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Improving Students' Vocabulary Mastery through Word Association Strategy

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ABSTRACT

This study examined the effectiveness of the Word Association Strategy in improving the vocabulary mastery of eighth-grade students at SMP Negeri 4 Palu. Vocabulary learning in the classroom was dominated by conventional techniques that provided limited opportunities for students to develop meaningful word understanding and usage. To address this issue, the study employed a quantitative method using a quasi-experimental design with pre-test and post-test control groups. The population consisted of all eighth-grade students in the 2025/2026 academic year, from which two classes (VIII Cempedak and VIII Manggis) were selected through cluster random sampling. Class VIII Cempedak as the experimental group (n = 32) was taught using the Word Association Strategy, while Class VIII Manggis as the control group (n = 30) was taught using conventional methods. The study focused on students' vocabulary mastery of word meaning and usage, particularly common nouns, action verbs, and descriptive adjectives. Data were collected through vocabulary tests and analyzed using descriptive statistics and an independent samples t-test at the 0.05 level of significance. The results showed that the experimental group's mean score increased from 53.46 in the pre-test to 81.85 in the post-test, while the control group improved from 55.04 to 69.29. The t-test result revealed that the t-count (5.50) was higher than the t-table value (1.671), indicating a significant difference between the two groups. These findings demonstrate that the Word Association Strategy effectively enhances students' vocabulary mastery by facilitating meaningful word connections. Practically, English teachers can incorporate structured word association activities into regular vocabulary instruction to promote deeper word retention and more active student engagement in junior high school classrooms.

Keywords: Word Association; Vocabulary Mastery; Improving

INTRODUCTION

Vocabulary is widely recognized as a fundamental component of language learning, serving as the building block for all communicative skills. Students may understand grammatical rules, but without sufficient vocabulary, effective communication cannot take place. Wilkins, (1972) emphasizes that vocabulary is more crucial than grammar in communication because, without sufficient words, people are unable to convey messages effectively. This highlights that while grammar provides structure, vocabulary provides the essential content for meaningful language use.
Vocabulary acquisition, however, continues to be one of the most challenging aspects of English learning for junior high school students. Many students find it difficult to retain newly learned words or apply them appropriately in real communication. In many classrooms, vocabulary instruction is still dominated by traditional techniques such as rote memorization and translation, which often lead only to short-term retention. Ur (1996) states that vocabulary instruction should emphasize meaningful contexts rather than isolated word memorization, underscoring the need for more engaging and effective instructional strategies.

Preliminary observations at SMP Negeri 4 Palu indicated that eighth-grade students continue to face persistent difficulties in mastering English vocabulary. Some students hesitate to speak because they cannot recall the appropriate words, while others struggle to construct sentences due to limited lexical knowledge. Rahman & Lestari (2021)similarly found that students struggle to recall vocabulary when taught primarily through memorization rather than meaningful association. One promising approach to address students' vocabulary difficulties is the Word Association Strategy, which encourages students to link new vocabulary to prior knowledge through enjoyable and interactive activities. Based on Semantic Network Theory by Collins and Loftus (1975) activating one word can trigger the recall of other semantically related words, making learning more effective and memorable.

Although several studies have investigated the effectiveness of Word Association Strategy in improving vocabulary, most prior research has focused on general vocabulary development, motivation, or specific word types such as adjectives alone. Very few studies have examined the effectiveness of the Word Association Strategy specifically in strengthening mastery of three fundamental word classes, common nouns, action verbs, and descriptive adjectives, in a junior high school context. In addition, previous research has been dominated by Classroom Action Research (CAR), leaving a gap in experimental evidence that compares the impact of the Word Association Strategy with conventional teaching methods in a controlled setting.

The novelty of this study lies in its specific focus on evaluating how the Word Association Strategy enhances students' mastery of integrated core vocabulary categories (common nouns, action verbs, descriptive adjectives) using a quasi-experimental design, rather than CAR. This approach provides stronger empirical

evidence about the effectiveness of the technique by directly comparing learning outcomes between an experimental and a control group. Furthermore, the study introduces a structured word-association chart integrated with short texts, providing a more systematic and context-based application of the Word Association Strategy than previous studies. Therefore, the research problem of this study is whether the Word Association Strategy is significantly more effective than conventional teaching methods in improving the vocabulary mastery of eighth-grade students at SMP Negeri 4 Palu. Based on this problem, the study aims to investigate the effectiveness of the Word Association Strategy in enhancing students' vocabulary mastery in the specified context.

LITERATURE REVIEW

Word Association Strategy

Word Association Strategy is a vocabulary learning activity that encourages students to connect new words with other words they already know through an interactive and enjoyable process. In this strategy, students are introduced to a stimulus word and respond by producing other words that are semantically related, such as synonyms, antonyms, or words within the same category, allowing them to explore relationships between lexical items in context. This approach is in line with Semantic Network Theory, which explains that human memory is organized as a network of interconnected concepts, so activating one word can trigger the recall of other related words Collins and Loftus (1975). As a result, repeated activation of related vocabulary helps strengthen students' understanding and retention. In classroom practice, Word Association Strategy can be implemented either individually or collaboratively, for example through word chains, matching activities, or clustering related words, where students actively participate in recalling and sharing vocabulary. Utamy et al., (2024)reported that applying word association strategy in junior high schools improved students' ability to recall and use words more fluently during classroom interaction. Therefore, word association activities enhance students' memory and deepen their understanding of word relationships.

Vocabulary Mastery

Vocabulary mastery refers to learner`s ability to understand, store, and use words accurately and appropriately across a variety of communicative contexts. It is not limited to knowing a word`s meaning, it also encompasses its form (spelling and pronunciation), grammatical behaviour, collocations, connotations, and pragmatic usage. Schmitt (2010) explains that understanding a word includes knowing its form, meaning, and use, which means that true mastery of vocabulary involves both receptive knowledge recognizing words while reading and listening and productive knowledge using them accurately in speaking and writing. Furthermore, research by Fitriani and Sari (2021) in Indonesian junior high schools revealed that vocabulary master was significantly correlated with students` reading

comprehension scores, suggesting that lexical competence serves as a foundation for broader language proficiency. Given its multidimensional nature, vocabulary mastery should be a continuous focus in language learning, developed through strategies that encourage deep cognitive processing, promote associative connections, and provide opportunities for authentic language use. These strategies are discussed in the following section, which examines the range of vocabulary learning strategies available to language learners.

Previous Related Study

Previous studies have shown that word association–based strategies are effective in improving students' vocabulary mastery. Tryana and Mahmud (2023) reported that word association activities helped students strengthen vocabulary understanding and recall through meaningful connections. Similarly, Masood (2024) found that learners who applied word association strategies achieved higher vocabulary retention than those who relied on rote memorization. In addition, Putra et al., (2025) revealed significant improvement in students' vocabulary acquisition after the implementation of word association techniques in a junior high school context. Although conducted in different settings and research designs, these studies consistently indicate that word association strategies contribute positively to vocabulary learning.

METHOD

Design and Samples

This study applied a quantitative research method using a quasi-experimental design, specifically the non-equivalent control group design. Quantitative research is used to examine populations or samples through statistical analysis in order to test predetermined hypotheses (Sugiyono, 2018). The quasi-experimental design was selected because the researcher used intact classroom groups without randomly assigning individual students. The independent variable in this study was the Word Association Strategy, while the dependent variable was students' vocabulary mastery. The population of this study comprised all eighth-grade students at SMP Negeri 4 Palu in the 2025/2026 academic year, totaling 318 students from ten classes. The samples were selected through cluster random sampling using a lottery technique. The procedure was conducted in several steps. First, all ten classes were listed as sampling clusters. Second, each class name was written on identical slips of paper and placed into a container. Third, two classes were randomly drawn. Fourth, the selected classes were assigned as the experimental group and the control group. This sampling procedure follows the cluster sampling principles described by Cohen et al. (2018).

Based on the sampling results, Class VIII Cempedak (n = 32) was designated as the experimental group and received instruction using the Word Association Strategy. Meanwhile, Class VIII Manggis (n = 30) served as the control group and was taught

using conventional teaching methods by the English teacher. A one-tailed independent samples t-test was used because the study tested a directional hypothesis, namely that the Word Association Strategy would lead to higher vocabulary mastery compared to conventional instruction.

Instruments and Procedures

The researcher used a test as the main instrument to measure students' vocabulary mastery before and after the treatment. A research instrument functions as a tool to collect data and measure observed phenomena (Arikunto, 2010). The instrument consisted of a pre-test and a post-test covering common nouns, action verbs, and descriptive adjectives. The test included multiple-choice items, matching tasks, and fill-in-the-blank items and was developed based on the school curriculum and vocabulary mastery indicators. The research procedure was conducted in three stages. First, a pre-test was administered to both groups to determine students' initial vocabulary mastery. Second, the experimental group received treatment using the Word Association Strategy for six meetings, while the control group was taught using conventional methods during the same period. Third, a post-test was administered to both groups to measure students' vocabulary improvement after the treatment.

Data Analysis

The data were analyzed using statistical procedures. Students' scores from the pre-test and post-test were first converted into standardized scores using a scoring formula adapted from Arikunto (2006). Next, descriptive statistics were used to calculate the mean scores of both the experimental and control groups. To test the research hypothesis, an independent samples t-test was applied at the 0.05 level of significance. The alternative hypothesis was accepted when the t-count exceeded the t-table value, indicating a significant effect of the Word Association Strategy on students' vocabulary mastery.

RESULT AND DISCUSSION

The pre-test and post-test findings suggest that students' vocabulary mastery improved after the treatment. As presented in Table 3 and Table 4.

Table 3. The Pair Sample Statistic of Experimental Group

Experimental Group	Total Score	Mean	N	Deviation (d)	Square Deviation (d2)
Pre-Test	1710.64	53.46	32	908.57	23,473.38
Post-Test	2619.15	81.85			
Mean of Deviation				28.39	
Sum of Square Deviation					2,676.52

The results of the experimental group demonstrate a substantial improvement in students' vocabulary mastery after the implementation of the Word Association Strategy. Prior to the treatment, the 32 students in this group achieved a total pre-test score of 1710.64 with a mean score of 53.46, indicating a moderate initial level of vocabulary knowledge. Following the treatment, the post-test total score increased markedly to 2619.15, and the mean score rose to 81.85. The mean deviation between the pre-test and post-test scores was 28.39, reflecting a considerable gain in students' performance. In addition, the sum of squared deviations, which reached 2,676.52, suggests that the improvement was consistently distributed among the students in the experimental group.

Table 4. The Pair Sample Statistic of Control Group

Control Group	Total Score	Mean	N	Deviation (d)	Square Deviation (d2)
Pre-Test	1651.06	55.04	30	457.47	9,992.70
Post-Test	2078.72	69.29			
Mean of Deviation				15.25	
Sum of Square Deviation					3,016.74

Meanwhile, the control group also showed improvement, although the increase was less pronounced. The pre-test results of the 30 students in the control group revealed a total score of 1651.06 with a mean score of 55.04. After being taught through conventional instructional methods, the post-test total score rose to 2078.72, with the mean score increasing to 69.29. The mean deviation in this group was 15.25, indicating a moderate level of improvement from the pre-test to the post-test. The sum of squared deviations, amounting to 3,016.74, reflects variability in students' score changes within the group. Overall, while both groups experienced progress in vocabulary mastery, the experimental group showed a greater mean deviation and higher improvement in mean scores, indicating that the Word Association Strategy was more effective than conventional methods in enhancing students' vocabulary mastery.

After the sum of squared deviations for both groups had been determined, the researcher then calculated the significance of the difference between the experimental and control groups. The calculation is presented below:

$$t = \frac{M_x - M_y}{\sqrt{\left(\frac{\Sigma x^2 + \Sigma y^2}{N_x + N_y - 2}\right)\left(\frac{1}{N_x} + \frac{1}{N_y}\right)}}$$

$$t = \frac{28.39 \ - \ 15.25}{\sqrt{\left(\frac{2{,}676.52 + 3{,}016.74}{32 + 30 - 2}\right)\left(\frac{1}{32} + \frac{1}{30}\right)}}$$

$$t = \frac{13.14}{\sqrt{\left(\frac{5{,}693.26}{60}\right)\left(\frac{62}{960}\right)}}$$
$$t = \frac{13.14}{\sqrt{(94.89)(0.06)}}$$
$$t = \frac{13.14}{\sqrt{(5.69)}}$$
$$t = \frac{13.14}{2.39}$$
$$t = 5.50$$

From the calculation above, the value of the t-test ($t_{counted}$) was 5.50. The hypothesis testing was conducted to determine whether the treatment significantly influenced students' vocabulary mastery. The criterion for acceptance was that the calculated t-value exceeded the critical t-value from the t-table at the 0.05 significance level. In this study, the degree of freedom was calculated using the formula df = $N_x + N_\gamma - 2$, resulting in df = 60 based on 32 students in the experimental group and 30 students in the control group. With this degree of freedom, the critical t-value obtained directly from the t-distribution table was 1.671 for a one-tailed test at the 0.05 level. Since the t-count was higher than the t-table value, the alternative hypothesis was accepted, indicating that the Word Association Strategy had a significant effect on improving the vocabulary mastery of eighth-grade students at SMP Negeri 4 Palu.

This study was conducted to determine whether the Word Association Strategy effectively improves the vocabulary mastery of eighth-grade students at SMP Negeri 4 Palu. The statistical analysis showed that the obtained t-value (5.50) exceeded the critical value from the t-table (1.671) at the 0.05 level of significance. This indicates that the improvement in the experimental group was not due to chance but was associated with the instructional strategy applied. The stronger performance of the experimental group can be explained through the cognitive processes promoted by the Word Association Strategy. Unlike conventional memorization, the strategy required students to actively connect new vocabulary with previously learned words and meaningful contexts. According to the Semantic Network Theory (Collins & Loftus, 1975), memory is organized in interconnected nodes, and activating one word can trigger related lexical items. Through repeated associative activation, students likely developed richer lexical networks, which facilitated faster recall and more accurate word usage. This mechanism helps explain why the experimental group showed a larger mean gain than the control group.

Another contributing factor is the level of student engagement during the treatment. The Word Association activities required learners to participate actively, generate ideas, and discuss word relationships. Such active involvement is known to promote deeper processing of vocabulary compared to passive reception. This finding

supports Tryana and Mahmud (2023), who reported that word association activities strengthen vocabulary comprehension because students construct meaning through connections. Similarly, Masood (2024) argued that associative learning promotes long-term retention by encouraging elaborative cognitive processing. The present findings are also consistent with Putra et al. (2025), who found greater vocabulary gains when students were actively involved in vocabulary learning tasks. In contrast, the control group, which received conventional instruction, showed only moderate improvement. The learning activities in this group relied more heavily on explanation and memorization, which may have limited opportunities for students to build meaningful lexical connections. As a result, vocabulary gains in the control group were smaller and likely reflected surface-level learning rather than deeper lexical development.

However, several external factors may also have influenced the results. First, differences in students' initial motivation and learning habits could have affected how actively they participated in the treatment. Students who were more motivated may have benefited more from the interactive strategy. Second, classroom dynamics such as peer interaction and teacher support may have contributed to the effectiveness of the experimental treatment. Third, the relatively short treatment duration might have limited the maximum observable impact of the strategy. These factors should be considered when interpreting the findings. Despite these limitations, the overall pattern of results indicates that the Word Association Strategy provides meaningful cognitive and pedagogical advantages over conventional vocabulary instruction. The strategy not only improved students' test scores but also encouraged more active and connected vocabulary learning. Therefore, the Word Association Strategy can be considered an effective alternative approach for enhancing vocabulary mastery among junior high school EFL learners.

CONCLUSION

The results of this study indicate that the Word Association Strategy significantly improved the vocabulary mastery of eighth-grade students at SMP Negeri 4 Palu. Students who were taught using this strategy achieved higher vocabulary scores than those who received conventional instruction, demonstrating its positive impact on both vocabulary understanding and use. The strategy supported learning by encouraging students to connect new words with familiar terms and meaningful contexts, which strengthened retention and promoted active classroom participation. From a pedagogical perspective, English teachers at the junior high school level are encouraged to incorporate structured word association activities into regular vocabulary instruction. Teachers can implement word association charts, word clustering, and short text integration to help students build stronger lexical connections. Providing guided practice and sufficient time for discussion is also important to ensure that students form accurate and meaningful associations. This study has several limitations that should be acknowledged. The sample size was relatively small and limited to one school, which may restrict the

generalizability of the findings. In addition, the treatment was conducted over a short period, so the long-term effects of the strategy were not examined. Future researchers are therefore recommended to involve larger and more diverse samples, extend the duration of the treatment, and explore the impact of the Word Association Strategy on other language skills or vocabulary aspects.

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