The Future Speaks: Exploring Artificial Intelligence's Impact
on EFL Students' Speaking Skills

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Abstract

This research explores the influence of the Artificial Intelligence: Fully Fluent application on Indonesian junior high school students' English-speaking skills and explores teacher and student perceptions of its use. The study employed a mixed method using interviews and questionnaires with teachers and students to get qualitative data alongside quantitative data from a quasi-experiment pre-posttest. Teachers reported that the application developed motivation, confidence, and behavioral engagement in class, with student surveys being overwhelmingly positive with convenience, enjoyment, and increased confidence. Regarding quantitative results, statistically significant improvement is reported since the experimental group's mean scores (84.51) are greater than the control group's (71.91). In both the independent samples t-test (Sig= 0.000 < 0.05) and paired samples t-test (Sig= 0.000 < 0.05), there are statistically significant differences, which reflect the effect of Fully Fluent. These results indicate that AI-based tools like Fully Fluent can enhance oral proficiency and foster positive learning attitudes. Practically, the findings suggest that AI speaking applications be used as supportive tools to enhance EFL instruction and build learner confidence in authentic communication.

Keywords: *Artificial Intelligence, Chatbot, Fully Fluent, speaking skills, EFL learning*

Introduction

Utilizing information and computer technology is why we research in an educational setting. Technology has ushered in various possibilities in English instruction, making learning and engagement more dynamic. In this age of rapid technological development, Artificial Intelligence (AI) has become a valuable assistant across various fields, particularly education, as it enables quick information access and supports more effective learning processes (Maulidianti et

al., 2024). The integration of AI has substantially transformed the educational landscape, driven by the aspiration to enhance the quality of learning and make it more engaging (Pratama & Hastuti, 2025). With the rise of social media and modern technology, especially smartphones, teachers are increasingly required to identify and apply the right technological tools for developing effective teaching and learning media (Kim et al., 2021). Moreover, the efficient use of AI in English language instruction improves students' speaking, listening, reading, and writing abilities (Abimanto & Mahendro, 2023). It can be an excellent tool for developing speaking skills by providing students with authentic and engaging situations to converse and practice actively.

Enhancing proficient second language speaking abilities is essential for achieving communicative competence (Ding & Yusof, 2025). However, many English as a Foreign Language (EFL) learners experience Foreign Language Speaking Anxiety (FLSA), characterized by fear and anxiety when attempting to speak a second or foreign language, which often hinders their performance (Bárkányi, 2021). In addition, Juhana and Arifin (2017, as cited in Tiana et al., 2024) found that learners frequently face psychological challenges such as fear of making mistakes, shyness, anxiety, and lack of self-confidence.

In the Indonesian educational context, the mastery of speaking abilities is hindered not only by anxiety but also by shyness and lack of confidence. Erdiana et al (2020) found that 38% of 29 EFL students experienced low anxiety, 59% moderate, and the rest high anxiety when speaking English. Similarly, Marlia et al (2023) reported that high school students faced language and non-language problems, including poor pronunciation, limited vocabulary, and a lack of ideas, leading to hesitation or avoidance. As speaking remains a significant challenge for Indonesian learners, researchers and educators have developed technology-enhanced language learning programs to improve this skill (Aktaş, 2023). Therefore, effective media and interventions are essential to address speaking difficulties and motivate students toward English fluency.

One of the most promising solutions for dealing with speaking difficulties is applying Artificial Intelligence (AI) to language learning (Ding & Yusof, 2025) he emergence of AI technologies has opened new avenues for language learning, particularly in speaking practice. AI-powered language-learning software enables personalized, interactive, and on-demand speaking practice (Kim et al., 2021), providing immediate feedback through advanced speech recognition and natural language processing (Nguyen Huu, 2025). Athoillah (2022) suggests that teachers can support English learners by using Mobile Assisted Language Learning (MALL), which promotes learner autonomy through real-time, interactive exercises grounded in behaviorist principles (Lestari & Heryatun, 2025).

In addition, Rusmiyanto et.al (2023) emphasize that AI-powered technologies such as chatbots, speech recognition systems, and virtual tutors make learning more interactive and engaging through adaptive testing and personalized feedback. EFL interaction with technology is made easier and more productive

using advanced tools such as AI-supported personal assistants like ELSA Speak, Babbel, and FluentU, which ensure independent, self-regulated learning for EFL learners (Cường, 2024). Moreover, "AI chatbots have drawn significant curiosity, following the mannerisms of both instructor and student," as stated by Haristiani (2019, as cited in Kim et al., 2021). They are equipped with teaching methodologies to imitate teachers, and to emulate learners, they adopt learning styles and strategies. Such AI chatbots can assist teachers in improving students' speaking skills. One of these Artificial Intelligence applications is Fully Fluent, available on the Play Store and App Store.

Fully Fluent is an AI-taught language learning app that enables you to converse in different languages, including English, Spanish, French, Hindi, Portuguese, and Mandarin Chinese (Softonic, 2025). It gives personalized feedback and can help users speak naturally, easily having a natural feel like a native. Equipped with an AI tutor, "Fifi, the app allows users to ask questions and get immediate answers, though it might not seem like a real human because of the lack of natural breath and speech fillers (Lestari & Heryatun, 2025). It provides a space for language learners to practice their target language in different settings and act as an interlocutor in speaking assessments, assigning a score based on the quality of speaking (Fully Fluent Inc., 2023). The app offers both premium and free versions, with the free version limited to specific topics and containing ads that may interrupt conversations.

It includes "tap to speak" and "tap to cancel" options, allowing users to manage their responses flexibly. According to the study of Lestari & Heryatun (2025) "The strength of Fully Fluent is the AI tutor, who gives instant personalized feedback and structured role-play environments for learners to practice in a supportive, non-judgmental environment". Its standout features include speech recognition for accent and fluency improvement, flexible conversation modes, and a constant, stress-free AI tutor that helps build confidence (Ramos, 2024). Designed for practical conversation and honest communication, Fully Fluent has been reviewed as effective for natural language use (Selvi et al., 2025). The app is well-received with an average user rating of 4.7/5 on iOS (395 reviews) and 4.5/5 on Android (26,925 reviews) (Apple, 2025; AndroidRank, 2025). Users describe it as "helpful", "easy to use," "dynamic, just like with a real person", with only minor complaints about subscription terms or bugs—overall, the response is overwhelmingly positive.

By integrating its advanced conversational design and real-time feedback features, Fully Fluent directly addresses the challenges Indonesian EFL learners face, such as low speaking confidence, limited fluency, and speaking anxiety, through its advanced conversational design and real-time feedback features. Its AI-powered role-playing and immediate correction features offer authentic, low-pressure speaking situations that enable students to practice without fear of being judged—exactly the difficulties raised in past studies of EFL learners. As a result,

the usage of Fully Fluent coincides with the current need for technology-enhanced, affective, and skill-based interventions that increase pronunciation and fluency while reducing anxiety, making it a promising tool for promoting communicative competence in Indonesian classrooms.

New empirical research has consistently shown the effectiveness of artificial intelligence (AI) tools such as chatbots, mobile apps, and automatic speech recognition systems in enhancing EFL learners' speaking skills, motivation, and enjoyment. Qiao & Zhao (2023) found significant improvements in L2 speaking performance and self-regulated practice among Chinese EFL students using AI-based instruction. Du & Daniel (2024) reported that AI-driven chatbots increase speaking practice, learner engagement, and communication willingness. Similarly, Sun (2023) demonstrated that automatic speech recognition (ASR) with peer correction improves pronunciation and speaking task performance. Annamalai et al. (2023) further revealed that conversational chatbot use enhances motivation, autonomous practice, and user experience, supporting its potential for scalable blended learning.

Several recent Indonesian studies also highlight the promising use of AI-based applications to improve English-speaking skills. Kholis (2021) found that using the ELSA Speak app enhanced pronunciation and motivation through instant feedback. Likewise, Kumalasari & Wulandari (2025) reported positive student perceptions of ELSA Speak in improving speaking ability, with greater benefits under lecturer guidance. In addition, Napitupulu et al. (2025) showed that technology-mediated teaching significantly improved rural students' English-speaking performance, as indicated by higher post-test scores in the experimental group.

Most of the previous AI-assisted language learning research was carried out among university students or in international settings; therefore, Indonesian high school learners are untapped, marking a clear research gap. Nationally, Indonesian students' English proficiency remains low. According to EF Education First English Proficiency Index (2024) Indonesia is ranked 80th out of 116 countries with a score of 468, which is classified as "Low proficiency." Although studies have reported gains in pronunciation, motivation, and user satisfaction, little empirical evidence exists about the impact of AI applications on FLSA with standardized measures and performance tests. Existing studies often involve small samples, short interventions, and self-report data, affected by teacher support, digital access, and learner shyness.

Thus, few robust, context-targeted studies still link AI-based speaking practice with communicative competence in Indonesian high schools. This study fills these gaps by being one of the first studies to examine the Full Fluent application in the Indonesian high school context regarding speaking performance and FLSA reduction. It advances previous work through a more rigorous design with standardized measures and triangulated data from app logs, ASR (Automatic Speech Recognition) feedback, human scoring, and learner perception. It offers theoretical implications for reducing speaking anxiety and practical guidance for

integrating AI EFL instruction.

Based on these identified gaps and contributions, the study examines how the Fully Fluent App could be meaningfully implemented in Indonesian high school English classrooms. The study not only investigates its effects on students' speaking performance, but it also looks at how teachers and learners perceive its use as a teaching aid. Thus, the study is framed upon the following research questions:

1) How do teachers perceive using Fully Fluent as a tool for teaching English, particularly speaking?
2) What are students' views of learning English speaking skills through Fully Fluent in the classroom?
3) How does the use of Fully Fluent influence students' Speaking skills?

Method

This study employed mixed methodologies, integrating qualitative research with descriptive and quantitative experimental methods, aligning with the research objective of assessing the impact of applying Artificial Intelligence through experimental quantitative perspectives. The Fully Fluent Application was used to enhance students' speaking skills. Descriptive qualitative methodologies were adopted to describe teachers' and students' perceptions of using the Fully Fluent Application as a tool to improve speaking skills. Participants are divided into two groups under the quasi-experimental design: the experimental and control groups (Tiana et al., 2025). The researchers used this technique to determine the effect of a Fully Fluent artificial intelligence Application on students' speaking skills.

The Institutional Review Board (IRB) of Bina Sarana Informatika granted ethical approval for the research design and instruments before data collection, guaranteeing adherence to academic and ethical norms when conducting research with human participants. In addition, permission to conduct the study was obtained from the principal of SMPN 181 Central Jakarta, ensuring that the research was carried out with the school's full consent and cooperation. The research involved 70 students selected from two seventh-grade classes at the junior high school SMPN 181, Central Jakarta. Every class comprises 35 students. Class A is the treatment recipients (the experimental), while Class B is the non-recipients (the control).

Purposive sampling was used to choose the school and classrooms since seventh graders were not only new to studying English but also at a crucial point in their development of foundational speaking abilities, which made them an ideal group for early intervention using AI-assisted language learning resources. This technique enables researchers to recruit participants who meet specific criteria intentionally (Etikan & Bala, 2017). Purposive sampling, a non-probability technique, may, however, result in selection bias, which would restrict the results' applicability outside of the context of the selected participants.

This study employed three instruments for data collection: A research questionnaire seeking students' perceptions of the continuous use of Fully Fluent to foster their English-speaking skills, supplemented by a five-item interview for the teacher about the application's contribution to enhancing students' oral communication proficiency. The interview sessions lasted about 15 minutes each and were audio-recorded and appropriately transcribed to ensure data accuracy. The intervention was carried out over five sessions in two weeks, with the experimental group using the Fully Fluent Application as part of their speaking exercises.

Meanwhile, the control group was taught traditional methods, with the lecturer employing textbook-based training and direct classroom interaction without using artificial intelligence tools. The questionnaire was measured using a dichotomous Likert scale with two options: agree (1) or disagree (0). The Pearson Product-Moment test assessed validity, while Cronbach's Alpha measured reliability (Arikunto, 2019). Among 20 pilot participants, 7 out of 12 items are valid, and the questionnaire is reliable (robs 0.583 > rtable 0.444).

The researchers provided the Fully Fluent application (premium version) for the experimental class during the implementation. They asked the students, one by one, to interact with the personal tutor or AI chatbot. Activities started with simple materials such as introductions and greetings; to further this progress, students practiced describing people's appearance and everyday tasks; they were organized in groups for learning together. Four students in a group practice oral English conversations with their smartphones' cameras turned on as a real speaking scene was simulated. This kind of arrangement is not only for sharing amongst peers but also helps people develop confidence when speaking in front of others.

To ensure implementation fidelity, the teacher received a brief prior training on using the Fully Fluent application, and the researchers monitored each session using an observation checklist to verify that the procedures were carried out consistently across meetings. After that, the researcher evaluated the following using Brown's speaking rubric (2004): grammar, vocabulary, pronunciation, fluency, and comprehension (Qomariah, 2023). Once the data were obtained, they were analyzed using SPSS.

Researchers delivered a questionnaire directly to students in the class after the implementation to collect data. An agree/disagree scale was employed in this questionnaire. Each answer represented students 'perceptions of how being fully fluent might help them improve their speaking skills. The teacher's semi-structured and open-ended interview was conducted to gain more perspectives and feedback about the application. The questionnaire responses were subsequently transformed into frequency and percentage tables. Statistical analysis of the speaking skills assessment rubric data was conducted using SPSS.

The analysis began with a normality test and descriptive statistics. After verifying that the data were normally distributed, a homogeneity test and paired-sample t-test were performed. Finally, the independent-sample t-test was

conducted to compute the primary effect analysis (Priyatno, 2014). Afterwards, the effectiveness value was calculated using the manual formula proposed by Cohen (2019, as cited in Mardiyah et al., 2025) to determine the magnitude of the treatment effect. The formula is expressed as follows:

Cohen's d formula:
$$d = \frac{M_1 - M_2}{SD_{pooled}}$$

Pooled standard deviation formula:
$$SD_{pooled} = \frac{SD_{experimental} + SD_{control}}{2}$$

Where:
d =effect size
M_1 = mean of the experimental group (post-test)
M_2 = mean of the control group (post-test)
SD_{pooled} = pooled standard deviation

$SD_{experimental}$ = standard deviation of experimental group
$SD_{control}$ = standard deviation of control group

Interpretation based on Cohen (2009):

$0 \leq d \leq 0.1$ =No effect
$0.2 \leq d \leq 0.4$ =Small effect
$0.5 \leq d \leq 0.7$ = Moderate effect
$d \geq 0.8$ = Strong effect

Result

1. **Semi-structured, open-ended interviews explored Teachers' perceptions of using Fully Fluent as a teaching aid to enhance students' Speaking skills.**

    A semi-structured open-ended interview was conducted to provide an in-depth understanding of teachers' viewpoints on applying Fully Fluent as a teaching tool to improve students' speaking skills. The following discovery questions yielded insight into what motive, experience, instruction practice, perceived-activity benefit, and barrier led teachers to feel this level of satisfaction with the teaching method used in implementing Fully Fluent into English language instruction.

a. **Why are you using Fully Fluent Apps as a language learning medium to improve students' English mastery, particularly speaking skills?**

"Honestly, this was my first experience applying AI directly with students. It turned out to be very exciting for them and me. They had to speak loudly for the AI (Fully Fluent) to understand their answers, and their growing motivation to learn was truly fun to watch. Overall, the activity created a lively classroom atmosphere and gave students more confidence to express themselves."

It indicates that introducing an AI (Fully Fluent) to the classroom for the first time has helped students speak more clearly, boosted their motivation, made learning activities lively, and brought confidence to talk.

b. **Could you tell us about your experiences using the Fully Fluent for instruction in teaching? How do you feel about the Apps?**

"At first, there was some confusion among the students due to the new method. However, after some explanation and live practice, their worries disappeared. For me, this is something that should be continuously applied in the classroom. I noticed that once students became comfortable, they were eager to try more and encouraged their peers, which added a positive and collaborative spirit to the lesson".

This indicates that although students were initially perplexed by their novel approach, subsequent clear explanation and practice enabled them to adjust rapidly. When they felt at ease, they were anxious to engage and empower one another, supporting what became a lively and friendly classroom climate. The teacher also saw this as a practice to be rehearsed in teaching.

c. **How have you integrated Fully Fluent in your teaching for speaking activities, and what methods have had the best results?**

"*Not yet, but I will surely do so after adjusting the lesson difficulty to ensure that students focus on specific aspects of language skills. This way, their progress can be monitored and evaluated effectively. I am confident that with gradual adjustments, students will feel more supported and motivated, making their improvement more visible and rewarding.***"**

This suggests that the teacher has not yet fully utilised the apps within speaking lesson activities, but intends to do so by advancing or receding the difficulty of lessons to focus on language skill areas. With gradual adjustments, the teacher expects students' progress to be more effectively monitored while fostering motivation, support, and visible improvement.

d. **What benefits have you experienced from using Fully Fluent to teach English, particularly speaking?**

"Using Fully Fluent saves my voice from constantly repeating questions and prevents me from neglecting the rest of the class. I feel I can rely on it while focusing on helping those who need extra support due to their lower ability levels. It also helps me manage classroom time more effectively, which makes the learning process smoother and more enjoyable for everyone."

This demonstrates that being Fully Fluent would bring many practical benefits for teachers, such as reducing vocal strain, providing a more equal focus in sets, and focusing support on students with low ability. It also allows me to be more time-efficient in the classroom, making learning smoother.

e. **What obstacles have you encountered in learning, and how would you suggest improving Fully Fluent for even better results?**

"*So far, there is nothing significant to note. The AI's response time is sometimes slow, especially when the user's pronunciation or voice volume is unclear. Even so, these minor issues encourage students to practice clearer pronunciation and better articulation, which ultimately strengthens their speaking skills*".

This suggests that although no major obstacles were reported, minor issues such as slow AI response time due to unclear pronunciation or low voice volume occasionally occurred. However, these challenges served as opportunities for students to improve their pronunciation and articulation, reinforcing their speaking skills.

Based on the semi-structured interview data, some key concepts about teachers' perspectives on using Fully Fluent as a teaching tool to improve students' speaking skills emerged. Table 1 below contains each research question and the core ideas from the most frequently occurring responses.

Table 1: Teachers' Perceptions of Using Fully Fluent: Thematic Summary

Research Question	Descriptive Findings	Interpretative Insights
a. Why are you using Fully Fluent Apps to improve students' English mastery, particularly speaking?	Teachers noted increased student engagement and confidence due to the app's novelty and AI features.	The creative application of AI fosters interest and drive, establishing technology as a stimulant for active learning.
b. Could you tell us about your experiences using Fully Fluent for instruction?	Teachers faced early confusion but later saw smoother adaptation and student collaboration.	The transition from adjustment to cooperation points to peer learning, which is facilitated by technology and increasing comfort levels in the classroom.
c. How have you integrated Fully Fluent in teaching speaking activities?	Integration is still scarce, primarily during the preparation of brief speaking exercises or the trial phase.	The experimental nature of adoption shows teachers' cautious optimism and their need for more precise implementation instructions.
d. What benefits have you experienced from using Fully Fluent?	Reported benefits include reduced voice effort, better time management, more equitable participation, and more enjoyable sessions.	The application promotes learner-centered interaction and increases the effectiveness of instruction.
e. What obstacles have you encountered, and how can Fully Fluent be improved?	Minor issues with AI delay, pronunciation accuracy, and limited oral feedback were reported.	These challenges highlight the need for improved AI responsiveness and more contextualized speaking features.

2. Students' views of using Fully Fluent as a learning medium to improve their Speaking skills, examined through a questionnaire.

A structured questionnaire was administered to investigate students' attitudes toward using Fully Fluent as a learning platform to enhance their speaking skills. The questionnaire included various statements aiming to reflect the attitudes, experiences, and confidence levels of interacting with the tool among students. Items were designed to measure learning features, such as convenience, motivation, confidence building, and opportunities to practice. Students indicated their agreement or disagreement with each statement, enabling us to identify general perception trends as presented in Table 2 below.

Figure 2. Summary of Students' Views on Using Fully Fluent to Improve Speaking Skills
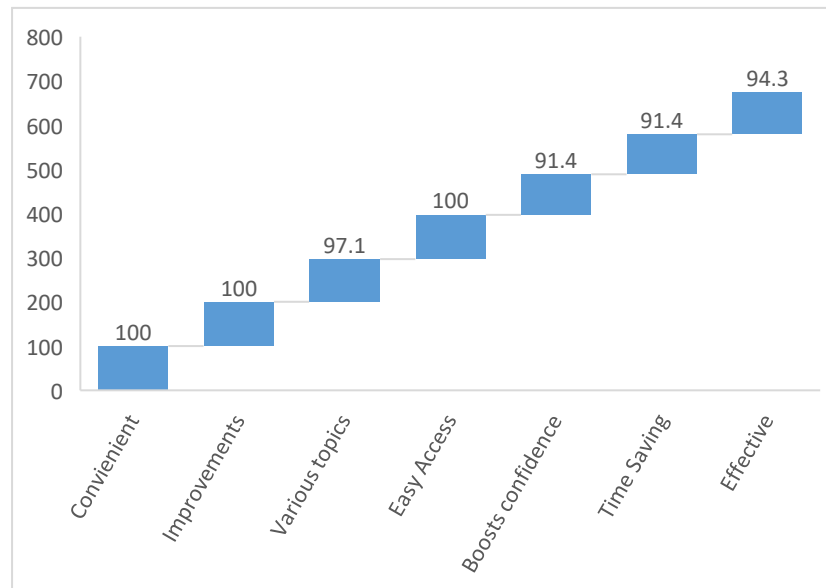
Survey results show that students have positive attitudes about using Fully Fluent for oral skills development. Nearly all participants (100%) reported that it was convenient, fun, and easy to use. Similarly, most students acknowledged that the app provides a variety of speaking topics and situations (97.1%), and it also boosts confidence to speak English (91.4%). Also, students felt re-energized during discussion classes (91.4%) and were aware that Fully Fluent provides good language learning opportunities (94.3%). These results indicate that Fully Fluent is a practical, fun, and supportive tool in learning English speaking skills.

These results indicate, therefore, that Fully Fluent is not a tool to be added to the existing set of tools but rather a viable platform for addressing problems found in speaking classes. The students most appreciate its ease of use, diverse content, and motivational aspect, and a minor level of disagreement indicates room for improvement on classroom integration. Overall, the results of this study demonstrate that technology-based resources such as Fully Fluent can help learners develop their Speaking skills.

3. The Effect of Using the Fully Fluent Application on Students' Speaking Skills

Students' speaking performance was assessed using five equally weighted components—pronunciation, grammar, vocabulary, fluency, and comprehension—adapted from Brown's (2004) speaking rubric. Each component added 20% to the overall speaking score. To ensure score consistency, all speaking performances were assessed by two independent raters (the researcher and an English teacher). Cronbach's Alpha assessed the inter-rater reliability as 0.78, showing adequate agreement among raters. The results of the pre-test and post-test for both the

control and experimental groups are presented in Table 3 below

Figure 3. Summary of Speaking Test Results
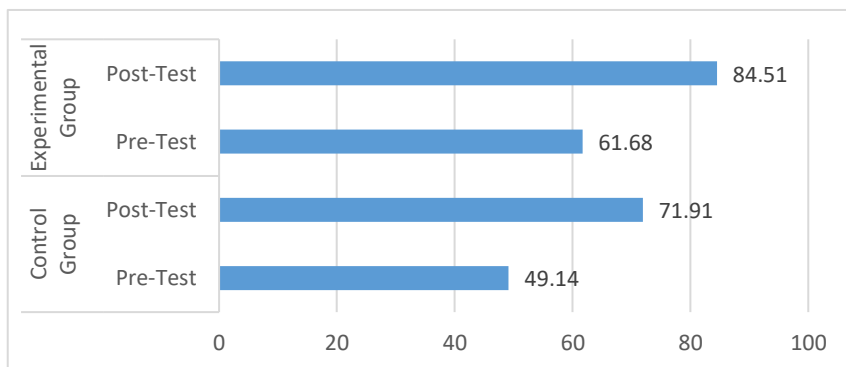
The results of the speaking test for both groups are shown in Table 3. After using the Fully Fluent AI program, the experimental group performed better than the control group, as evidenced by their higher post-test mean score (84.51) compared to 71.91. This finding implies that AI-assisted learning improved students' speaking performance compared to traditional training.

a. **Descriptive Analysis**

Descriptive analysis is used initially to summarize the data, i.e., central tendency, variability, and range of scores, prior to testing hypotheses. It also reveals the presence of early disparities between experimental and control groups, ensuring that subsequent analyses are based on well-defined data patterns. Descriptive statistics for students' oral communication grades for both groups are shown in Table 4.

Table 4. Descriptive Statistics

No	Statistics	Control Class		Experimental Group	
		Pre-Test	Post-Test	Pre-Test	Post-Test
1	Mean	49.14	71.91	61.68	84.51
2	Median	49	70	60	83
3	Std. Deviation	10.22	6.75	8.83	6.63
4	Variance	104.42	45.61	77.93	43.96
5	Minimum	30	57	48	68
6	Maximum	76	91	78	94

The mean score of the posttest in the experimental group is significantly higher (84.51) than that of the control group (71.91) with a 95% confidence interval for the mean, and the median values are alike (83 vs 70). The two groups are almost

equally variable, according to their Std. Deviation (6.63 and 6.75) and the score ranges of both groups are 26 points for the experimental group and 34 points for the control group. In general, the descriptive statistics indicate that students' ability to develop oral communication skills is better in the experimental group than in the control group.

a. Requirement test

1) Normality Test

The normality of the data distribution is one precondition for parametric testing; a normality test checks it. The normal distribution was examined with the Kolmogorov-Smirnov test in SPSS, where the null hypothesis is that the data are normally distributed and the alternative hypothesis proves non-normality. A significance value greater than 0.05 indicates acceptance of the null hypothesis, confirming that the data are typically distributed.

Table 5. Normality Test

NPar Tests (Experiment Class)

One-Sample Kolmogorov-Smirnov Test

		Speaking
N		35
Normal Parameters[a]	Mean	84.54
	Std. Deviation	6.630
Most Extreme Differences	Absolute	.135
	Positive	.135
	Negative	-.098
Kolmogorov-Smirnov Z		.798
Asymp. Sig. (2-tailed)		.548
a. Test distribution is Normal.		

NPar Tests (Control Class)

One-Sample Kolmogorov-Smirnov Test

		Nilai Speaking
N		35
Normal Parameters[a]	Mean	71.91
	Std. Deviation	6.754
Most Extreme Differences	Absolute	.150
	Positive	.150
	Negative	-.105
Kolmogorov-Smirnov Z		.890
Asymp. Sig. (2-tailed)		.407
a. Test distribution is Normal.		

The Kolmogorov-Smirnov test in SPSS shows an experimental group significance of 0.548 and a control group significance of 0.407. As both values are higher than 0.05, it can be concluded that the data in each group are normally distributed. Thus, the requirement for normality is satisfied, and thus a parametric test (Independent Samples T-Test) can be employed in follow-up statistical tests.

2) Homogeneity Test

Depending on which interpretation of the Independent Samples t-test is used, a homogeneity test is applied to check whether the group variances are equal. A significance value greater than 0.05 indicates homogeneous variances, and a less than 0.05 indicates heterogeneity.

Table 6. Homogeneity Test

Nilai Speaking

Levene Statistic	df1	df2	Sig.
.164	1	68	.687

The Homogeneity of Variances Test response is also provided, showing a significance value of 0.687. Since this value is over 0.05, the speaking experiment and control class variances are equal. Hence, the Independent Samples t-test interpretation will be based on the "Equal Variances Assumed" column.

b. Hypothesis Test

1) Independent Samples T-Test

To investigate whether there is a difference in average scores between the two independent groups, such as the speaking experiment class and control class, the Independent Samples t-test was utilized. The null hypothesis would be no difference between the two groups, and the alternative one (which we want to support), that a difference does exist. The critical value used is the significance level; a value greater than 0.05 indicates acceptance of the null hypothesis (no difference between groups), and any value less than 0.05 would lead to rejection of the null hypothesis due to a significant difference.

Table 7. Independent Sample T-Test

Group Statistics

	Groups	N	Mean	Std. Deviation	Std. Error Mean
Nilai Speaking	Experiment Class	35	84.54	6.630	1.121
	Control Class	35	71.91	6.754	1.142

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Nilai Speaking	Equal variances assumed	.164	.687	7.894	68	.000	12.629	1.600	9.436	15.821
	Equal variances not assumed			7.894	67.977	.000	12.629	1.600	9.436	15.821

Since the significance value is less than 0.05 (0.000 < 0.05), the null hypothesis is rejected and the alternative hypothesis is accepted, revealing a significant difference in the speaking scores of the experimental and control groups. The average scores also indicate that students involved in the experimental class perform better than those in the control class after implementing AI technology into their Speaking skills.

2) Paired Sample T-Test

The normality test is performed to determine whether the data are normally distributed, a required assumption for the paired sample t-test, and to verify that our data fairly represents the population. Based on the Kolmogorov-Smirnov approach performed in SPSS, the pretest and posttest significance values are above 0.05, indicating that the data are normally distributed.

Table 8. Normality Test

One-Sample Kolmogorov-Smirnov Test

		Pretest	Posttest
N		70	70
Normal Parameters[a]	Mean	55.41	78.23
	Std. Deviation	11.391	9.197
Most Extreme Differences	Absolute	.083	.101
	Positive	.083	.101
	Negative	-.056	-.073
Kolmogorov-Smirnov Z		.692	.844
Asymp. Sig. (2-tailed)		.724	.475
a. Test distribution is Normal.			

The paired samples t-test is performed to determine if there is any difference between pre-test and post-test speaking scores. The null hypothesis states no difference exists, while the alternative hypothesis suggests a difference.

Table 9. Paired Sample T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	55.41	70	11.391	1.361
	Posttest	78.23	70	9.197	1.099

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pretest - Posttest	-22.814	6.300	.753	-24.316	-21.312	-30.298	69	.000

Based on the table above, the significance value is 0.000, less than 0.05. Thus, the null hypothesis is rejected, and the accepted alternative hypothesis implies significant differences between the pre-test and post-test results. Similarly, the average scores indicate that the post-test mean is higher than the pre-test mean, indicating improved speaking performance.

3) Test of Effect Size (Cohen's d)

Cohen's d was computed to assess the strength of the treatment effect between groups. Beyond statistical significance, this test offers a standardized assessment of the intervention's efficacy. The following is a presentation of the entire computation process.

$$d = \frac{M_1 - M_2}{SD_{pooled}}$$

Pooled standard deviation formula:

$$SD_{pooled} = \sqrt{\frac{SD_{control}^2 + SD_{experimental}^2}{2}}$$

$$SD_{pooled} = \sqrt{\frac{6.63^2 + 6.75^2}{2}} = 6.69$$

$$d = \frac{84.51 - 71.91}{6.69} = 1.88$$

According to Cohen's (2009) formula, the obtained effect size (d = 1.88) indicates a high level of effectiveness. This demonstrates that using the Fully Fluent artificial intelligence application significantly improved students' speaking skills compared to traditional techniques.

Discussion

The teacher's interview revealed an approach to applying Fully Fluent in speaking classes. Some reported benefits were higher student motivation, improved class participation, reduced vocal strain for instructors, and time saving. These findings corroborate earlier research that asserts AI and MALL-assisted tools enhance learner motivation and offer opportunities for ongoing, low-stakes practice (Kim et al., 2021; Athoillah, 2022; Pratama & Hastuti, 2025). The teacher also described how students were initially Confused, but afterwards adjusted, displaying a known pattern in the literature (Maulidianti et al., 2024).

Theoretically, these findings correlate with Krashen's Input Hypothesis, where AI-generated feedback provides comprehensible input that facilitates natural language acquisition. Likewise, the interaction hypothesis is supported by the students in the co-construction of meaning through interactive AI feedback. However, the teacher acknowledged that the system was still not highly integrated into the lesson plans, and thus, the sustainability and long-term value of instruction were questioned, as well as the gains made. The sluggish response of the system, particularly in identifying muzzy pronunciation, is symptomatic of lingering ASR accuracy problems (Lestari & Heryatun, 2025), which can interrupt the input-interaction cycle, and is an essential factor in FSLA.

Students' responses were also good, nearly everyone mentioning that the app was convenient, fun, and helpful for speaking practice. Qualitatively, this was reinforced by the survey results, where 100% of participants reported Fully Fluent as convenient and easy to use, 97.1% mentioned that it offered diverse speaking topics, and over 90% reported enhanced confidence and engagement. Theoretically, such attitudes confirm that AI usage facilitates affective support, self-directed learning, and communicative inclination—critical factors in lowering the affective filter (Rusmiyanto et al., 2023; Qiao & Zhao, 2023; Du & Daniel, 2024). 100% agreement rate, the consensus can result from social desirability bias, novelty effects, or teacher influence rather than genuine communicative improvement.

Furthermore, self-rated confidence is not always an indication of actual communicative ability. Overly generous ratings may also be a response bias artefact that implies Fully Fluent is perhaps exerting more influence on motivation and affective aspects, but less on deeper linguistic competence. Equity issues of ownership, subscription, and internet availability contribute to scalability and

fairness issues and must be resolved before large-scale application in Indonesian schools.

Quantitative findings corroborate qualitative impressions: the experimental group outperformed the control group with a post-test mean of 84.51 compared to 71.91. Both groups met the normality and homogeneity assumptions, warranting the statistical comparison. The Independent Samples t-test showed a significant difference (p = 0.000 < 0.05), which attests that AI-supported learning led to statistically significant improvement in speaking performance. The paired samples t-test also confirmed substantial pre–post gains in the experimental group. The effect size (Cohen's d = 1.88) indicated a significant practical effect, demonstrating that Fully Fluent significantly raised scores by a large extent and practically improved students' speaking performance.

Compared to previous ASR and chatbot-based interventions (Qiao & Zhao, 2023; Sun, 2023; Annamalai et al., 2023), this effect size represents an even more substantial learning effect, highlighting the pedagogical potential of AI-supported tools when systematically implemented. However, the control group's comparatively high mean score (71.91) demonstrates that traditional teaching had a beneficial impact on oral communication skills, reinforcing that Fully Fluent is best used as a support scaffold rather than a replacement for classroom instruction. The enhancement can theoretically be accounted for through feedback loops that prevent error fossilization, promote automatization, and reduce speaking anxiety (Bárkányi, 2021).

From a blended learning model, the research demonstrates that Fully Fluent is utilized most effectively as a scaffolding tool in teacher-led contexts rather than in isolation (Athoillah, 2022; Rusmiyanto et al., 2023). While behaviorist-style repetitive practice supports pronunciation accuracy, discourse-level competence is maintained through socio-constructivist classroom interaction (Kumalasari & Wulandari, 2025). As such, finding the optimal rate of teacher facilitation and AI-based feedback remains a pertinent pedagogical issue. This study stresses the importance of intensive teacher training, strong technological infrastructure, and careful attention to sustainability. Technical problems such as slowness of AI response and limited access must be minimized to maintain learner motivation. Longitudinal evaluation must be incorporated in future adoption to study whether the learning is maintained after some time and in various classroom environments.

Given the significant short-term effect size, follow-up studies should examine if these improvements are sustained with long-term use and in naturalistic classroom environments. The qualitative and quantitative data findings reveal a clear pattern: AI-powered tools can ease speaking anxiety, boost motivation, and inspire participation. However, their long-term impact on language development remains to be seen. Therefore, AI should be viewed as a supportive companion to teachers, not a substitute for them. For educators, Fully Fluent offers opportunities to extend speaking practice beyond the classroom and nurture learner independence. For researchers, future studies are encouraged to explore how such

tools can be sustained, adapted, and scaled within Indonesia's diverse educational settings.

Conclusion

This study found that integrating AI with English-speaking classes provided perceptual and empirical benefits. Teachers and students viewed the use of Fully Fluent positively, noting its effects on motivation, confidence, and class participation. Quantitative data confirmed these perceptions, revealing statistically significant improvements in speaking performance in the experimental group and a large effect size (d = 1.88). These findings strongly support major second language acquisition theories, especially Krashen's Input Hypothesis and the Interaction Hypothesis. AI environments can deliver meaningful input, foster interaction, and help reduce foreign language speaking anxiety through multiple, low-stakes exposures. However, these promising results should be considered with caution. Factors such as purposive sampling, short treatment durations, and potential novelty effects may have influenced the improvements. Additionally, the relatively strong performance of the control group suggests that AI tools are most effective as supplementary resources rather than replacements for instructor-led teaching.

In practice, the results highlight that Fully Fluent's strategic and blended design can improve speaking instruction when integrated with effective pedagogical planning. Teachers are encouraged to incorporate the tool into structured communicative tasks rather than using it as an independent exercise. Alternatively, learners can best use it by practising independently outside class to boost their fluency and confidence. To promote inclusion and sustainability, educational institutions must equally provide access to technology, such as reliable internet and sufficient devices. Focusing on these aspects can make AI more effective, inclusive, and sustainable in English language education.

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