Journal of Educational Sciences
Journal homepage: https://jes.ejournal.unri.ac.id/index.php/JES

P-ISSN 2581-1657
E-ISSN 2581-2203

# Implications of AI Based as Learning Media to Improve the Speaking Skill From Perspective Students at STIKOM Tunas Bangsa ; Trough Mobile Assisted Language Learning

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**ARTICLE INFO**

*Article history*:

Received: 19 May 2025
Revised: 10 June 2025
Accepted: 11 June 2025
Published online: 05 July 2025

*Keywords:*

Pronunciation,
CAKE,
Mobile-Assisted Language Learning,
EFL,
Technology

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*Article Doi:*

https://doi.org/10.31258/jes.9.4.p.2323-2332



**A B S T R A C T**

This research is based on the urgency of utilizing technology in education, which has now become a necessity rather than relying on traditional methods that are still widely used in teaching information systems students. In the context of using English as a global communication tool in the digital era, conventional teaching approaches are considered less effective in keeping up with the rapid development of information. Therefore, this study explores the implication of Artificial Intelligence (AI) based learning media in improving students' speaking skills through Mobile-Assisted Language Learning (MALL) at STIKOM Tunas Bangsa. The research employs a qualitative –descriptive method involving fourth-semester students who actively use AI-powered mobile applications, such as speech recognition and virtual conversation tools. Data were collected through interviews, questionnaires, and observations to captured students' perspectives on the effectiveness, accessibility, and challenges of using AI in language learning. Findings reveal that most students perceive AI-based media as motivating and helpful in enhancing pronunciation, fluency and confidence. Additionally , this study provides insights into the sociolinguistic evolution of language use by examining how students interact with technological advancements and adapt to global communication demands. The results suggest that AI-integrated MALL can significantly support speaking skill development and create a more personalized, effective, and engaging learning environment.

## 1. Introduction

English is an international language that plays a crucial role in various fields of knowledge in life (Danzeng, 2024; Mohamed, 2024; Soyoof et al., 2024), such as education, business, technology, and global communication. In learning English, there are four main skills that learners must master: listening, speaking, reading, and writing. Among these four aspects, speaking becomes a challenge.

Pronunciation plays a vital role in communication and is an essential component of English language proficiency. However, many EFL students face challenges in mastering correct pronunciation due to phonetic differences between English and their native language, insufficient exposure to native speakers , and limited practice opportunities. As artificial intelligence (AI) becomes more prevalent in educational settings, understanding its effects on language learning outcomes is crucial (Song & Song, 2023).

Pronunciation is one of the most critical aspect of English language learning, directly influencing communication effectiveness, inteligibily, and confidence in spoken interactions. (Pourhosein Gilakjani & Sabouri, 2017). In Indonesia , pronunciation instruction is often teacher centered , relying on traditional methods such as drilling, imitation and phonetic. By assisted the development of mobile-assisted language learning (MALL), new opportunities have, with the advancement, pronunciation learning is no longer restricted to the classromm, a mobile application with voice recognition technology offer student personalized, interactive, and self-paced learning experience.

One such application is “CAKE” on Android App,. Which provides voice recognition-based pronunciation training. The Cake Application was used to hone reading, listening, and speaking abilities. In order to keep students from getting bored while studying, the information was more current and the vocabulary acquisition approach was a quick movie. (Sugandi & Syafiq, 2023), And this app allows learners to practice speaking , receive instant feedback, and compare their pronunciation with native speaker models. Despite on its effectiveness in improving pronunciation among students. Traditional teaching methods often fail to address individual pronunciation difficulties, as they do not provide instant feedback or allow for frequent self-correction (Hermawati et al., 2023) While mobile assisted learning has become increasingly popular, its effectiveness for pronunciation.

The cake application , with its voice recognition system, has a potential to enhance students pronunciation skills by offering real time correction and interactive learning experiences. Speaking is one of the most difficult skill, by looking at someone pronunciation aspects of English learning for students , particularly in EFL contexts, where exposure to native speech is minimal. many foreign language learners find it difficult to express their thoughts effectively (Suparlan, 2020). Pronunciation is one of the most difficult skills in Language learning and teaching.(Pourhosein Gilakjani & Sabouri, 2017).

The diagram illustrates the students’ problems in studying English speaking skills and how the Cake application can be used as a solution to address those problems. It also outlines the focus areas of the research. To address these issues, the diagram proposes the use of the Cake Application, a mobile-based language learning tool that offers interactive features such as pronunciation practice, dialog repetition, and speech recognition. it may shows on the flowchart illustrated as figure 1.

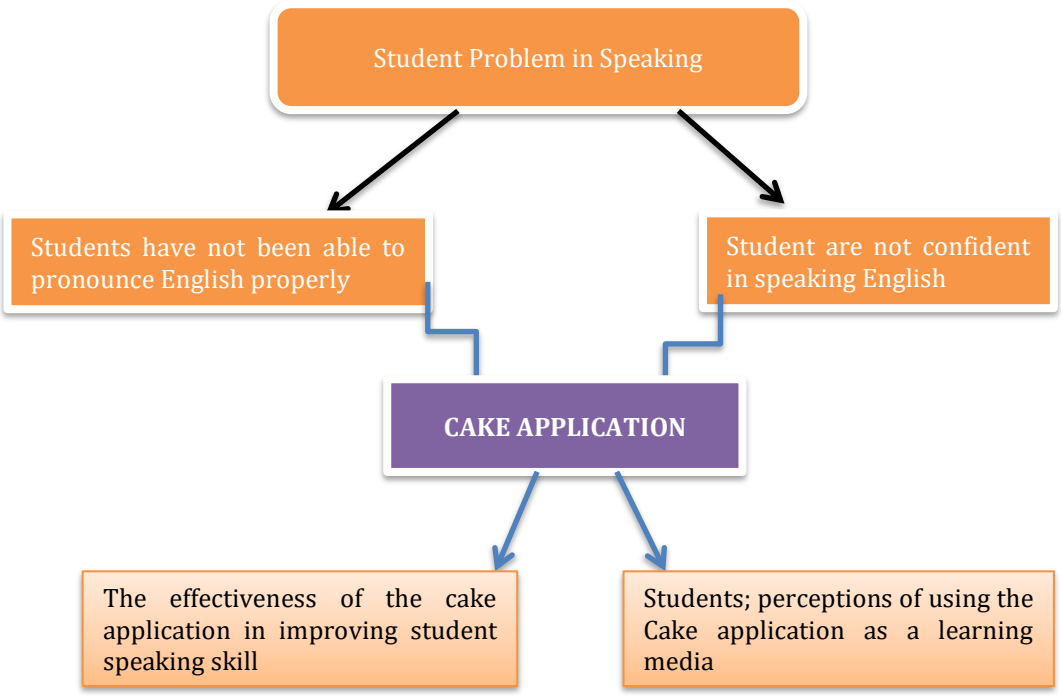


Figure 1: Flowchart of Student problem in English

The cake app is positioned as a central solution that bridges both identified problems. For the focus of the diagram above shows that the effectiveness of the Cake application in improving students' speaking skills focuses on measuring whether the use of the app leads to notice improvement in pronunciation ,fluency, and over all speaking ability. And also about students' perceptions of using the Cake app as a learning media. It explores how students feel about using the app whether they find it useful, motivating, engaging, and easy to use for language learning.

The problem-solving approach in this study, conducted as a case study at STIKOM Tunas Bangsa, focuses on the implementation of Mobile-Assisted Language Learning (MALL) as an innovative solution to improve students' speaking skills. One of the main challenges faced by students in learning English is the limited opportunity to actively practice speaking in the classroom. Many students struggle with pronunciation, lack confidence, and have minimal interaction with native speakers. Therefore, this study adopts a technology-based approach by utilizing the "Cake" application to address these issues. The Cake program is an English learning tool that allows users to advance their language abilities. (Sugandi & Syafiq, 2023) The first approach used is experimental or quasi-experimental, where the study compares students' speaking abilities before and after using the "Cake" application.

This allows the effectiveness of the app in enhancing speaking skills to be quantitatively measured through oral tests, pronunciation assessments, and clarity of speech. The next approach is a quantitative study involving interviews and questionnaires, aimed at understanding students' perceptions of using the "Cake" application in English learning. Through interviews, students can express their

experiences using the app, including its benefits and the challenges they encountered. (Rahmandika et al., 2023). In addition, this technology-based learning approach seeks to integrate the "Cake" application into teaching methods at STIKOM Tunas Bangsa. Instructors can encourage students to use the application as part of their assignments and provide feedback on their practice results, making the learning process more interactive and engaging, and enabling students to practice more actively and independently outside the classroom. Finally, the study also applies an analysis of supporting and inhibiting factors, aiming to identify technical obstacles, accessibility issues, and student motivation in using the "Cake" application. This research can offer recommendations to STIKOM Tunas Bangsa for enhancing the effectiveness of technology use in English language learning.

This research falls under the domain of Mobile-Assisted Language Learning (MALL) and the use of technology-based applications in English language learning, particularly in improving speaking skills. Numerous studies have previously explored the integration of technology in language learning, including the use of Artificial Intelligence (AI)-based applications, speech recognition, and Computer-Assisted Language Learning (CALL).(Artiana & Fakhrurriana, 2024; Rahmandika et al., 2023) Several prior studies have demonstrated that mobile-based learning applications can support the development of speaking skills by providing flexible and practice-oriented training opportunities.

The “Cake” application is one such English learning app that incorporates speech recognition features, interactive video lessons, and pronunciation practice based on real-life conversations. (Aqilah, 2024)Previous research has largely focused on applications such as Duolingo, Babbel, or Rosetta Stone, with limited studies specifically examining the effectiveness of “Cake” in enhancing university students’ speaking abilities. (Pourhosein Gilakjani & Sabouri, 2017)Therefore, while this study aligns with previous research within the MALL framework, it offers a new focus by investigating the use of “Cake” in an academic context. In conclusion, this study contributes to the growing body of research on MALL by emphasizing the “Cake” application within the context of higher education in Indonesia (Anggaraini, 2022; Wilson & Sutrisno, 2022). Through an experimental approach and analysis of student perceptions, this research provides new insights into the effectiveness of educational technology as well as potential challenges in its implementation.

Previous studies on technology-assisted speaking practice have focused on tools like Duolingo, Quizlet, or teacher-developed materials. However, these tools rarely incorporate AI-based speech recognition and real-time feedback like CAKE does Moreover, most studies only examine learner outcomes quantitatively and ignore student perspectives. This study provides novelty by combining:

- ✓ AI-based mobile learning integration (CAKE app)
- ✓ Focus on both performance outcomes and learner perception
- ✓ Development of a replicable speaking module tailored to CAKE
- ✓ Application in an Indonesian higher education context, where such tools are still underutilized

Its focus on the use of "Cake" to improve English-speaking skills in higher education—particularly at STIKOM Tunas Bangsa—which differentiates it from prior research that has predominantly explored other applications such as Duolingo or Babbel. (Pokhrel, 2024) This study centers on the effectiveness of speech recognition features, dialogue practice, and automatic feedback in "Cake."(Haryadi et al., 2023) Furthermore, it combines an experimental method with student perception analysis, offering a more comprehensive understanding of the application's benefits and contributing practical recommendations for educators. (Fitri Wulandari et al., 2024) This study not only highlights the role of mobile applications in language acquisition but also emphasizes the importance of technological development in enhancing learning experiences. (Artiana & Fakhrurriana, 2024) As digital tools continue to evolve, their integration into educational settings provides innovative ways to improve language skills, particularly speaking. (Pokhrel, 2024) The implementation of advanced features such as real-time speech recognition, interactive multimedia content, (Aqilah, 2024; Losi et al., 2023) and AI-driven feedback in applications like "Cake" exemplifies how technological advancements can support more personalized, engaging, and effective language learning.(Andayani, 2023).

## 2. Methodology

This study adopts a Mixed Methods approach, combining qualitative and quantitative techniques. The qualitative method is used to explore students' perceptions and experiences in using the application. The quantitative method is employed to measure the effectiveness of the application in improving students' speaking skills. The type of research conducted is Research and Development (R&D), focusing on the integration of AI-based media in language learning, particularly in speaking. Location: The study will be conducted at selected formal educational institutions with active English language programs. The respondents consisted of 40 in fourth-semester students of the English Department at STIKOM Tunas Bangsa Pematangsiantar, selected using purposive sampling. The population is All students engaged in English language learning at the selected institutions. The sample is Selected using purposive sampling, consisting all of students or early semester students who will use the CAKE application as part of their learning process. A minimum of 30 participants of STIKOM Tunas Bangsa, will be involved in the quantitative phase to meet statistical validity for pre-test and post-test comparison. In data Collection Techniques : (1) In-depth Interviews:

To explore student perceptions of using the AI Mobile Application in speaking activities. (2) Observation: To observe the learning process, student interaction with the app, and classroom dynamics. (3) Questionnaires: To quantitatively assess students' motivation, perceptions, and learning experiences. (4) Speaking Tests (Pre-test and Post-test):To evaluate the improvement in students' speaking skills before and after using the AI Mobile Application CAKE. (5) Documentation; Data Analysis Techniques are (1) Qualitative Data:

Will be analyzed using thematic analysis—including data reduction, data display,

and conclusion drawing. (2) Quantitative Data: Will be analyzed using paired sample t-test to determine the significance of improvement in students' speaking ability.

## 3. Results and Discussion

This research applies a descriptive quantitative method, aiming to explore students' perspectives toward speaking skills in English. The data were collected using a closed-ended questionnaire based on a 4-point Likert scales. Table 1 presents the Likert scale used in this study to quantify students' responses regarding their perspectives on English speaking skills. A 4-point Likert scale was employed to avoid a neutral option and encourage respondents to express a clear opinion. The scale ranges from 1 to 4, where a score of 4 indicates "Strongly Agree," 3 indicates "Agree," 2 represents "Disagree," and 1 stands for "Strongly Disagree." This scale allows for the measurement of varying degrees of agreement or disagreement with the statements provided in the questionnaire, enabling the researchers to capture the students' attitudes in a structured and interpretable format. as follows on Table 1 below:

Table 1. Point Likert scale

| Score | Category |
|---|---|
| **4** | Strongly Agree |
| **3** | Agree |
| **2** | Disagree |
| **1** | Strongly Disagree |

### Validity Test

This statistical method assesses the degree of correlation between each item score and the total score. A questionnaire item is considered valid if the correlation coefficient (r count) exceeds the critical value of r table. In this study, with a sample size of 40 respondents and a significance level of 5%, the r table value is approximately 0.312. The Pearson Product Moment Correlation was used to test the validity of each questionnaire item: An item is considered valid if the r count > r table. For N = 40 and significance level of 5%, r table ≈ 0.312.

Table 2. Validity Test

| No | Item | r count | r table | Status |
|---|---|---|---|---|
| 1 | Q1 | 0.456 | 0.312 | Valid |
| 2 | Q2 | 0.391 | 0.312 | Valid |
| 3 | Q6 | 0.287 | 0.312 | Invalid |

### Reliability Test

The reliability of the instrument was tested using Cronbach's Alpha formula:
Descriptive Statistics.Table 3 presents the descriptive statistics for each indicator, including the number of items, total score, mean score, and its corresponding

category. The indicator "Confidence" shows a mean score of 3.10, categorized as "Good," suggesting that students generally feel confident in their speaking skills. The "Difficulty" indicator has a lower mean score of 2.60, categorized as "Fair," indicating that students still face some challenges in speaking English. The "Importance" indicator scores the highest mean of 3.42, which falls under the "Very Good" category, reflecting students' strong belief in the significance of speaking skills. Lastly, the "Participation" indicator has a mean of 2.85, categorized as "Good," suggesting moderate engagement in speaking activities. Example result of mean per indicator shown Table 3:

Table 3. Reliability Test

| Indicator | No. of Items | Total Score | Mean | Category |
|---|---|---|---|---|
| Confidence | 5 | 620 | 3.10 | Good |
| Difficulty | 5 | 520 | 2.60 | Fair |
| Importance | 5 | 685 | 3.42 | Very Good |
| Participation | 5 | 570 | 2.85 | Good |

Table 4. a Mean Score

| Mean Range | Category |
|---|---|
| 3.26 – 4.00 | Very Good |
| 2.51 – 3.25 | Good |
| 1.76 – 2.50 | Fair |
| 1.00 – 1.75 | Poor |

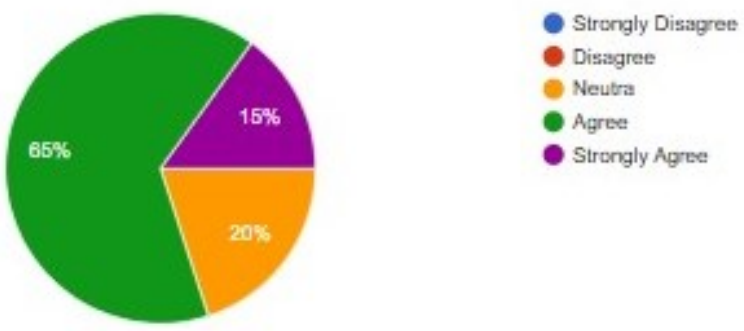


Figure 2: Students Perception about cake application

This study involved students from STIKOM Tunas Bangsa who have experienced the use of AI-based applications as a learning medium, particularly those integrated with mobile assisted language learning to enhance their speaking skills. The respondents were selected using purposive sampling, targeting students in the fourth semester of the English Language and Communication program, as they had already been exposed to speaking courses and was familiar with mobile learning tools.

These students had varying levels of proficiency in English speaking but shared ha common experience in utilizing AI – based mobile application such as speech recognition tools, language learning apps for example ( DuoLingo, Cake, Bakery

Town, ELSA speak, my daily English, and so on and virtual assistants). The diversity of their experiences and engagement with mobile learning platforms provided valuable insights into how AI – based media influences their speaking skill development.

To collect relevant data, a combination of structured questionnaire and semi-structured interviews was administered. The respondents were asked to shared their perspectives through questionnaires and follow – up interviews and follow up interviews, the insights gathered from these respondents are crucial to understanding the boarder implication allow the researcher to gather both quantitative and qualitative data their regarding their attitudes by facilitate by mobile AI tools.The respondents consist of 44 students that are divided into 4 group each group consist 37 minimum – 40 maximum students.

## 4. Conclusion

Based on the problems identified in students' speaking skills—such as poor pronunciation and lack of confidence—there is a clear need for more effective and interactive learning media. The use of the Cake application offers a promising solution by providing mobile-assisted language learning features that allow students to practice speaking anytime and anywhere. Through this research, two important aspects are highlighted: the effectiveness of the Cake application in improving students' speaking performance, and students' perceptions of its use as a learning tool. It is expected that the integration of technology like the Cake app can enhance students' motivation, increase their speaking confidence, and support their language development in a more engaging and autonomous learning environment. Students perceive speaking skills as important, especially for their academic and professional development (mean = 3.42). They show moderate confidence and good participation in speaking activities (mean ≈ 3.00). However, difficulties still exist, particularly in expressing ideas orally (mean = 2.60), indicating a need for improved teaching strategies that promote more interaction and practice.

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How to cite this article:

Sormin, R. K., Sari, I. P., Purba, A., & Rizki, F. (2025). Implications of AI Based as Learning Media to Improve the Speaking Skill From Perspective Students at STIKOM Tunas Bangsa ; Trough Mobile Assisted Language Learning. *Journal of Educational Sciences*, *9(4)*, 2323-2332.