

## THE EFFECTIVENESS OF USING CAKE APPLICATION TO IMPROVE STUDENTS' SPEAKING ACHIEVEMENT ACROSS MULTIPLE INTELLIGENCES

Ika Permata Sari<sup>1</sup>, Lasim Muzammil<sup>2</sup>, Siti Mafulah<sup>3</sup>

<sup>1</sup>[ikapermata85@gmail.com](mailto:ikapermata85@gmail.com) <sup>2</sup>[lasim.muzammil@unikama.ac.id](mailto:lasim.muzammil@unikama.ac.id), <sup>3</sup>[siti\\_mafulah@unikama.ac.id](mailto:siti_mafulah@unikama.ac.id)  
<sup>1,2,3</sup> Prodi Magister Pendidikan Bahasa Inggris, Universitas PGRI Kanjuruhan Malang

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**ABSTRACT** In the modern era of digital learning, enhancing students' English-speaking abilities remains challenging, especially when learners possess diverse cognitive abilities. Mobile-assisted language learning (MALL) applications, such as the Cake application, provide promising solutions by addressing students' diverse intelligences. This research aimed to (1) determine whether there is a significant difference in speaking achievement between students taught using the Cake application and those taught using YouTube, and (2) to determine whether multiple intelligences—specifically linguistic, visual-spatial, and interpersonal intelligences—influence students' speaking performance. A quasi-experimental methodology was used, with two randomly assigned classes: one experimental group using the Cake program and one control group utilizing YouTube. After six sessions, a posttest was administered to measure pupils' speaking abilities. The results showed significant improvements in the experimental group ( $p = 0.032 < 0.05$ ). A factorial two-way ANOVA revealed a significant interaction between media consumption and multiple intelligences ( $p = 0.000, < 0.05$ ). These findings suggest that incorporating digital materials linked to students' cognitive profiles can significantly enhance speaking abilities. The research emphasizes the value of individualized, intelligence-based approaches to teaching the English language.

**Keywords:** Cake application, multiple intelligences, oral procedural text, speaking

### INTRODUCTION

English speaking proficiency is critical in preparing Indonesian students for global involvement. Despite a minor increase in the English Proficiency Index (EPI) score, Indonesia remains in the 'poor proficiency' category, trailing other ASEAN nations (Education First, 2023). As English remains a global and regional lingua franca, especially for ASEAN cooperation (Matsuda, 2020), developing communicative competence becomes increasingly critical not only for academic achievement but also for accessing international opportunities (Kirkpatrick & Liddicoat, 2019; Astuti & Rasyid, 2022).

Nevertheless, Indonesian students continue to struggle to speak fluently. Internal concerns, such as fear of making errors, anxiety, and low self-confidence (Nguyen & Tran, 2020), as well as language restrictions such as inadequate vocabulary and pronunciation (Derakhshan et al., 2022), all contribute to apprehension about speaking. Externally, restricted actual speaking chances and uninteresting educational conditions impede their growth (Putra & Fatimah, 2022; Yunus & Arshad, 2021). Teacher techniques and a lack of motivating strategies also have an impact on student involvement (Walsh, 2021).

In responding to these problems, mobile-assisted language learning (MALL) tools like the Cake app provide new ways to improve speaking abilities. Cake offers interactive multimedia material, automatic voice recognition, and enhanced feedback systems, allowing students to emulate native pronunciation, repeat input, and gain confidence (Fitria, 2021; Dorji & Sakulwongs, 2024). Previous research has demonstrated that the Cake application improves vocabulary, fluency, and learner engagement (Hamdany et al., 2022; Pulungan, 2020), which aligns with larger MALL trends that emphasize learner autonomy as well as inspiration (Figueiredo, 2023; Ishaq et al., 2021).

Considering this potential, few studies have looked into how the efficiency of Cake varies according to learners' cognitive characteristics. Gardner's Multiple Intelligences (MI) hypothesis proposes that people learn differently depending on their dominant intelligences,

which include verbal, visual-spatial, and interpersonal skills (Gardner, 2011). While MI theory continues to have an impact on educational practice (Armstrong, 2018), its application to mobile-based speaking teaching is little understood. This study fills a gap by evaluating whether students' various intelligences influence their speaking performance while employing the Cake application.

Particularly, this study aims to: (1) determine whether there is a significant difference in speaking achievement between students taught using the Cake application and those taught using YouTube, and (2) determine whether multiple intelligences influence students' speaking performance when using Cake. The results are likely to help with the integration of technology and differentiated instruction in EFL classes, especially within the framework of the Merdeka Curriculum.

## **LITERATURE REVIEW**

### **Speaking Achievement Based on Merdeka Curriculum for Vocational School**

Speaking accomplishment, as defined by the Kurikulum Merdeka, relates to students' capacity to articulate ideas fluently, correctly, and appropriately through oral communication in real-life contexts. For vocational high school students, this involves clearly and effectively presenting spoken procedural texts, especially those connected to daily and professional contexts such as healthy food preparation. According to the Merdeka curricular framework (Kemendikbudristek, 2022), language learning ought to focus on communicative ability, critical thinking, and personal expression. Students are encouraged to develop speaking abilities that will benefit their future employment and daily encounters.

Numerous research studies have stressed the value of speaking in vocational education. However, many focus only on general speaking abilities without considering procedural text genres or curricular alignment (Yuliana & Arifin, 2022). Furthermore, while communication activities are encouraged, their execution frequently lacks authenticity and real-world applicability, resulting in poor student involvement (Nugraha & Fadhilah, 2021). This study bridges the gap by matching speaking results with procedural texts in the vocational curriculum and utilizing technology to boost authenticity and motivation. The grading criterion for speaking competency in the present research is based on Luoma (2004) and includes fluency, correctness, coherence, and substance, with a passing score of 75.

### **Cake Application in the EFL Classroom**

The Cake application is a mobile English learning platform that uses brief interactive videos with native speakers to improve language input and output. Its features, including speaking tests, daily learning goals, real-world vocabulary, and interactive aspects, provide a multimodal, student-centered environment that encourages speaking practice. The program exposes users to real phrases regularly and promotes active verbal practice, both of which are essential for speaking growth.

Past study supports the use of digital tools for teaching speaking. Pratiwi and Sari (2021) discovered that students who used Cake had greatly increased their vocabulary learning and speaking confidence. Similarly, Herlina et al. (2022) found that Cake's short films helped students lessen their speaking nervousness. However, the majority of this research was undertaken in regular secondary schools, with few focusing explicitly on vocational students or procedural text types. Furthermore, several studies assessed Cake mainly in terms of motivation or attitude, with no emphasis on speaking achievement. This study addresses that gap by looking into Cake's function in assisting students in creating organized oral procedural texts within the context of the Merdeka Curriculum.

### **Multiple Intelligences in the EFL Classroom**

Howard Gardner's Multiple Intelligences (MI) hypothesis states that learners have a variety of intellectual talents that impact how they perceive and utilize language (Gardner,

2011). Three of the nine intelligences are particularly relevant to speaking ability in an EFL setting: linguistic, visual-spatial, and interpersonal. Linguistic intelligence promotes the ability to build meaningful sentences; visual-spatial intelligence helps learners grasp visual clues such as video content or demonstrations; and interpersonal intelligence improves learners' ability to communicate in discussions and collaborative speaking exercises.

A number of studies have used MI in English classes, with favorable results for student involvement and performance (Rahmawati & Fitriyani, 2020; Syahputra, 2023). However, few studies have investigated how MI integrates with digital learning platforms such as Cake. The majority of the literature approaches MI as a broad framework rather than investigating its integration with media-based education. This study fills that gap by investigating how Cake's multimodal qualities match the capabilities of students with distinct intelligences, resulting in better speaking outcomes. By customizing speaking exercises to diverse MI profiles, this study suggests a more accessible and diversified approach to language training.

## RESEARCH METHODS

This study used a quasi-experimental approach with a non-randomised pre-test and post-test control group to investigate the effectiveness of the Cake application in increasing students' speaking ability while accounting for their varied intelligences. Two entire classes were used as samples: the experimental group (20 students from XII Farmasi) and the control group (22 students from XII Teknik Jaringan Komputer), totalling 42 students.

Each group had seven meetings over four weeks. The primary study instruments were a speaking test and a Multiple Intelligences (MI) questionnaire. During the first session, both groups were given a pre-test to examine their initial capacity to produce spoken procedural texts. Following the pre-test, each group received a different therapy. The experimental group was taught using the Cake app, which combines AI-powered verbal feedback, video modeling, and repetition practice. The control group got education through handpicked YouTube videos and textbook-based materials. A post-test was conducted after the treatment to assess the pupils' progress. To investigate the impact of multiple intelligences on students' speaking skills, the experimental group completed a Multiple Intelligences Questionnaire developed from Armstrong's (2009) Multiple Intelligences theory and refined for classroom use by researchers such as Arifin and Husniah (2021). The questionnaire had 30 items that addressed three categories of intelligences related to speaking skills: linguistic, visual-spatial, and interpersonal intelligence. Responses were assessed on a 5-point Likert scale, and the findings were used to classify pupils according to their main intelligence types. This technique enabled the researcher to determine if students with specific intelligences (e.g., linguistic or interpersonal) improved their speaking skills more when using the Cake application.

Throughout the treatment period, students in the experimental group utilized Cake to enhance fluency, pronunciation, vocabulary, and sentence structure. The application's feedback and video capabilities helped them practice. Group discussions, peer criticism, and reflective speaking exercises were all used as learning activities. The control group used a more traditional method, directed by the teacher, using printed resources and YouTube videos as a model. Students in both groups delivered spoken procedural texts prior to taking the post-test. The following table lists the teaching tasks for both the experimental and control classes:

*Table 1: The Teaching Activities in both Experimental and Control Classes*

Meeting	Activity
Meeting 1	Pre-test and Introduction to Procedural Texts
Meeting 2	Introduction and Utilise Cake Application or YouTube for Procedural Texts
Meeting 3	Vocabulary, Language, and Structure Focus
Meeting 4	Practicing with Cake Application or YouTube and

Meeting	Activity
	Preparing Oral Procedural Texts
Meeting 5	Peer Review and Collective Correction
Meeting 6	Refinement and Editing
Meeting 7	post-test

To assure scoring validity, two independent raters were appointed: one English teacher from grade XI and another from grade XII. Two raters applied the Luoma (2004) speaking evaluation rubric, which measures fluency, pronunciation, coherence, and accuracy. Inter-rater reliability was determined using the Pearson Product-Moment Correlation. The pre-test scores showed a strong association ( $r = .82$ ,  $p < 0.05$ ), and the post-test scores demonstrated even stronger agreement ( $r = .91$ ,  $p < 0.05$ ), supporting the reliability of the assessments.

Prior to hypothesis testing, SPSS version 25 was used to evaluate the normality and homogeneity assumptions. The Kolmogorov-Smirnov test revealed that the pre- and post-test scores of both groups were normally distributed ( $p > 0.05$ ). The Levene's Test for homogeneity obtained a significance value of 0.131, showing equal variance between groups ( $p > 0.05$ ). These findings support the use of parametric statistical analysis for assessing hypotheses.

## FINDINGS AND DISCUSSION

### Findings

The study's findings were collated to assess the difference in mean scores between the experimental and control groups. The descriptive data for both groups' post-test outcomes are shown below:

*Table 2. Descriptive Statistics of Students' Speaking Achievement*

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test Experimental Group	20	53	78	65.30	6.906
Post-test Experiment Group	20	70	95	82.20	8.721
Pre-test Control Group	20	60	83	68.25	5.543
Post-test Control Group	20	65	90	76.75	6.664
Valid N (listwise)	20				

The above statistics show that the experimental group's highest post-test score was 95, whereas the control group scored 90. The experimental group's lowest score was 70, whereas the control group scored 65. This shows that the experimental group outperformed the control group regarding the highest and lowest scores. The post-test average score for the experimental group was 82.20, whereas the control group averaged 76.75. This means that the experimental group outperformed the control group regarding average score. Meanwhile, the experimental group's standard deviation was 8.721, whereas the control group's score was 6.664. This shows that the experimental group had a smaller standard deviation than the control group.

The mean differences in these four speaking components between the two groups are shown below.

*Table 3. Mean Differences of the Speaking Components*

Group	Speaking components			
	Fluency	Accuracy	Pronunciation	Content
Experimental Group	21,00	19,88	20,75	20,38
Control Group	18,41	19,56	19,56	19,33
Mean Difference	2,59	0,32	1,19	1,05

Table 2 presents the following observations: First, the mean fluency component scores of the experimental group (21.00) and the control group (18.41) differed by 2.59 points. Second, there was a 0.32 mean difference in accuracy scores between the experimental group (19.88) and the control group (19.56). Third, the experimental group had a mean difference of

1.19 in pronunciation, with a score of 20.75 compared to the control group's mean score of 19.56. Finally, there was a 1.05-point difference in mean scores for the content component between the experimental group (20.38) and the control group (19.33). These comparisons show that the experimental group outperformed the control group in fluency, accuracy, pronunciation, and content.

In order to determine whether there is a significant difference in speaking success between students taught using the Cake application and those taught using YouTube, the researcher used an independent samples t-test on the students' pre-test and post-test data. According to the statistical analysis utilising the independent sample t-test, the mean difference between the pretest scores was -2.950. Furthermore, the two groups showed no significant difference ( $t=0.145$ ,  $p>0.05$ ). It can be inferred that the experimental and control groups were equally skilled at oral procedural texts before receiving different methodologies. The researcher found a significant difference in speaking total scores between the two groups ( $t=0.032$ ,  $p < 0.05$ ) based on independent t-test findings for the students' post-test. Consequently, the findings revealed that utilising the Cake application to teach and learn English oral procedural texts significantly impacted student performance.

Apart from the general effectiveness of the Cake application, this study studied how students' different intelligences affected their speaking performance. Table 4 shows that interpersonal learners scored the highest ( $M = 89.20$ ), followed by visual ( $M = 75.50$ ) and linguistic learners ( $M = 74.00$ ). This suggests that pupils with high interpersonal intelligence benefited the most from the Cake application's engaging and interactive features.

*Table 4: Descriptive Statistics of Students' Multiple Intelligences*

Dependent Variable: Students' Scores			
Multiple Intelligences	Mean	Std. Deviation	N
Interpersonal	89.20	5.051	10
Visual	75.50	5.345	8
Linguistic	74.00	5.657	2
Total	82.20	8.721	20

Following the comparison of performance in speaking oral procedural texts between the experimental and control groups, the researcher attempted to address the second question by looking at differences in speaking achievement based on students' multiple intelligences. Since the data met the statistical assumptions, the hypothesis was tested using parametric statistical analysis and two-way ANOVA. This technique was selected since the study's factorial design included independent and moderating variables. Table 5 shows the results of the two-way ANOVA, which were calculated employing SPSS 25.

*Table 5: The results of the two-way ANOVA*

Dependent Variable: Students' Speaking Achievement					
Source	Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	983.600 <sup>a</sup>	2	491.800	18.112	.000
Intercept	78589.917	1	78589.917	2894.343	.000
Mi	983.600	2	491.800	18.112	.000
Error	461.600	17	27.153		
Total	136582.000	20			
Corrected Total	1445.200	19			



a. R Squared = .681 (Adjusted R Squared = .643)

Employing two-way ANOVA and parametric statistical analysis, as indicated in Table 4, the criterion for accepting or rejecting the null hypothesis was set at a 95% confidence level of 0.05. A p-value < 0.05 indicates a statistically significant difference. The computation produced a 0.000 significance value. The alternative hypothesis (H1) was accepted, whereas the null hypothesis (H0) was rejected with a significance level of  $0.000 < 0.05$ . This implies that multiple intelligences influence speaking success while using the Cake application.

## Discussion

The results of this study show that using the Cake application considerably enhanced students' speaking abilities, notably in generating oral procedural texts. Students improved essential speaking components such as pronunciation, fluency, coherence, and accuracy through interactive features such as video-based courses, speaking activities, repetition practice, and rapid feedback. These findings are consistent with Bygate (2018), who emphasised the value of meaningful speaking practice for improving fluency and accuracy, and Lambert et al. (2017), who highlighted the benefits of task repetition and organised speaking exercises in increasing oral proficiency.

Furthermore, incorporating technology into speaking teaching, particularly through Cake, increased learner engagement and accessibility. Students had the opportunity to replicate model dialogues, practise providing procedural instructions, and receive personalised feedback, which supports Sun et al.'s (2021) findings that technology allows realistic and complete speaking difficulties. Teachers also had an essential role in helping students understand procedural texts' structure and linguistic elements, improving their speaking skills and confidence (Pawlak, 2021).

Students in the experimental group showed better scores than the control group in all examined speaking components, including fluency, pronunciation, content, and accuracy. The improvements were attributed to the Cake application's engaging and helpful learning environment. This conclusion is consistent with Luoma's (2004) claim that systematic speaking practice using focused tools may significantly improve speaking ability. The cake application instruction improved students' ability to organise their thoughts effectively, speak with fewer mistakes, and provide more explicit oral procedural texts.

Furthermore, the study discovered a significant relationship between students' multiple intelligences and their speaking achievement when studying using the Cake application. Consistent with Gardner (2011) and Rasheed and Wahid (2021), the findings revealed that media addressing linguistic, visual, and interpersonal intelligences could considerably improve academic attainment. Cake application, for example, helped visual learners with its video-based information, whereas its dialogue simulations assisted interpersonal learners by offering dynamic, real-world communication settings. This confirms Muvango et al.'s (2019) statement that effective instructional media improve teacher delivery and student understanding.

The Cake application performed exceptionally well for students with high interpersonal intelligence since its role-play exercises, peer interaction elements, and feedback systems encouraged active involvement and collaborative learning. This supports Gardner's (2011) notion that tailoring teaching strategies to students' intelligence profiles results in more effective learning outcomes. Wahyuni and Dewi (2024) emphasised that active interaction with learning materials in interactive situations improves concept retention and skill acquisition, as seen by the speaking gains observed among interpersonal learners in this study.

Finally, in line with Kolesnikov et al. (2019), this research demonstrates that online interactive tools such as the Cake application improve students' motivation, self-confidence, and autonomy in language learning. The Cake application addressed common speaking

challenges by providing pronunciation practice, conversational models, and real-time feedback. It also created an accessible, student-centred learning environment, making it a handy tool for improving English speaking proficiency in digital learning contexts.

## CONCLUSION

The study's findings suggest that the Cake program helps develop students' speaking skills, especially fluency, pronunciation, and coherence. Cake application assists students in gaining confidence and articulating their ideas more effectively by giving organised speaking practice through interactive conversations, real-life conversation simulations, and quick feedback. According to the study, students who were assigned to learn the stages and linguistic features of oral procedural texts and practised using Cake's guided sections improved significantly in their speaking skills. Furthermore, the study emphasises the importance of technology in language acquisition, indicating that, while both the Cake application and YouTube improve learning, the Cake application takes a more structured and systematic approach, resulting in higher organisation and coherence in students' speaking outputs. The application effectively meets students' demands by encouraging active involvement, critical thinking, and meaningful communication, especially among those with verbal, visual, and interpersonal intelligences.

This study additionally highlights the need to modify language learning aids to students' multiple intelligences and learning styles. The Cake application is especially beneficial for interpersonal learners, as it encourages active involvement and independent thinking through interactive elements and real-world language practice scenarios. Integrating the Cake application into educational environments improves memory retention, emotional engagement, and auditory development, making language acquisition more dynamic and accessible. Furthermore, the Cake application supports student cooperation by inspiring them to practise speaking skills individually and with others, increasing their proficiency and confidence in English communication. Overall, the application helps students overcome language learning difficulties while preparing them to succeed in increasingly digital learning environments.

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