
4.	S4	10
5.	S5	9
6.	S6	14
7.	S7	12
8.	S8	11
9.	S9	13
10.	S10	15
11.	S11	10
12.	S12	12
13.	S13	13
14.	S14	14
15.	S15	12
16.	S16	9
17.	S17	11
18.	S18	13
19.	S19	12
20.	S20	14
21.	S21	15
22.	S22	10

No.	Name of Students	Pre-test
23.	S23	11
24.	S24	12
25.	S25	13
26.	S26	14

Of the 26 students, the pre-test results were:

Highest score: 15

Lowest score: 9

To calculate the average score, the total of all pre-test scores was divided by the number of students.

Total post = $315 \div 26 = 12.11$

Average: 12.11

Most students were in the adequate category, with the main weaknesses being pronunciation (many mispronunciations) and fluency (frequent pauses in the middle of sentences). Students tended to use simple vocabulary and avoid long sentences due to their limited grammar and vocabulary.

Post-test Results

After receiving treatment for three weeks using the ELSA Speak application, students took a post-test. The post-test instrument was more challenging, with topics such as Talk about your daily activities and give your opinion about technology in education.

Table 2 below shows the post-test results.

No.	Name of Students	Pre-test
1.	S1	16
2.	S2	18
3.	S3	18
4.	S4	15
5.	S5	14
6.	S6	20
7.	S7	17
8.	S8	17
9.	S9	19
10.	S10	21
11.	S11	16
12.	S12	18
13.	S13	20
14.	S14	19
15.	S15	18
16.	S16	15
17.	S17	18
18.	S18	19
19.	S19	20
20.	S20	19
21.	S21	22
22.	S22	15
23.	S23	17
24.	S24	19
25.	S25	18
26.	S26	20

The results show a significant improvement:

Highest score: 22

Lowest score: 15

To calculate the average score, the total of all pre-test scores was divided by the total number of students.

Total post = $468 \div 26 = 18.00$

Average: 18.00

This change shows that almost all students experienced an improvement in their speaking skills, in terms of pronunciation, fluency, and confidence. Pronunciation showed the greatest improvement due to the instant feedback provided by the application.

Comparison of Pre-test and Post-test

Table 3. Comparison of Pre-test and Post-test Scores (26 Students)

No.	Name of Students	Pre-test	Post-test	Difference	% Increase
1.	S1	11	16	5	45,4%
2.	S2	12	18	6	50,0%
3.	S3	13	18	5	38,0%
4.	S4	10	15	5	50,0%
5.	S5	9	14	5	55,5%
6.	S6	14	20	6	42,8%
7.	S7	12	17	5	41,6%
8.	S8	11	17	6	54,5%
9.	S9	13	19	6	46,1%
10.	S10	15	21	6	40,0%
11.	S11	10	16	6	60,0%
12.	S12	12	18	6	50,0%
13.	S13	13	20	7	53,8%
14.	S14	14	19	5	35,7%
15.	S15	12	18	6	50,0%
16.	S16	9	15	6	66,6%
17.	S17	11	18	7	63,6%
18.	S18	13	19	6	46,1%
19.	S19	12	20	8	66,6%
20.	S20	14	19	5	35,7%
21.	S21	15	22	7	46,6%
22.	S22	10	15	5	50,0%
23.	S23	11	17	6	54,5%
24.	S24	12	19	7	58,3%
25.	S25	13	18	5	38,4%
26.	S26	14	20	6	42,8%
	Average	12,11	18,07	5,88	

Interpretation: There was an average increase of 5.88 points. This increase was not only reflected in the average score, but also in the distribution of student scores: no student's score decreased, and all students were in a higher category after the treatment.

Statistical Test Results

To ensure that the increase was significant, a Paired Sample t-test was conducted. Calculation results

Table 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			
Paired Sample 1: pre - post	-5.8846	.81618	.16007	-6.21428	-5.55495	-36.764	25	.000

1. Mean Difference = -5.88 → this means that the post-test score is on average 5.88 points higher than the pre-test score.
2. Std. Deviation = 0.816 → the variation in differences between students is relatively small, meaning that the improvement is fairly consistent.
3. t (t-value) = -36.764 → this value is very large (far from 0), indicating a significant difference.
4. df (degrees of freedom) = 25 (sample size - 1).
5. Sig. (2-tailed) = 0.000 (< 0.05) → the difference is very significant.

The data shows a significant improvement in students' speaking skills after using the ELSA Speak app. Because the Sig value is < 0.05, H₀ is rejected and H₁ is accepted. In other words, ELSA Speak is effective in improving students' speaking skills.

Table 5. Tests of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
pre	.127	26	.200*	.955	26	.301
post	.154	26	.116	.966	26	.521

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Normality tests were conducted to determine whether the pre-test and post-test data were normally distributed. In this study, the Kolmogorov-Smirnov and Shapiro-Wilk tests were used. Since all Sig. values > 0.05, namely pretest 0.301 and post-test 0.521, it can be concluded that the pre-test and post-test data are normally distributed. Thus, the normality assumption is fulfilled.

Table 6. Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Pre	Based on Mean	.316	1	50	.577
	Based on Median	.374	1	50	.544
	Based on Median and with adjusted df	.374	1	48.160	.544
	Based on trimmed mean	.309	1	50	.581

The homogeneity test is used to see whether the variance of the pre-test and post-test data comes from the same population (homogeneous). The test was conducted using Levene's Test. Because the Sig. value is > 0.05, it can be concluded that the pre-test and post-test data have homogeneous variance. This can be seen in the sig. value in the table, where the sig. value reaches 0.577, which means >0.05, so the data is declared homogeneous.

Interview Results

Based on the results of interviews with ten students from the high, medium, and low categories, the author assesses that the use of the ELSA Speak application has a real positive impact on improving students' speaking skills. One student expressed, "When I practice with ELSA, my pronunciation becomes clearer and easier to understand because the app tells me where I am wrong" (A-1-a). This statement supports Ramdhani et al. (2025), who emphasized that direct and immediate feedback helps learners correct pronunciation errors effectively. Another student mentioned, "I feel more fluent now. Before, I stopped too often when speaking, but after practicing with the app, I can speak more smoothly" (A-2-b). This aligns with the findings of Riswandi (2016), who found that regular practice using digital media improves fluency in speaking, enrich their vocabulary, and make them easier to find an idea in producing sentences while speaking.

From the aspect of motivation, one student said, "I am more confident to speak English now because I already practiced many times with ELSA" (B-1-a). This reflects the principle of self-determination theory, which states that increased competence enhances self-confidence (Legault, 2017). Another student added, "It feels like playing a game because of the scores and rankings. That makes me want to practice more often" (B-2-b). This is in line with Kusmaryani et al. (2019) who explained that gamification elements in mobile learning applications increase students' engagement and motivation.

From the perspective of technology integration, a student reported, "I like it because I can get corrections right away. It shows me my mistakes and I can try again until I get it right" (C-1-a; D-2-b). This is supported by Ajogbeje (2023), who found that real-time feedback is highly influential in reinforcing learning outcomes. However, not all experiences were entirely positive. One student admitted, "Even though I practice with ELSA, I still feel nervous when I have to speak in front of my friends" (B-1-a). This illustrates that psychological barriers such as shyness and anxiety still exist and need teacher support to overcome, as noted by Gobena (2024).

Discussion

The findings of this study demonstrate that the use of the ELSA Speak application had a significant impact on improving students' English-speaking skills. The average score increased from 12.11 in the pre-test to 18.07 in the post-test, with a mean difference of 5.88 points. The Paired Sample t-test confirmed that this improvement was statistically significant (Sig. < 0.05), which indicates that the intervention successfully enhanced students' speaking performance. These results support the initial hypothesis (H₁) that ELSA Speak is an effective technique for improving students' speaking skills.

The improvement was evident across all speaking components—pronunciation, fluency, grammar, vocabulary, and comprehension—but pronunciation and fluency showed the most remarkable progress. This aligns with Ramdhani et al. (2025), who argued that immediate and specific feedback enables learners to correct pronunciation effectively, and with Riswandi (2016), who highlighted the role of consistent practice in enhancing fluency. The instant correction and personalized exercises provided by ELSA Speak appear to be the key factors behind this progress.

Qualitative findings from student interviews also reinforce the quantitative results. Many students reported feeling more confident and motivated when practicing with the application. Gamification elements, such as scores and rankings, encouraged consistent engagement, reflecting the principles of Self-Determination Theory (Legault, 2017), which emphasizes the role of intrinsic motivation in learning. Moreover, the ability to practice independently at any time contributed to their sense of autonomy and responsibility in language learning. These findings are consistent with Kusmaryani et al. (2019), who found that mobile learning applications increase student engagement and create a more enjoyable learning experience.

Nevertheless, some students admitted that despite improvements in their technical speaking skills, they still experienced anxiety and nervousness when speaking in front of peers. This suggests that while technology-based applications like ELSA Speak effectively enhance pronunciation and fluency, classroom support and teacher guidance remain essential to overcome affective barriers such as shyness and language anxiety Gobena (2024).

Overall, the results of this study confirm the pedagogical value of integrating AI-based applications into English language learning. The findings align with previous studies (Sa'diyah et al., 2025; Aulia & Santosa, 2025; Wilujing & Karikawati, 2025), which demonstrated that ELSA Speak significantly improves learners' speaking proficiency. In the context of Indonesian EFL learners, the application not only facilitated technical improvements but also supported motivational and affective dimensions of learning. Therefore, ELSA Speak can be considered a valuable supplement to traditional classroom instruction, especially in environments where students have limited opportunities to practice speaking English.

CONCLUSION

This study concludes that the ELSA Speak application significantly enhances the English-speaking skills of Grade XI students at MA Al-Mubarak NW Sembalun, as demonstrated by both quantitative and qualitative data. Quantitatively, students' average speaking scores rose from 12.11 in the pre-test to 18.07 in the post-test—a 5.88-point improvement—with a statistically significant difference confirmed by a paired sample t-test (Sig. [2-tailed] = 0.000 < 0.05). Qualitative findings from interviews further support this, revealing that students experienced noticeable improvements in pronunciation, fluency, and intonation through regular, self-directed practice. Additionally, features like instant feedback, point systems, and rankings boosted their motivation, self-confidence, and engagement in learning English independently.

Despite these positive outcomes, challenges persist, particularly among lower-proficiency students who continue to experience anxiety and shyness when speaking publicly, indicating that affective barriers require more than technological intervention alone. Therefore, while ELSA Speak effectively supports both the technical and affective dimensions of speaking development, its successful integration into school or boarding school contexts depends on consistent use, teacher support, and a conducive learning environment. Future research should explore the long-term impacts of ELSA Speak through longitudinal studies and examine its effectiveness across different age groups and

linguistic backgrounds to better understand its adaptability in diverse educational settings.

REFERENCES

- Ajogbeje, O. J. (2023). Enhancing Classroom Learning Outcomes: The Power of Immediate Feedback Strategy. *International Journal of Disabilities Sports & Health Sciences*, 6(3), 453–465. <https://doi.org/10.33438/ijdshs.1323080>
- Ambawani, S., Astasari, I., & Rukiati, E. (2025). Overcoming barriers to EFL speaking proficiency: A multidimensional analysis of language learning challenges. *Journal of English in Academic and Professional Communication*, 11(1), 23–36. <https://publikasi.poliije.ac.id/jeapco/article/view/5769>
- Aulia, L., & Santosa, M. (2025). AI in language education: Systematic review of Elsa Speak's impact on English. *Jurnal Pendidikan Bahasa Inggris Indonesia*, 13(1), 1–10. <https://ejournal2.undiksha.ac.id/index.php/jpbi/article/view/3771>
- Elsani, E., Salsabila, R., Putra, M. F. I., Nabila, N. K., & Nahartini, D. (2023). The effect of using Elsa Speak App for First-Semester students' English speaking proficiency. *EDUKATIF JURNAL ILMU PENDIDIKAN*, 5(6), 2644–2655. <https://doi.org/10.31004/edukatif.v5i6.5976>
- Gobena, G. A. (2024). Psychological barriers contributing to students' poor English language speaking skills. *International Journal of Instruction*, 18(1), 273–290. <https://doi.org/10.29333/iji.2025.18115a>
- Horwitz, E. K. (2001). Language anxiety and achievement. *Annual Review of Applied Linguistics*, 21, 112–126. <https://doi.org/10.1017/S0267190501000071>
- Ilyosovna, N. A. (2020). The importance of English language. *INTERNATIONAL JOURNAL ON ORANGE TECHNOLOGIES (IJOT)*, 2(1), 22-24. <https://media.neliti.com/media/publications/333378-the-importance-of-english-language-2c7b6d03.pdf>
- Karim, S. A., Hamzah, A. Q. S., Anjani, N. M., Prianti, J., & Sihole, I. G. (2023). Promoting EFL Students' speaking performance through ELSA Speak: An artificial intelligence in English language learning. *Journal of Languages and Language Teaching*, 11(4), 655–668. <https://doi.org/10.33394/jollt.v11i4.8958>
- Kusmaryani, W., Musthafa, B., & Purnawarman, P. (2019). The influence of mobile applications on students' speaking skill and critical thinking in English language learning. *Journal of Physics Conference Series*, 1193, 012008. <https://doi.org/10.1088/1742-6596/1193/1/012008>
- Larasati, F., Saraswati, D. R., Haryanto, N. E., & Sulistiyo, U. (2024). A Systematic review of motivational factors in developing speaking skills among Indonesian EFL learners. *PPSDP International Journal of Education*, 3(2), 382–395. <https://doi.org/10.59175/pijed.v3i2.320>
- Legault, L. (2017). Self-Determination Theory. In *Springer eBooks* (pp. 1–9). https://doi.org/10.1007/978-3-319-28099-8_1162-1
- Mardiah, A. Q., & Saadillah, S. (2025). Maximizing ELSA speak for developing English fluency and reducing speaking barriers in language learners. *Issues in*

- Applied Linguistics & Language Teaching*, 7(1), 262–271. <https://doi.org/10.37253/iallteach.v7i1.10421>
- Ramdhani, N., Hilmawan, L. G., Saqinah, R. F., Ariawan, S., & Suhandra, I. R. (2025). Falou AI In pronunciation practice: Insights from students' experiences. *Journal of English Language Proficiency*, 2(1), 11-24. <https://doi.org/10.36312/jelap.v2i1.4673>
- Riswandi, D. (2016). Use of YouTube-based videos to improve students' speaking skill. *Proceeding of the International Conference on Teacher Training and Education*, 2(1), 298-306. <https://jurnal.uns.ac.id/iccte/article/view/8150>
- Sa'diyah, L., Bahtiar, Y., Nur, L. C. N., Afidah, N., & Ma'arif, I. B. (2025). The effectiveness of Elsa Speak to improve speaking skill in extra class Ma Al-Bairuny. *APPLICATION Applied Science in Learning Research*, 5(1), 27–35. <https://doi.org/10.32764/application.v5i1.5805>
- Salsabilla, D., Tahrur, & Rosmiyati, E. (2024). Teaching speaking by using “ELSA AI” to the eighth grade students of SMP Negeri 42 Palembang. *ESTEEM Journal of English Education Study Programme*, 7(2), 841-849. <https://jurnal.univpgri-palembang.ac.id/index.php/esteem/article/view/17085>
- Saragih, F., & Lubis, S. (2025). Students' language anxiety levels and factors in using ELSA speak for Grade eight at SMP Santo Thomas 3 Medan. *TRANSFORM Journal of English Language Teaching and Learning*, 14(2), 116–124. <https://doi.org/10.24114/tj.v14i2.67378>
- Van Huy, N. N., Nam, N. N. T., & Bon, N. B. N. (2024). The Importance of Speaking in English as a Foreign Language between Skillful and Thoughtful Competencies: Studying Sociolinguistics Perspectives. *International Journal of English Language Studies*, 6(2), 153–159. <https://doi.org/10.32996/ijels.2024.6.2.22>
- Wilujing, A. P., & Karikawati, D. (2025). The use of ELSA Speak application to improve pronunciation accuracy of Ninth Graders at SMPN 1 Gondang. *Semantik: Jurnal Riset Ilmu Pendidikan, Bahasa Dan Budaya*, 3(2), 340–347. <https://journal.aspirasi.or.id/index.php/Semantik/article/view/2145>
- Zhao, Y., & Lai, C. (2023). Technology and second language learning. In *Routledge eBooks* (pp. 167–206). <https://doi.org/10.4324/9781003418009-8>
- Fauziah, N. N., Aororah, N. Z. Z., Ramadhany, N. R. A., & Hamid, N. S. M. (2024). The impact of the English Language Speech Assistant (ELSA) application on students' pronunciation skills. *INTERACTION Jurnal Pendidikan Bahasa*, 11(2), 193–203. <https://doi.org/10.36232/interactionjournal.v11i2.26>
- Wilujing, N. a. P., & Karikawati, N. D. (2025). The use of ELSA speak Application to improve pronunciation accuracy of ninth graders at SMPN 1 Gondang. *Semantik Jurnal Riset Ilmu Pendidikan Bahasa Dan Budaya*, 3(2), 340–347. <https://doi.org/10.61132/semantik.v3i2.2145>
- Rahman, S. R., Nurhamdah, N., & Munawir, M. (2024). ELSA Speak Application to improve the students' pronunciation at member of libam. *Al-Irsyad Journal of Education Science*, 3(1), 15–21. <https://doi.org/10.58917/ajjes.v3i1.92>
- Crystal, D. (2019). *The Cambridge encyclopedia of the English language* (3rd ed.). Cambridge University Press.
- Fromkin, V., Rodman, R., & Hyams, N. (2018). *An introduction to language* (11th ed.). Cengage Learning.
- O'Grady, W., Archibald, J., Aronoff, M., & Katamba, F. (2017). *Contemporary linguistics: An introduction* (7th ed.). Oxford University Press.
- Yule, G. (2020). *The study of language* (7th ed.). Cambridge University Press.