

**THE EFFECT OF USING CARD-BASED MEMORY GAMES ON VOCABULARY MASTERY
OF THE SEVENTH GRADE STUDENTS AT SMP NEGERI 8 PEMATANG SIANTAR**

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Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui dampak yang signifikan dari permainan memori menggunakan kartu isyarat yang dimodifikasi terhadap penguasaan kosakata siswa kelas tujuh di SMP Negeri 8 Pematangsiantar pada tahun ajaran 2024/2025. Studi ini secara khusus berfokus pada penguasaan kata benda. Penelitian ini melibatkan populasi sebanyak 320 siswa kelas tujuh, yang kemudian dipilih dua kelas dengan menggunakan teknik purposive sampling. Sampel terdiri dari kelas eksperimen (VII-1) dengan 32 siswa yang terlibat dalam permainan memori, dan kelas kontrol (VII-2) dengan 32 siswa yang menerima instruksi tradisional melalui penjelasan guru. Pengumpulan data dilakukan melalui pre-test dan post-test pilihan ganda. Hasil penelitian menunjukkan bahwa nilai rata-rata kelas eksperimen meningkat dari 47,9 pada pre-test menjadi 74,5 pada post-test. Sebaliknya, nilai rata-rata kelas kontrol meningkat dari 55,6 pada pre-test menjadi 65,3 pada post-test. Analisis menunjukkan nilai t-test sebesar 4,828 dengan derajat kebebasan yang dihitung sebagai $(n_1 + n_2 - 2)$, menghasilkan total 62. Nilai t-kritis pada tingkat signifikansi 0,05 adalah 1,670. Karena nilai t-test yang diamati (4,828) melebihi nilai t-kritis (1,670), maka hipotesis nol (H_0) ditolak, dan hipotesis alternatif (H_a) diterima. Temuan ini menunjukkan bahwa ada pengaruh yang signifikan terhadap penguasaan kosakata siswa ketika diajar dengan menggunakan permainan memori dengan kartu di SMP Negeri 8 Pematangsiantar.

Kata Kunci: Penguasaan Kosakata, Media, Permainan Memori, Kartu

Abstract

The aim of this research is to determine the significant impact of memory games using modified cue cards on seventh grade students' vocabulary mastery at SMP Negeri 8 Pematangsiantar in the 2024/2025 academic year. This study specifically focuses on noun mastery. This research involved a population of 320 seventh grade students, who were then selected in two classes using purposive sampling techniques. The sample consisted of an experimental class (VII-1) with 32 students involved in memory games, and a control class (VII-2) with 32 students who received traditional instruction through teacher explanations. Data collection was carried out through multiple choice pre-test and post-test. The results showed that the average score of the experimental class increased from 47.9 in the pre-test to 74.5 in the post-test. In contrast, the average score of the control class increased from 55.6 in the pre-test to 65.3 in the post-test. The analysis shows a t-test value of 4.828 with degrees of freedom calculated as $(n_1 + n_2 - 2)$, resulting in a total of 62. The critical t-value at the 0.05 significance level is 1.670. Because the observed t-test value (4.828) exceeds the critical t-value (1.670), the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_a) is accepted. These findings indicate that there is a significant influence on students' vocabulary mastery when taught using memory games with cards at SMP Negeri 8 Pematangsiantar.

Keywords: Vocabulary Mastery, Media, Memory Game, Cards

Introduction

Language is a crucial aspect of human culture, enabling communication and interaction within communities (Nasution & Tambunan, 2022). With language, it is also possible for humans to develop and understand various phenomena that appear around them. Language was incredibly important in people's lives because it was always used in their daily activities to communicate with others (Rabiah, 2018). Across the globe, numerous languages are utilized, including regional, national, and international languages. English serves as an international language and is adopted as a national language by many countries, making it a common medium for global communication (Silaban et al., 2023).

English serves as a vital language in the professional realm (Dzulkifli Isadaud et al., 2022). In Indonesia, it is widely used in everyday communication, with many schools adopting English as their primary language of instruction. When it comes to student competency, the goal of teaching English is to enhance four key language skills: speaking, writing, reading, and listening (Hadi et al., 2023). Students are anticipated to cultivate these skills through their classroom activities. To facilitate the development of these four skills, it is essential to focus on various language components, which include pronunciation, grammar, and vocabulary (Huda & Lanna Alisya Fitri, 2024).

Vocabulary refers to the complete set of words that constitute a language (Hornby, 2002: 6) in (Wero et al., 2021). As stated by Nunan (2005: 121) cited in (Merry Susanty Br Tarigan et al., 2024) "Vocabulary is a collection of words that a person knows". This highlights that without a sufficient vocabulary, students may struggle to learn a language effectively. Vocabulary plays a crucial role in developing language skills, as the primary goal for many learners is effective communication (Hulawa, 2022). The significance of vocabulary is evident both in and out of the classroom. Students who perform well typically possess a strong vocabulary. For instance, without a solid vocabulary, students may find reading challenging, as they will struggle to understand and translate the text. However, enhancing students' vocabulary is a complex task, as they primarily focus on learning content words, which are essential in mastering English.

Some students at SMP Negeri 8 Pematangsiantar, particularly in the seventh grade, have expressed that they find English to be a challenging subject, especially when it comes to remembering vocabulary. This lack of vocabulary mastery makes it difficult for them to speak English fluently. They often receive additional vocabulary lessons, but simply being asked to look up words in a dictionary and pronounce them does not motivate them to learn. Consequently, their motivation to study English remains low, and they require significant encouragement to engage with the language. During the English learning process, researchers frequently observe that students appear confused about the teaching methods being used. This confusion stems from their insufficient vocabulary knowledge, which prolongs their learning achievements. The effectiveness of a lesson is reflected in the improvement of students' learning outcomes. To enhance the learning experience, educators must be creative in their approach to delivering material, ensuring that it is engaging and enjoyable. One effective strategy is to incorporate suitable and interesting learning media, which can boost students' enthusiasm for learning English and enhance their overall motivation. Utilizing effective learning media is a valuable alternative in the educational process.

For researchers, incorporating learning media can facilitate the delivery of material to students. By utilizing media in a playful learning environment, it is anticipated that tension in the learning process can be alleviated, making it easier for students to grasp the concepts being taught. Teaching media should be tailored to the characteristics of children to optimize their English learning experience (Novasyari, 2022). The use of media in education is highly beneficial, as it helps students more easily absorb the knowledge provided by their teachers (Asriyani et al., 2024). One key principle often considered when developing or selecting teaching methods for children is that foreign language learning should be enjoyable. Donmus (2010) as cited in (Ubaidatur Rahmah Khodijah Al-Jawwadah & Tiyyas Saputri, 2021) notes that the use of academic games in

language education has increased because they contribute to making language learning more engaging. The combination of games and education can create a fun and effective learning environment (Anastasiadis et al., 2018). An enjoyable learning atmosphere can be fostered through English teaching methods that incorporate games, singing, and drawing (Akdogan, 2017).

One media that can be used to teach English to students is through game (Pratami et al., 2023). Game are an important part of learning. Even though game are only recreational activities that are intended to provide entertainment, in learning English, this activity is intended to emphasize the material being discussed. Engaging in learning games not only provides enjoyable experiences but also helps students grasp the concepts related to the learning objectives (Pho & Dinscore, 2015) as cited in (Yudha & Mandasari, 2021). By incorporating learning games, teachers can foster an environment that encourages students' eagerness to learn the language. Games can act as effective tools for language acquisition (Luan, 2022). According to (Adipat et al., 2021) "Games can make students more focused on learning because they do not feel pressured to study." Students tend to engage more actively and quickly with activities presented in a game format compared to traditional study methods.

Through game, researcher can train and provide vocabulary learning materials in a fun atmosphere and provide an enjoyable experience for students. There are many game that can be used as a medium for learning vocabulary, one of which is memory game. According to (Qotrunnada et al., 2024). Memorise game is a game that the entire class can play to help students learn and review their vocabulary terms because repetition help us recall new words and their meaning. Memory game or sometimes called concentration game, are card game that are well known to both children and adults. A good memory is one of the qualities needed to be successful in it. Game can help students develop concentration, train long-term memory, train visual memory ,and help students think critically (Sivakumar, 2022).

One type of media that can be used for game is cards. According to Mora (1994) in (Duri, 2018) described a cue card as a card that features a picture along with cue words designed to assist students in starting conversations. Cards of various shapes and sizes can be used in various ways. Cards can be used individually, in pairs or groups. Cards have many uses. Cards can be used to present and play language, as well as involve students in various activities (Amran, 2023). The cards used in the Memory Game game are cards that contain nouns or pictures with the theme being studied and are made in such a way that students are interested in participating in the ongoing learning (Depari et al., 2018). Researcher developed a card game that was modified from one type of card, namely cue cards. Cue cards are small cards that students use in pairs or groups (Duri, 2018). On cue cards there are pictures that can be taken from various sources (Harmer, 2007) in (Rahayu & Susilawati, 2019). One of the uses of pictures is to present and check meaning (Harmer, 2007) in (Yustina, 2019). Images can be used to illustrate a sentence. Additionally, the images on the cards are designed to aid students in comprehending the meanings of words or sentences.

The use of learning media in the form of card games is anticipated to positively impact students, enhancing their enthusiasm and motivation for learning (Prihatiningsih, 2018). This approach also aims to improve their ability to remember and master English vocabulary. Given this context, the researcher is interested in conducting a study titled, "The Effect Of Memory Game by Using Cards to Vocabulary Mastery of Students Seventh Grade of SMP Negeri 8 Pematangsiantar".

Method

This study was designed using a quantitative research approach. According to (Creswell, 2018) "Quantitative research is a method for testing objective theories by exploring the relationships among variables". These variables can be measured, typically using instruments, allowing for the analysis of numerical data through statistical methods. According to (Creswell, 2018) "quasi-experiments involve the assignment (but not random assignment) of participants to groups". The quasi-experimental design was used because schedules could not be disrupted in a typical school

situation, or classes can be reorganiz into existing courses or other groups.

The researcher employed a purposive sampling technique to select participants. The research involved two groups: an experimental class and a control class. The experimental class used a memory game with cue cards as a medium for teaching vocabulary related to nouns, while the control class followed a conventional method for teaching the same vocabulary. The population for this research consisted of seventh-grade students at SMP Negeri 8 Pematangsiantar for the academic year 2023/2024, totaling 320 students, with 32 students in each class. The selection of the seventh-grade population was based on the researcher's teaching experience at the school. A total of 64 students from two classes were chosen as the sample, with one class designated as the experimental group and the other as the control group. The experimental class received the treatment involving cue cards, while the control class continued with conventional teaching methods. Specifically, class VII-1 served as the experimental class, and class VII-2 functioned as the control class.

Result and Discussion

Result

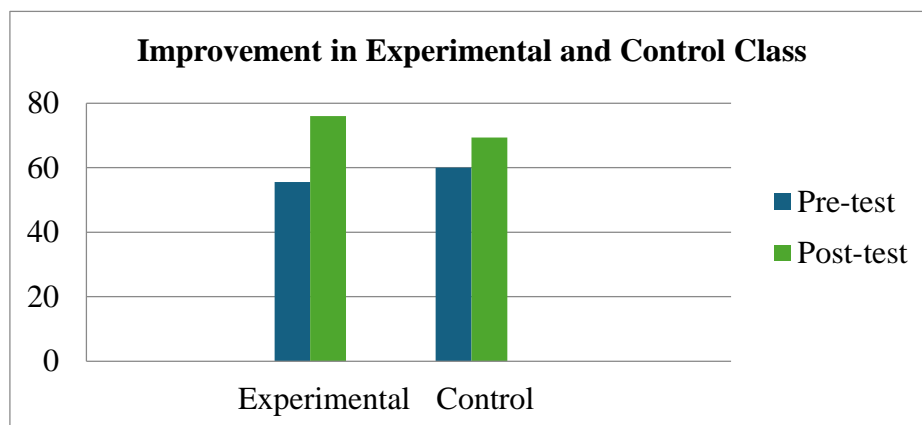
The experimental class for this study consisted of 32 students from class VII-1 at SMP Negeri 8 Pematangsiantar. The researcher implemented a Memory Game using cue cards as a teaching medium in this class. The table presents the results of the pre-test and post-test, which assess vocabulary mastery.

Table 1. The Pre-test and Post-test Score of Experimental Class

EXPERIMENTAL CLASS					
No.	Initial Name	Score (d1)	Mean (d2)	Differences (Da)	Differences Squared (Da ²)
1.	ARP	55	65	10	100
2.	AQM	50	75	25	625
3.	AS	60	75	15	225
4.	ASS	60	65	5	25
5.	AS	25	75	50	2500
6.	BRF	45	65	20	400
7.	BRR	30	50	20	400
8.	BYG	75	95	20	400
9.	BIP	20	70	50	2500
10.	CALS	30	70	40	1600
11.	CHM	40	70	30	900
12.	DO	30	75	45	2025
13.	ERS	35	85	50	2500
14.	GAS	80	85	5	25
15.	GS	30	70	40	1600
16.	JPS	25	75	50	2500
17.	JN	50	70	20	400
18.	JCS	70	75	5	25
19.	JHP	65	85	20	400
20.	KAS	20	80	60	3600
21.	LSAL	50	75	25	625
22.	MN	30	90	60	3600
23.	MHS	35	80	45	2025
24.	NA	55	65	10	100
25.	NM	35	55	20	400
26.	NAPG	40	75	35	1225
27.	NOS	45	80	35	1225
28.	RMLT	75	75	0	0
29.	RMBB	65	80	15	225
30.	S	80	85	5	25

31.	YFP	85	80	-5	25
32.	YP	45	70	25	625
Σ		1535	2385	850	32850

The total score of the post-test in the experimental class was 32,850, as indicated in the table above. This data is necessary for calculating the standard deviation of the post-test results in the experimental class and for comparing it with the post-test data from the control class.



After calculating the mean scores for the pre-test and post-test in both the experimental and control classes, the researcher displayed the combined results in a graph. This graph highlights the advancements made in English vocabulary mastery. It is clear from the figure that students' scores improved, especially following the treatment. The experimental group, which was taught using word search puzzle games, showed a significant increase in scores. Specifically, the mean score for the experimental class rose from 55.6 in the pre-test to 76 in the post-test. In contrast, the control class, which utilized conventional teaching methods, experienced a smaller increase, with the mean score going from 60 in the pre-test to 69.4 in the post-test. The experimental class demonstrated a greater improvement of 20.4 points, while the control class improved by 9.4 points. This difference highlights the effectiveness of the treatment in enhancing vocabulary mastery, as evidenced by the more substantial gains observed in the experimental class compared to the control class.

Hypothesis Testing

After summing up the data using the t-test formula, the researcher obtained a t-test value of 4.828, with degrees of freedom (df) calculated as $(n1 + n2 - 2)$, resulting in a total of 62 for a two-tailed test. The critical t-value was found to be 1.670. The t-test results indicated that the observed value was greater than the t-table value, as shown by the inequality: $t\text{-test} > t\text{-table}$ at the significance level of 0.05 ($4.828 > 1.670$). Consequently, the alternative hypothesis (H_a) was accepted, and the null hypothesis (H_0) was rejected.

Findings

Based on the data analysis findings, the researcher determined that using a memory game with cards significantly impacted students' vocabulary mastery at SMP Negeri 8 Pematangsiantar. The scores of students taught with the memory game using cards were higher than those taught through conventional methods for English vocabulary mastery. This is evidenced by the mean scores: the experimental class had a pre-test mean of 47.9, while the control class had a pre-test mean of 55.6. In the post-test, the experimental class's mean score rose to 74.5, compared to 65.3 for the control class. Additionally, the squared score of the post-test for the experimental class was 850, whereas the control class's squared score was 310. The standard deviation for the experimental class was 10,272, while it was 1,947 for the control class. These results confirm that students in the experimental class achieved higher scores than those in the control class.

Discussion

This research aimed to investigate the impact of the Memory Game with cards on vocabulary mastery among seventh-grade students at SMP Negeri 8 Pematangsiantar. The study involved two classes: class VII-1 served as the experimental group, while class VII-2 acted as the control group. Both classes underwent the same pre-test and post-test. However, the experimental class received instruction through the Memory Game with cards after the pre-test, whereas the control class continued with traditional textbook methods without any special intervention. The findings indicated that students who learned vocabulary through the Memory Game with cards achieved higher scores compared to those who used conventional textbooks. The Memory Game not only challenges students' creativity and memory but also provides an enjoyable and effective way to reinforce learning. The significant improvement in the post-test scores of the experimental class highlighted the positive effects of this teaching method. The interactive nature of the game encouraged active participation from students, thereby enhancing their overall learning experience. These findings support existing research that suggests the use of educational games can be an effective strategy for improving vocabulary acquisition and language learning. The study extends this research by demonstrating the specific benefits of the Memory Game with cards in a seventh-grade classroom setting. The results of this study suggest that incorporating games like the Memory Game into classroom instruction can foster an engaging and effective environment for language acquisition, particularly in mastering vocabulary. These findings can inform future research on the use of interactive learning tools and their impact on student outcomes. Additionally, the study's findings may have implications for educational policymakers and practitioners, highlighting the potential value of integrating game-based learning strategies into language curricula. Further research could explore the long-term effects of the Memory Game on vocabulary retention and language proficiency development.

Conclusion

The study aimed to investigate the impact of the Memory Game with cards on vocabulary mastery among seventh-grade students at SMP Negeri 8 Pematangsiantar. The study involved two classes: class VII-1 served as the experimental group, while class VII-2 acted as the control group. Both classes underwent the same pre-test and post-test, but the experimental class received instruction through the Memory Game with cards after the pre-test, whereas the control class continued with traditional textbook methods without any special intervention. The findings indicated that students who learned vocabulary through the Memory Game with cards achieved higher scores compared to those who used conventional textbook methods. The Memory Game not only challenges students' creativity and memory but also provides an enjoyable and effective way to reinforce learning. The significant improvement in the post-test scores of the experimental class highlighted the positive effects of this teaching method. The interactive nature of the game encouraged active participation from students, thereby enhancing their overall learning experience.

These findings support existing research that suggests the use of educational games can be an effective strategy for improving vocabulary acquisition and language learning. The study extends this research by demonstrating the specific benefits of the Memory Game with cards in a seventh-grade classroom setting. While the study has demonstrated the effectiveness of the Memory Game in improving vocabulary mastery, further research could explore the long-term effects of the Memory Game on vocabulary retention and language proficiency development. Additionally, the study's findings may have implications for educational policymakers and practitioners, highlighting the potential value of integrating game-based learning strategies into language curricula.

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