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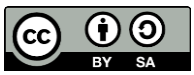

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The Use of *Memrise Application* to Improve Students' Vocabulary Mastery in The Class VII at Junior High School

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Abstract

Vocabulary is a fundamental aspect of English proficiency, enabling effective communication. However, many junior secondary students struggle to expand their vocabulary due to conventional teaching methods lacking engaging and interactive media. This study investigates the effectiveness of the *Memrise* application in improving vocabulary mastery among seventh-grade students at SMPN 2 Susoh. Using a quantitative approach with a quasi-experimental design, two groups were involved: an experimental group (26 students) receiving vocabulary instruction via *Memrise* and a control group (28 students) taught through traditional methods. Data were collected through pre-tests and post-tests, each consisting of 20 multiple-choice items assessing vocabulary mastery. An independent samples *t*-test was used for statistical analysis. The experimental group achieved a higher mean post-test score (85.00) compared to the control group (66.61), with a significance value of $p = 0.000$ ($p < 0.05$), indicating a statistically significant improvement in vocabulary mastery. The findings demonstrate that *Memrise* positively impacts vocabulary acquisition by enhancing motivation, engagement, and retention through interactive, self-paced features. The study recommends integrating mobile-assisted language learning tools such as *Memrise* into English instruction to support effective vocabulary development in secondary education.

Keywords: *vocabulary mastery; Memrise application; quasi-experimental design*

Introduction

English plays an important role in global communication, so mastery of this language is a must-have skill for students. One of the main components of language competence is vocabulary, as it supports speaking, listening, reading, and writing skills (Alqahtani, 2015). Students with limited vocabulary often have difficulty conveying ideas and understanding messages effectively. Observations at SMPN 2 Susoh indicate that many students have limited vocabulary, low motivation to learn, and minimal engagement in English language learning, largely due to the use of conventional methods and the absence of interactive learning media.

A number of studies confirm that vocabulary learning needs to be supported by an engaging, student-centered approach. Maili (2018) emphasizes that early English language learning is important because the ages of 6–13 are a crucial period for language development. However, in many classrooms, vocabulary instruction still relies heavily on textbooks, board writing, and rote memorization, leading to boredom and low retention rates. Technological advancements offer new opportunities to address these challenges through Computer-Assisted Language Learning (CALL) and Mobile-Assisted Language Learning (MALL), which have been proven to enhance vocabulary mastery (Van & Thanh, 2021). With advances in technology, Mobile-Assisted Language Learning (MALL) is increasingly recognized as an effective approach to foreign language vocabulary learning. Recent studies show that the use of gamified mobile applications and spaced repetition can significantly improve vocabulary retention in EFL learners (Sabeki & Valizadeh, 2025).

Memrise is a web-based and mobile application that combines multimedia content, gamification, and spaced repetition to facilitate independent and interactive vocabulary learning. The application can be accessed via various devices, allowing students to learn anytime and anywhere, which is particularly suitable for digital natives (Godwin-Jones, 2017). Previous research has shown that Memrise can improve vocabulary retention and learning motivation compared to traditional methods (Salniawan, 2024).

Although previous research results are promising, studies on the use of Memrise at the junior high school level in Indonesia are still limited. This study aims to fill this gap by examining the extent to which Memrise can improve the vocabulary mastery of seventh-grade students at SMPN 2 Susoh. Therefore, the purpose of this study is to determine the effectiveness of using the Memrise application in improving the English vocabulary mastery of seventh-grade students at SMPN 2 Susoh compared to conventional learning methods. The research question in this study is: Is the use of the Memrise application significantly more effective than conventional learning methods in improving the English vocabulary mastery of seventh-grade students at SMPN 2 Susoh?

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Method

This study used a quantitative approach with a quasi-experimental design in the form of a pre-test–post-test control group design, which was commonly employed to evaluate the effectiveness of educational interventions in real classroom contexts, as recommended by recent research in the field of mobile-assisted learning (Kucuk & Daskan, 2024). Two complete seventh-grade classes at SMPN 2 Susoh were selected using cluster random sampling to ensure the representativeness of the sample.

The experimental class consisted of 26 students, while the control class consisted of 28 students. The intervention was conducted over four weeks with a frequency of three meetings per week, each lasting approximately 40 minutes. In the experimental class, vocabulary learning was conducted using the Memrise app. The researchers created a special vocabulary collection tailored to the seventh-grade English curriculum, covering themes such as daily activities, school subjects, animals, adjectives, and verbs. Each learning session involved listening and pronunciation exercises, spelling tasks, and multiple-choice quizzes provided in the application. Students accessed Memrise via smartphones under teacher supervision, while learning progress was monitored through the application's analytics feature.

Meanwhile, in the control class, learning was conducted using conventional methods, including textbooks, teacher explanations, and vocabulary exercises through translation and memorization. Time allocation and meeting frequency were made equivalent to the experimental class to maintain learning time equity. Vocabulary mastery was measured using a multiple-choice test consisting of 20 questions adapted from validated vocabulary test materials and aligned with the school curriculum topics. The test was administered to students from other schools to ensure the clarity and appropriateness of the questions. The test instruments were validated through expert review and limited pilot testing to ensure reliability, in line with the latest MALL research guidelines (Duan & Suppasetseree, 2025). The validity of the instruments was tested using Pearson's correlation, while reliability was measured using Cronbach's alpha, yielding a coefficient of 0.87, indicating high reliability.

This study has obtained ethical approval from the Research Ethics Committee of STKIP Muhammadiyah Aceh Barat Daya. Informed consent was obtained from all participants and parents before the study was conducted. Students were informed that participation was voluntary and that test results would only be used for research purposes. Data were collected through a pre-test before the treatment and a post-test after the four-week intervention. Data analysis was conducted using SPSS version 26, with descriptive statistics to summarize the pre-test and post-test results for each group, and an independent samples t-test to determine significant differences between the post-test scores of the experimental group and the control group.

Results

This study aims to determine the effectiveness of using the Memrise application in improving students' vocabulary mastery. Before the treatment, both groups were given a pre-test to ensure comparable initial abilities. The pre-test results showed that the average score for the experimental group was 58.27 (SD = 6.45) and for the control group was 57.89 (SD = 6.32). An independent samples t-test revealed no significant difference, $t(52) = 0.23$, $p = 0.819$. This indicates that the initial abilities of the two groups were relatively equivalent.

After four weeks of treatment, the post-test results showed a greater improvement in the experimental group than in the control group. The experimental group obtained an average post-test score of 85.00 (SD = 5.87), while the control group obtained 66.61 (SD = 6.24). The independent samples t-test yielded a t-value of $t(51.669) = -5.732$, $p < 0.001$, with an average difference of –18.39 (95% CI [–24.83, –11.95]). The effect size (Cohen's d) of 1.56 indicates a very large effect of *Memrise* use on vocabulary mastery improvement.

Table 1. Descriptive statistics for pre-test and post-test scores

Group	N	Pre-test Mean (SD)	Post-test Mean (SD)	Mean Gain
Experimental	26	58.27 (6.45)	85.00 (5.87)	26.73
Control	28	57.89 (6.32)	66.61 (6.24)	8.72

The t-test assumption testing includes normality and homogeneity of variance tests. The Shapiro–Wilk test results show that the data are normally distributed ($p > 0.05$) in both groups. The Levene test shows homogeneous variance ($F = 0.691$, $p = 0.410$).

To visualize the results, Figure 1 shows a comparison of the pre-test and post-test average scores of the two groups. This graph shows a much more significant increase in the experimental group compared to the control group.

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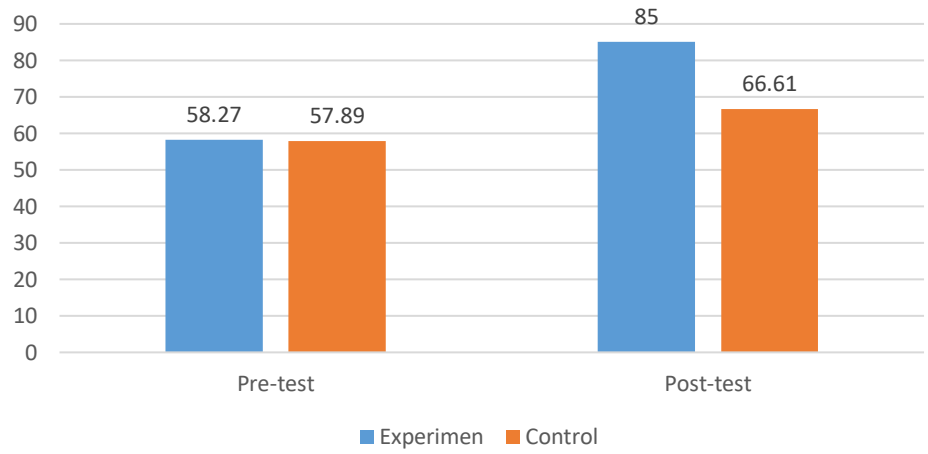
Figure 1. Comparison of Pre-test and Post-test Scores.



These results show that learning vocabulary with Memrise provides a significant improvement and has a greater effect on students' vocabulary mastery compared to conventional methods.

Discussion

The results of this study are consistent with the findings of Enayat et al. (2025) and Istighfaroh (2025), which indicate that the integration of mobile-based learning applications with gamification features can enhance motivation and vocabulary learning outcomes. Additionally, the meta-analysis by Liu et al. (2025) confirms that mobile game-based language learning approaches are effective in improving both receptive and productive vocabulary.

The results of this study indicate that the use of the *Memrise* application significantly improves the English vocabulary proficiency of seventh-grade students at SMPN 2 Susoh. These findings are consistent with the Mobile-Assisted Language Learning (MALL) theory, which emphasizes the role of mobile technology in facilitating interactive, independent, and context-rich language learning (Godwin-Jones, 2017). The increase in post-test scores in the experimental group compared to the control group indicates that the multimedia content, gamification, and spaced repetition mechanisms in *Memrise* are able to promote student engagement and retention more effectively.

A deeper analysis of *Memrise's* effectiveness shows that the app's design supports active recall and spaced repetition, two important principles in cognitive psychology that play a major role in long-term memory consolidation. *Memrise's* interactive features engage multiple sensory channels—visual, auditory, and kinesthetic making the process of encoding vocabulary more profound. Additionally, gamification elements such as points, levels, and progress tracking can enhance students' intrinsic motivation, thereby maintaining their participation throughout the four-week intervention.

These results are consistent with previous research (Wang & Shih, 2015) which found that mobile-based tools can enhance students' autonomy and engagement compared to conventional teacher-centered methods. However, it should be acknowledged that other factors such as teacher enthusiasm, student collaboration, or the novelty effect of using a mobile app may also contribute to the study's results. Future research could control for these variables by varying teacher delivery styles or comparing with other digital app usage.

The limitations of this study include its relatively short duration (four weeks), focus on a single school, and use of multiple-choice tests to measure vocabulary mastery. This limits the generalizability of the findings to a broader population or to long-term retention outcomes. In addition, this study did not explore students' qualitative perceptions of *Memrise* use, which could provide richer insights into their learning experiences.

The practical implications of this study are that English teachers and schools can integrate *Memrise* or similar mobile applications into vocabulary learning to complement conventional methods. Schools should provide structured training for teachers to enable them to design and adapt *Memrise* materials to curriculum objectives. A blended learning approach combining classroom instruction with app-based practice can maximize the benefits of technology while maintaining the pedagogical strengths of face-to-face learning.

From a theoretical contribution perspective, this study reinforces the MALL theory by demonstrating that mobile-assisted vocabulary learning can produce significant improvements even in relatively short learning periods, especially when the learning design utilizes gamification and multimedia. This study also expands the empirical evidence by confirming its effectiveness in the context of junior high schools in Indonesia, which have been rarely studied.

Further research is recommended to extend the intervention duration to measure vocabulary retention over several months, incorporate qualitative data through student interviews, and compare *Memrise* with other mobile apps or adaptive vocabulary systems based on artificial intelligence. Additionally, testing its impact on other language skills—such as reading comprehension, writing accuracy, or listening ability—would provide a more comprehensive picture of the educational potential of *Memrise.*

Conclusion

This study concludes that the *Memrise* app is an effective tool for improving the English vocabulary of seventh-grade students at SMPN 2 Susoh. The results show that students who learned vocabulary using *Memrise* obtained significantly higher post-test scores than students who were taught using conventional methods, with a large effect size reflecting substantial learning improvement. The effectiveness of *Memrise* can be attributed to its multimedia content, gamified learning environment, and spaced repetition features, which enhance motivation,

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engagement, and long-term retention among students.

These findings reinforce the theory of Mobile-Assisted Language Learning (MALL) and contribute to the growing body of evidence supporting the integration of mobile applications in language learning. From a practical standpoint, teachers and schools are advised to integrate *Memrise* or similar applications into vocabulary learning as part of a blended learning approach to maximize student learning outcomes.

Further research is recommended to extend the duration of the intervention in order to measure long-term vocabulary retention, explore students' perceptions of *Memrise* usage, and compare its effectiveness with other digital learning tools or adaptive artificial intelligence-based systems. Such studies will provide deeper insights into the pedagogical potential of mobile-assisted vocabulary learning in various educational contexts.

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