

FLIPPING THE CLASSROOM WITH AI: ENHANCING EFL STUDENTS' SPEAKING SKILLS THROUGH SMALLTALK2ME

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Abstract

This study investigates the effect of integrating SmallTalk2Me AI within a flipped classroom model on students' English speaking skills. A pre-experimental design with a one-group pretest-posttest structure was employed at SMA Negeri 1 Purwoasri, East Java, Indonesia. The sample consisted of 22 eleventh-grade students from class XI SAINKES 6, selected through cluster sampling. Students' speaking skills were assessed across five components grammar, vocabulary, comprehension, fluency, and pronunciation using Brown's (2004) speaking rubric. The intervention followed a three-stage flipped classroom procedure: pre-class independent study via instructional video, in-class communicative practice, and post-class self-study using SmallTalk2Me AI for personalized feedback. Data were collected through speaking tests and analyzed using a paired-sample t-test. The results showed a substantial improvement in students' speaking performance, with the mean score increasing from 39.82 (pre-test) to 79.82 (post-test). The paired-sample t-test indicated a statistically significant difference ($p = .000 < .05$). These findings demonstrate that integrating SmallTalk2Me AI into a flipped classroom is an effective strategy for improving EFL speaking skills among senior high school students.

Keywords: *SmallTalk2Me AI, flipped classroom, speaking skill, recount text*

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INTRODUCTION

English speaking proficiency is increasingly recognized as an essential competency in the era of globalization. Crystal (2003) argues that English functions as a global bridge connecting individuals across cultures, economies, and academic fields, making spoken communication a gateway to broader opportunities. In Indonesia, the national education system guided by Law Number 20 of 2003 underscores the importance of equipping students with skills relevant to global society, with English speaking ability serving as a key indicator of communicative readiness. At the senior high school level, however, students consistently struggle to develop adequate speaking skills, with common barriers including limited practice time, pronunciation difficulties, fear of making mistakes, and low self-confidence (Sabilla & Kaniadewi, 2025; Ur, 1996).

Traditional teaching methods have proven insufficient in addressing these challenges. Conventional classrooms typically prioritize teacher-centered content delivery, leaving students with minimal opportunities for meaningful speaking practice (Harmer, 2007). Anxiety arising from peer judgment and over-reliance on the mother tongue further restrict student participation (Ur, 1996). These challenges were clearly evident at SMA Negeri 1 Purwoasri, where eleventh-grade

students demonstrated markedly low speaking performance prior to intervention, with an average pretest score of 39.76 out of 100.

The rapid development of educational technology has created promising opportunities for more effective language instruction. The flipped classroom model introduced by Bergmann and Sams (2012) has gained considerable attention for its potential to maximize speaking practice time by relocating content delivery to outside the classroom through digital media (Bishop & Verleger, 2013). Complementing this model, AI-powered language tools such as SmallTalk2Me AI offer learners immediate, personalized feedback on pronunciation, grammar, and fluency. Research confirms that AI-mediated speaking activities outperform traditional methods in boosting EFL learners' oral skills and communication confidence (Fathi, Rahimi, & Derakhshan, 2024), and that AI-powered speech recognition technology effectively improves EFL learners' pronunciation and speaking skills through pretest-posttest intervention (Dennis, 2024).

Despite growing evidence supporting both approaches independently, studies that integrate AI tools with the flipped classroom specifically for speaking skill development in the Indonesian senior high school context remain scarce. Senjaya and Muhtadi (2023) confirmed through meta-analysis that the flipped classroom significantly outperforms traditional instruction in speaking development, while Mutiara et al. (2024) demonstrated significant pronunciation gains through AI feedback platforms. This study therefore aims to investigate the effect of utilizing SmallTalk2Me AI in a flipped classroom on the speaking skills of eleventh-grade students at SMA Negeri 1 Purwoasri, offering evidence toward a replicable model for technology-enhanced EFL speaking instruction.

RESEARCH METHOD

This study adopted a quantitative approach using a pre-experimental design with a one-group pretest-posttest structure. According to Arikunto (2006), this design assesses the effect of a treatment by comparing participant performance before and after the intervention within a single group. While the absence of a control group limits absolute causal inference, this design is appropriate for exploratory research documenting within-group change in a naturalistic school setting (Ary et al., 2010). The research was conducted at SMA Negeri 1 Purwoasri, Kediri Regency, East Java, Indonesia.

The population comprised all eleventh-grade students across ten classes at SMA Negeri 1 Purwoasri. One class XI SAINKES 6, consisting of 22 students was selected as the sample through cluster sampling, a technique appropriate when the population is naturally organized into complete groups (Creswell, 2014). The research instrument was an oral speaking test administered as pretest and posttest, aligned with the recount text genre specified in the Indonesian Merdeka Curriculum's Phase E learning outcomes. In the pretest, students delivered a 1–2 minute oral presentation about their last holiday; in the posttest they presented an unforgettable personal experience.

Speaking performance was assessed using Brown's (2004) rubric across five components: grammar, vocabulary, comprehension, fluency, and pronunciation, each scored 1–5, yielding a maximum of 25, converted to a 100-point scale. Content validity was established through consultation with a qualified validator (Hendryadi, 2014). The treatment consisted of four sessions implementing the three-stage flipped classroom procedure: pre-class independent video study and SmallTalk2Me AI practice, teacher-facilitated in-class speaking activities, and post-class AI practice report submission. The data were analyzed using IBM SPSS Statistics Version 25. Descriptive statistics were used to determine the students' mean scores and standard deviations. Because the sample consisted of fewer than 50 students, the Shapiro-Wilk test was used to examine data normality. A paired-sample t-test was subsequently employed to determine whether there was a statistically significant difference between the pre-test and post-test scores.

FINDINGS AND DISCUSSION

Descriptive Statistics

Table 1 presents the descriptive statistics of students' speaking scores before and after the treatment.

Table 1. Descriptive Statistics of Pre-Test and Post-Test Scores

	N	Mean	Std. Deviation
Pre-Test	22	39.82	9.359
Post-Test	22	79.82	5.721

Table 1 shows the mean score of students in the pre-test was 39.82 with a standard deviation of 9.359, while the mean score in the post-test increased to 79.82 with a standard deviation of 5.721. This result indicates an average improvement of 40.00 points after the treatment was administered. The increase in the mean score suggests that the utilization of SmallTalk2Me AI in a flipped classroom positively contributed to students' learning outcomes.

Normality Test

The Shapiro-Wilk normality test was applied to both datasets to determine whether the pre-test and post-test scores were normally distributed. As shown in Table 2, the pre-test data obtained a significance value of 0.153, while the post-test data obtained a significance value of 0.070. Both values were greater than 0.05, indicating that the pre-test and post-test data were normally distributed. Therefore, the normality assumption was fulfilled, and the Paired-Sample t-Test was selected as the appropriate statistical test to examine the difference between students' pre-test and post-test scores.

Table 2. Results of Shapiro-Wilk Normality Test

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-Test	.162	22	.138	.935	22	.153
Post-Test	.202	22	.020	.918	22	.070

Paired Sample T-test

The paired-sample t-test was conducted to examine whether there was a statistically significant difference between the students' pre-test and post-test scores. The results are presented in Table 3. Based on Table 3, the paired-sample t-test yielded a t-value of -21.937, with a degree of freedom (df) of 21 and a significance value of 0.000 ($p < .05$). Since the significance value was lower than 0.05, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_1) was accepted. This indicates that there was a statistically significant difference between the students' pre-test and post-test speaking scores after the implementation of SmallTalk2Me AI in the flipped classroom.

Table 3. Results of Wilcoxon Signed Ranks Test

	Mean	Std. Deviation	T	df	Sig. (2- taited)
Pre-Test – Post-Test	-40.00	8.562	-21.937	21	.000

Discussion

The findings demonstrate that the integration of SmallTalk2Me AI into a flipped classroom significantly improved students' speaking performance. The increase in the mean score from 39.82 to 79.82 indicates considerable progress after the treatment. The statistical result further confirms that the improvement was significant rather than merely a difference in descriptive scores. This result is in line with Farooqi (2025), who found that AI-generated feedback through SmallTalk2Me significantly improved the speaking performance of Saudi EFL learners. Similarly, Maulidianti et al. (2024) reported a significant improvement in students' speaking scores after the implementation of SmallTalk2Me AI in speaking instruction. The improvement can be associated with the opportunities provided by SmallTalk2Me AI for repeated and independent speaking practice. Before classroom sessions, students could practice speaking using the AI platform and receive immediate feedback. This allowed them to identify their weaknesses and make corrections before

participating in face-to-face speaking activities. Rambe and Daulay (2025) found that students perceived SmallTalk2Me as a useful tool for practicing speaking because it provided real-time feedback, error correction, and opportunities to develop speaking confidence. These features may explain why students in the present study demonstrated considerable improvement after using the platform.

The findings are also consistent with the study conducted by Wicaksono et al. (2025), who found that the use of SmallTalk2Me had a positive effect on students' speaking skills. Their study showed that AI-assisted speaking practice could provide learners with additional opportunities to practice English independently. However, Wicaksono et al. (2025) also highlighted several technical challenges, such as internet connectivity and classroom conditions. This suggests that although SmallTalk2Me can support speaking development, its implementation still needs to be accompanied by appropriate classroom management and teacher guidance. The findings also support the principles of the flipped classroom. In the present study, students used SmallTalk2Me AI for pre-class speaking practice, while face-to-face classroom sessions were used for interactive activities and teacher-guided speaking practice. According to Bergmann and Sams (2012), the flipped classroom moves initial learning activities outside the classroom so that face-to-face time can be used for more active and interactive learning. This approach is particularly relevant to speaking instruction because classroom time can be devoted to communication and practice rather than merely presenting learning materials.

The effectiveness of the flipped classroom for speaking development has also been demonstrated by previous research. Alkhoudary and AlKhoudary (2019) found that the flipped classroom model was effective in improving EFL secondary school students' speaking skills. Similarly, Lestari et al. (2024) reported significant improvements in Indonesian EFL learners' speaking performance after implementing a flipped classroom approach. Furthermore, Senjaya and Muhtadi (2023), through a meta-analysis of previous studies, found that the flipped classroom had a large positive effect on students' speaking ability. These findings support the present study by suggesting that providing students with opportunities to prepare before class and using classroom time for active speaking practice can contribute to improved speaking performance.

The reduction in standard deviation from 9.359 in the pre-test to 5.721 in the post-test also indicates that students' performances became more consistent after the treatment. In addition, the students demonstrated improvement across the speaking components assessed in the study, including pronunciation, grammar, vocabulary, fluency, and comprehension. This suggests that AI-assisted speaking practice may be particularly useful for aspects of speaking that benefit from repeated practice and immediate feedback. However, spontaneous fluency may still require sustained interaction with teachers and peers. As Rambe and Daulay (2025) noted, although SmallTalk2Me can provide useful speaking practice and feedback, human interaction remains important in developing communicative competence.

The findings provide empirical evidence that combining SmallTalk2Me AI with a flipped classroom can create additional opportunities for independent speaking practice while allowing classroom time to focus on meaningful interaction. Farooqi (2025), Maulidianti et al. (2024), and Wicaksono et al. (2025) all provide supporting evidence for the potential of SmallTalk2Me in developing EFL speaking skills, while AlKhoudary and AlKhoudary (2019), Lestari et al. (2024), and Senjaya and Muhtadi (2023) demonstrate the potential of flipped classroom instruction for speaking development. Therefore, the statistically significant improvement found in the present study supports the use of SmallTalk2Me AI integrated with a flipped classroom as a complementary instructional strategy for improving EFL speaking skills.

CONCLUSION AND SUGGESTIONS

The findings of this study indicate that utilizing SmallTalk2Me AI in a flipped classroom significantly improved the speaking skill of eleventh-grade students at SMA Negeri 1 Purwoasri. The students' mean speaking score increased from 39.82 in the pre-test to 79.82 in the post-test, representing an improvement of 40.00 points. The paired-sample t-test confirmed a statistically significant difference between the two sets of scores ($t = -21.937$, $df = 21$, $p = .000 < .05$). Therefore, the alternative hypothesis was accepted and the null hypothesis was rejected.

The combination of AI-assisted practice and flipped classroom instruction provided students with opportunities to practice speaking independently before participating in classroom interaction. SmallTalk2Me AI supported repeated practice and immediate feedback, while the flipped classroom allowed face-to-face sessions to focus on interactive and communicative activities. The findings therefore suggest that this combination can be an effective instructional strategy for developing EFL speaking skills. English teachers at the senior high school level are encouraged to adopt this integrated model, particularly for communicative genres such as recount text in the Merdeka Curriculum. Future research should employ a true experimental design with a randomized control group to strengthen causal claims. Longitudinal studies examining the durability of speaking gains and research exploring student attitudes toward AI practice tools over extended periods would further enrich the evidence base for this instructional combination.

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