



The Effect of Memory Card Game on Pupils' English Vocabulary at Primary School

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Abstract : The purpose of this study was to investigate the effect of a Memory Card Game on the English vocabulary of 5th grade pupils' at UPTD SD Negeri 078081Saombo school. The study employed a quantitative approach and a quasi-experimental one group a pre-test and a post-test design. The participants were 18 of 5th grade pupils selected through total sampling. Data were collected through vocabulary tests administered before the implementation of the Memory Card Game and afterward during three lessons. The data were analyzed using descriptive statistical methods and a paired t-test to assess the significance of the student's vocabulary improvement. The results showed that the pupils' mean score increased from 62.22 on the pre-test to 86.67 on the post-test, representing an improvement of 24.45 points. Statistical analysis revealed a significance level of 0.000, which was less than 0.05, and the calculated t-value was greater than the critical value. These results indicate that the Memory Card-game had a positive and significant effect on pupils' English vocabulary. Therefore, the Memory card-game can be considered an effective and engaging learning tool for improving English vocabulary among primary school students.

Keywords : Memory card game, English vocabulary, Primary school pupils'.

INTRODUCTION

Vocabulary is one of the most fundamental components of teaching English as a Foreign Language (EFL). Adequate vocabulary mastery is a key prerequisite for student to communicate orally and in writing, comprehend texts, and develop their overall language skills. (Gómez & Cedeño., 2025) state that vocabulary plays a crucial role in language learning because it enables students to understand and express ideas effectively. At the primary school level, a strong vocabulary foundation is essential, as it supports students' success in learning English at higher levels of education. The reality on the ground shows that English vocabulary instruction in many primary schools in Indonesia is still dominated by conventional methods such as memorization and translation. These methods tend to be passive and unengaging for young learners, who are at a developmental stage where they learn through play and hands on experiences. As a result, students often struggle to recall the vocabulary they have learned and

lose motivation to continue learning English. This issue is also evident at UPTD SD Negeri 078081 Saombo, particularly in the 5th grade with 18 pupils, where pre -test results showed an average vocabulary score of only 62.22 out of 100, indicating that the pupils' English vocabulary was still relatively low.

Various studies show that game-based learning is effective in improving motivation and language learning outcomes among young students (Azizi & Sofiana, 2025). Language games create a fun learning atmosphere, reduce anxiety, and encourage natural and repeated language use. Similarly, (Armelia et al., 2024) found that vocabulary learning at the primary school level should be integrated into meaningful and contextual activities, rather than merely separate and mechanical exercises. Language games have also been shown to enhance vocabulary learning. Research by (Salija & Dollah, 2023) found that experimental groups using language games achieved higher post-test scores compared to control groups using conventional methods. In addition, (Armelia et al., 2024) found that more than 90% of students showed improvement in their English vocabulary after participating in card-based learning activities. Furthermore (Mitami et al., 2024) reported that card media positively contributed to pupils' English vocabulary learning. These findings suggest that educational games can serve as an effective tool for teaching vocabulary. One relevant game with great potential for classroom use is the memory card game.

The memory card game is a matching game that requires pupils to remember the positions of cards that have previously been flipped over. In the context of EFL vocabulary learning, these cards typically display the target word paired with an image or its definition. (Lastari et al., 2024) explain that vocabulary learning is most effective when it involves deep processing, repeated exposure to the word, and retrieval practice. These three elements are naturally embedded in the mechanics of the memory card game, thereby providing a strong theoretical foundation as a vocabulary learning tool. Several previous studies have investigated the use of memory card games in English vocabulary learning. (Lastari et al., 2024) the memory card game can be effectively applied to teach vocabulary to young learners at the primary school level. In line with this, (Armelia et al., 2024) the study also found that card-based learning activities significantly improved pupils' English vocabulary. However, research examining the use of memory card game among primary school students in the Universitas Nias region remains limited. The uniqueness of the study lies in the context of the location and research subjects, namely 5th grade pupils at UPTD SD Negeri 078081 Saombo, to investigate the effect of the Memory Card Game on pupils' English vocabulary.

Based on the background described above, this study aims to determine the effect of using memory card game on pupils' English vocabulary achievement of 5th grade pupils at UPTD SD Negeri 078081 Saombo. The hypothesis of this study is that there will be a significant improvement in pupils' vocabulary after the implementation of the memory card game. The results of this study are expected to provide useful information for English teachers in selecting effective and engaging strategies for teaching vocabulary to primary school pupils.

RESEARCH METHOD

This study employed a quantitative approach using a quasi experimental design, specifically a one-group pre-test and post-test design. (Agustina et al., 2024) explain that this design is used to measure the impact of a treatment by comparing participants' performance before and after the intervention. This study was designed to assess how the Memory Card Game influences pupils' ability to effectively learn and retain English vocabulary. In this design, pupils took a pre-test prior to the treatment and a post-test following the treatment to assess improvements in their vocabulary. The aim of this study was to investigate the effect of the Memory Card Game as a method for instructing English vocabulary to students in the 5th grade pupils. (Dalimunthe et al., 2024) game-based learning can support vocabulary acquisition among primary school pupils. Therefore, this study was conducted to examine the impact of the Memory Card Game on pupils' English vocabulary after the treatment was implemented.

The study was conducted at UPTD SD Negeri 078081 Saombo. This study included all 5th grade pupils at the school. Because the class consisted of only 18 pupils, every student was included in the research as a sample, using the total sampling method. This study examined the impact of Memory Card Game as the independent variable on pupils' English vocabulary, which served as the dependent variable. The Memory Card Game is a card-based matching activity in which pupils match vocabulary words to corresponding images. (Perdana et al., 2025) state that vocabulary refers to pupils' ability to recognize, understand and remember English words, which can be measured through vocabulary tests.

The research utilized a memory card game device, lesson plans, observation sheets, and a 10-item vocabulary test as part of the materials and tools. (Lestari et al., 2024) explain that vocabulary tests can be used to measure pupils' vocabulary development. The vocabulary test was administered two times, first as a pre-test prior to the treatment and then as a post-test following the treatment. The research procedure consisted of four steps. Initially, the researchers administered a pre-test to assess the pupils' existing level of vocabulary knowledge.

Second, the memory card game set was used during the teaching and learning process across three meetings. Third, the post-test was conducted after the treatment has been administered. Finally, the collected data were analyzed to determine the effectiveness of the treatment.

The collected data was analyzed using descriptive statistics and a paired sample t-tests. Descriptive statistics include mean, minimum score, maximum score, and standard deviation of pre-test and post-test results. A paired samples t-test was conducted to determine whether there was a statistically significant difference between the pre-test and post-test scores. The significance level was set at 0.05.

Tabel 1. One-Group Pre-test and Post-test Design

Group	Pre test	Treatment	Post test
Experimental Group	O ₁	X	O ₂

Table 1 showed the one-group pre-test and post-test design used in this study. O₁ represented the pre-test administered before the treatment, X represented the implementation of the Memory Card Game, and O₂ represented the post-test administered after the treatment.

RESULTS AND DISCUSSION

This research sought to assess how the use of the Memory Card Game influenced the English vocabulary of 5th grade pupils at UPTD SD Negeri 078081 Saombo. Research data were gathered by conducting a pre-test prior to the intervention and a post-test following the students' participation in three learning sessions that involved the Memory Card Game. The findings from the descriptive analysis of the pre-test and post-test data are shown in Table 2.

Table 2. Descriptive Statistics of Pre-test and Post-test Scores

Statistics	Pre test	Post-test
N	18	18
Mean	62.22	86.67
Minimum	30	80
Maximum	80	100
standard deviation	13.96	7.67

Based on Table 2, the average scores of the students rose from 62.22 in the pre-test to 86.67 in the post-test. The rise of 24.45 points suggests that students' English vocabulary have enhanced following instruction through the Memory Card Game. The minimum score, which was initially 30, has been raised to 80, and the maximum score has gone up from 80 to 100. In addition, the standard deviation dropped from 13.96 to 7.67, showed that students' vocabulary gains became more consistent after implementing the Memory Card Game. To make the

comparison between the average of pre-test and post-test scores clearer, the data are shown in a graph presented as Figure 1.

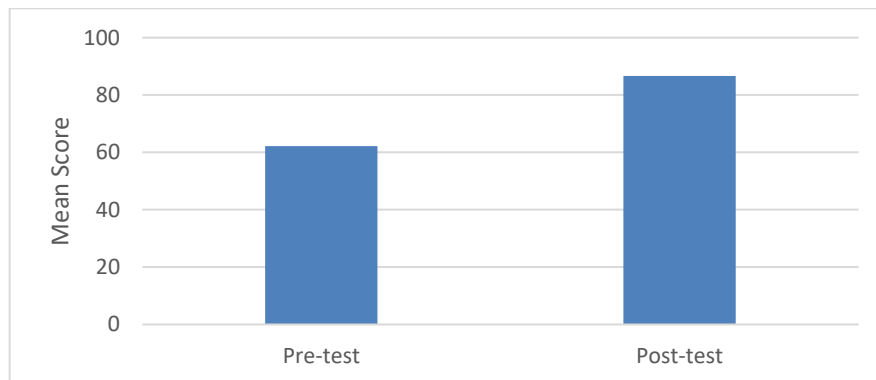


Figure 1. Comparison of Mean Scores between Pre-test and Post-test

Based on Figure 1, the average scores increased after the implementation of the Memory Card Game. The post-test average score was greater than the pre-test average score. This growth shows that using the Memory Card Game assists students in better understanding, recalling, and identifying English vocabulary. To check if this increase is statistically significant, a Paired t-Test was carried out. The outcomes of the test are shown in Table 3.

Table 3. Paired Sample t-Test Result

Variable	Pre test
Mean Pre-test	62.22
Mean Post-test	86.67
Mean Difference	24.45
t-value	-9.026
df	17
Sig. (2-tailed)	0.000
α	0.05

The results of the paired t-test show that the significance value (Sig., two-tailed) of 0.000 is smaller than the significance level of 0.05 ($p < 0.05$). In addition, the calculated t-value of 9.026 was greater than the critical t-value of 2.110. Thus, H_0 is rejected and H_1 is accepted. These results prove that there is a positive and significant effect of using Memory Card Games on the English vocabulary of 5th grade pupils at UPTD SD Negeri 078081 Saombo. This finding is consistent with research conducted by (Al Azizi & Sofiana., 2025)who stated that game-based learning can increase learning motivation and language learning outcomes among primary school students. Game-based activities create a fun learning atmosphere, making students more active and engaged in the learning process. The findings of this study also support research conducted by (Armelia et al., 2024), who reported that the use of card-based media can significantly improve students' English vocabulary. In that study, the majority of students

experienced an improvement in their English vocabulary after participating in card-based learning. Similarly, card-based learning activities proved effective for 5th grade students at SDN 205/IV Jambi, who showed a significant improvement in their ability to remember English vocabulary (Kurniati et al., 2023).

The results of this study align with the research carried out by (Salija & Dollah, 2023) who discovered that students who used language games in their learning process performed better compared to those who followed traditional learning approaches. The results of this study show that using games in learning can help students improve their vocabulary by providing repeated exposure, visual aids, and ongoing practice for better memory retention. Picture-based card games have also proven effective in improving English vocabulary among early childhood learners, providing further evidence of the effectiveness of card-based media (Depari et al., 2018). This is consistent with the view of (Lastari et al., 2024) who stated that learning vocabulary becomes more successful when students are regularly exposed to the words they are studying and participate in activities that involve recalling them.

From a global standpoint, the findings of this study align with those of (Gómez & Cedeño., 2025), who argue that having a strong grasp of vocabulary is essential for developing language skills. Students who do not have a sufficient grasp of vocabulary will find it difficult to comprehend texts, express themselves effectively, and improve in other areas of language learning. The increase in students' scores after using the Memory Card Game suggests that this method can be a useful tool for helping primary school students learn English vocabulary. From the perspective of teaching English as a foreign language (EFL), the use of card-based has proven effective in primary schools in both Indonesia and Malaysia, as it creates an interactive learning environment and increases student engagement in vocabulary practice (Saputri & Prasetyarini, 2024).

Based on a review of existing research, most prior studies have concentrated on the application of language games or card-based materials in educational settings where there is greater availability of teaching resources. Research that specifically looks at how Memory Card Games are used with primary school students in the Universitas Nias area is still quite scarce. This study offers an empirical contribution by presenting evidence that demonstrates how Memory Card Games can effectively enhance students' mastery of English vocabulary, particularly in educational settings where access to technology-based learning resources is limited.

The special aspect of this study is the use of a memory card game as an educational tool to teach English vocabulary to 5th grade pupils at UPTD SD Negeri 078081 Saombo. In the context of the widespread adoption of digital learning tools, this study shows that a straightforward, low cost, simple to create, and easy to use physical game can still make a meaningful difference in enhancing students' English vocabulary. These results offer a suitable alternative approach for teaching English at the primary school level, especially in regions where access to technology is limited. The findings from the research suggest that the Memory Card Game serves as a useful tool for enhancing primary school students' ability to master English vocabulary. This effectiveness is shown through higher average scores among students, significant statistical results from tests, greater learning improvements for all participants, and consistency with past national and international research.

CONCLUSION

This study shows that the Memory Card Game has a positive and significant effect on the English vocabulary of 5th grade pupils at UPTD SD Negeri 078081 Saombo. The pupils' average score increased from 62.22 on the pre-test to 86.67 on the post-test, representing an increase of 24.45 points. Statistical test results indicate that the alternative hypothesis is accepted, thereby proving that the use of Memory Card Games is effective in improving students' English vocabulary. These findings suggest that the Memory Card Game can be used as an engaging and effective alternative learning medium to support English vocabulary learning in primary school. Furthermore, this study contributes to the development of English learning strategies that utilize educational games as a means to enhance student engagement and learning outcomes.

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