

Utilizing Scramble Words Technique to Enhance Students' Vocabulary Mastery

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ABSTRACT

Vocabulary mastery is a fundamental component of English language learning. Nevertheless, many junior high school students encounter difficulties due to monotonous instructional methods. This study aimed to investigate the effect of the Scramble Words technique on vocabulary mastery among eighth-grade students. Using a quantitative quasi-experimental design, the study involved 61 eighth-grade students from SMP Negeri 7 Palu, who were divided into an experimental and a control group. Data were collected through a vocabulary pretest and posttest focusing on nouns, verbs, adverbs, and adjectives. The experimental group was instructed using the Scramble Words technique, whereas the control group received conventional teaching. Based on the analysis, the experimental group showed superior gains in vocabulary mastery compared to the control group. This difference was statistically significant, as evidenced by the t-test, which showed that the calculated t-value exceeded the t-table value at the 0.05 level. These findings suggest that the scramble words technique is an effective and engaging approach for enhancing vocabulary mastery among junior high school students.

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1. INTRODUCTION

Vocabulary mastery plays a crucial role in English language learning, as it forms the foundation for students' ability to communicate effectively, comprehend texts, and express ideas in both spoken and written forms. According to Nation and Nation [1], a comprehensive understanding of vocabulary involves three key aspects such as form, meaning, and use, each of which contributes to how words are recognized and employed in communication. Adequate vocabulary knowledge supports the development of other language skills, including reading, speaking, writing, and listening [2], [3]. [4] explain that vocabulary refers to an individual's understanding of words and their meanings, although this concept extends beyond a simple definition. Vocabulary encompasses both oral and written forms: oral vocabulary involves

words used in listening and speaking, while print vocabulary includes words recognized and applied in reading and writing. In addition, Vocabulary competence can be viewed as having two main dimensions: the ability to comprehend words when they are encountered (receptive knowledge) and the ability to apply those words correctly in expressive language use (productive knowledge). At the junior high school level, vocabulary learning becomes increasingly important because students are expected to use English communicatively in both academic and everyday contexts. Therefore, vocabulary instruction should receive serious attention to ensure effective language learning outcomes.

Despite the essential role of vocabulary in English learning, a considerable number of junior high school students encounter obstacles in vocabulary mastery, particularly due to limited vocabulary repertoires, struggles with memorizing vocabulary and recognizing word forms, and challenges in using vocabulary appropriately in context. This also affects their ability to apply new words in listening, speaking, reading, and writing tasks [5], [6], [7]. Several studies indicate that junior high school students' vocabulary mastery remains low, with many achieving unsatisfactory scores [8]. These difficulties are commonly caused by low learning motivation and the use of monotonous teaching methods that rely heavily on textbooks and teacher-centered instruction, resulting in reduced student engagement and interest in learning [9].

Similar problems were identified among eighth-grade students at SMP Negeri 7 Palu. Classroom observations revealed that many students had limited vocabulary, were unable to recall simple English words, and struggled to respond to basic questions in communication activities. Such conditions indicate the need for innovative, engaging instructional strategies that motivate students and enhance vocabulary retention. The Merdeka Curriculum also emphasizes meaningful learning experiences that encourage students to actively use vocabulary rather than merely memorize words [10].

One instructional strategy that addresses these challenges is the use of Scramble Words. Scramble Words is an educational game in which students arrange randomly ordered letters to form meaningful English words. This technique encourages active participation, collaboration, and critical thinking while strengthening vocabulary retention through repetition and retrieval practice [11], [12], [13]. Given the positive impact that interactive and word-oriented learning strategies can have on students' vocabulary skills, it is necessary to empirically examine the effectiveness of the scramble words technique in the EFL classroom, as supported by previous findings [14], [15]. Research findings show that students taught with Scramble Words experience significantly greater vocabulary gains than those taught with conventional methods. From a cognitive perspective, arranging scrambled words activates students' short-term memory and reinforces long-term memory through repeated exposure, which supports vocabulary mastery [16], [17].

Previous studies have demonstrated that the Scramble Words technique positively affects students' vocabulary mastery, spelling accuracy, and word recognition skills. However, empirical evidence focusing on eighth-grade junior high school students, particularly in the context of SMP Negeri 7 Palu, remains limited. Therefore, this study aims to investigate the effect of the Scramble Words technique on eighth-grade students' English vocabulary mastery using a quasi-experimental research design.

2. METHOD

This study employed quantitative research methods and a quasi-experimental design to examine the research variables. As stated by Creswell and Creswell [18] and Herwanis et al. [19], quantitative research involves selecting research questions, developing data-collection instruments, and analyzing numerical data using statistical procedures. The design involved two groups an experimental group and a control group. Both groups were administered a pretest to measure their initial vocabulary mastery, followed by a treatment phase, and a posttest to assess learning outcomes. The Scramble Words technique was implemented as the instructional method for the experimental group, whereas the control group was taught using standard teaching practices.

Experimental Group : O₁ X O₂
Control Group : O₃ O₄

Where:

O₁ O₃ = Pre-test

X = Treatment (Scramble Words Technique)

O₂ O₄ = Post-test

The population of this study consisted of all eighth-grade students at SMP Negeri 7 Palu in the 2024/2025 academic year, totaling 172 students from six classes. Purposive sampling was applied to select the sample based on specific considerations, as proposed by [20]. These included the availability of classes with relatively homogeneous ability levels and their relevance to the research objectives. Two classes with comparable average scores based on the midterm examination result were selected. The study involved two classes assigned to different roles: the experimental group and the control group. The total sample comprised 61 students. According to Creswell [21], a research instrument is a systematic tool that enables researchers to gather data in an organized manner. Based on this concept, the present study employed pretest and posttest instruments to examine students' vocabulary enhancement before and after the treatment, in accordance with the specified scoring criteria below:

Table 1. Scoring Criteria Test

No	Type of Items	Number of Items	Score per Items	Scoring Criteria
1	Multiple Choice	14	1	Correct = 1, Incorrect = 0
2	Matching	5	1	Correct = 1, Incorrect = 0
3	Fill in the Blank	5	1	Correct = 1, Incorrect = 0
Total Score		24		

The research instrument was a vocabulary test administered as a pretest and posttest. As presented in Table 1, each test consisted of 24 items, including multiple-choice questions, fill-in-the-blank items, and matching words items. Designed to measure students' mastery of nouns, verbs, adverbs, and adjectives based on the school curriculum. A

dichotomous scoring system was used, with correct answers scored 1 and incorrect answers scored 0.

To maintain consistency, the posttest was developed using the same format and difficulty level as the pretest. Content validity was established through expert judgement by two English lecturers and one English teacher.

Data analysis was conducted using quantitative statistical procedures, including descriptive statistics to calculate average scores and standard deviations for the experimental and control groups. An independent-samples t-test was conducted to determine whether there was a statistically significant difference between the experimental and control groups. The analysis followed Arikunto's (2019) statistical procedures, with a significance level of $\alpha = 0.05$. The decision was based on comparing the t-counted and t-table values, with a higher t-counted value indicating a significant effect of the scramble-word technique.

3. RESULTS AND DISCUSSION

This section presents the results of the study and discusses the findings obtained from the statistical analysis of the pre test and post test data. The discussion of results and interpreted in accordance with accepted principles of quantitative educational research to maintain clarity and methodological validity in relation to the research objectives and relevant theoretical perspectives [22].

3.1. Results

3.1.1 Result of Pretest and Posttest

The findings from the pretest and posttest reveal a substantial increase in students' vocabulary mastery.

Table 2. Total Score of Pretest and Posttest

Groups	N	Total Score of Pretest		Total Score of Posttest	
		Pretest	Mean	Posttest	Mean
Experimental	29	1866.69	64.36	2458.33	84.77
Control	32	1908.35	59.63	2141.65	66.92

The results from Table 2 show that both groups improved in vocabulary mastery from the pretest to the posttest. However, the increase in the experimental group was more pronounced than that of the control group. The experimental group's mean score rose from 64.36 in the pretest to 84.77 in the posttest, indicating a substantial improvement after instruction using the scramble words technique. In contrast, the control group showed a more moderate increase, with the mean score improving from 59.63 to 66.92 following conventional instruction. The findings suggest that instruction using the scramble words technique led to better vocabulary mastery outcomes than conventional teaching methods.

3.1.2 Result of Score Deviation

The score deviation calculation was used to assess the degree of improvement between the pretest and posttest in the experimental and control groups.

Table 3. Total Deviation, Mean, Squared, and Sum of Squared Deviation

Groups	N	Total Score of Deviation			
		D	Mean	d2	Sum d2
Experimental	29	591.64	20.41	17918.63	5836.6
Control	32	233.3	7.29	15383.06	15381.3

Table 3 presents the total deviation and squared deviation for both groups. The experimental group shows a considerably higher total deviation and mean deviation (20.41) than the control group (7.29), demonstrating a significant improvement in vocabulary mastery as a result of the treatment. This difference suggests that students who received instruction through the scramble words technique experienced more substantial progress than those taught using conventional methods. The larger deviation values in the experimental group reflect a stronger instruction effect on students' vocabulary development.

After computing the sum of squared deviations, an independent sample t-test was applied to determine the statistical significance of the difference between the two groups based on Arikunto's (2006) procedure.

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

$$t = \frac{20.42 - 7.29}{\sqrt{\left(\frac{5836.6 + 15381.3}{29 + 32 - 2}\right) \left(\frac{1}{29} + \frac{1}{32}\right)}} \tag{2}$$

$$t = \frac{13.12}{\sqrt{\left(\frac{2121.79}{59}\right) \left(\frac{1}{29} + \frac{1}{32}\right)}} \tag{3}$$

$$t = \frac{13.12}{\sqrt{(359.625) (0.0657)}} \tag{4}$$

$$t = \frac{358.34}{\sqrt{22.966}} \tag{5}$$

$$t = \frac{13.12}{4.86} \tag{6}$$

$$t = 2.70 \tag{7}$$

Based on the calculation using the t-test formula and the data from both groups, the t-counted value obtained is 2.70, which is higher than the t-table value at the 0.05 significance level.

3.1.3 Testing Hypothesis

Hypothesis testing was conducted using an independent-samples t-test to examine the effect of the scramble technique on students' vocabulary mastery. The analysis revealed that the obtained t-value (2.70) exceeded the critical t-value (2.008) at the 0.05 significance level with 59 degrees of freedom. Indicating a statistically significant difference between the

experimental and control groups. Accordingly, the null hypothesis (H_0) was rejected, and the alternative hypothesis (H_a) was accepted, indicating that the scramble words technique had a statistically significant positive effect on students' vocabulary mastery. This finding supports the assumption that instructional interventions are effective when statistically significant differences are observed between comparison groups [23].

3.2 Discussion

The findings of the present study suggest that implementing the Scramble Words technique led to a noticeable enhancement in students' vocabulary mastery compared to conventional instruction. The experimental group showed a substantially higher increase in mean posttest scores than the control group, indicating that students taught using the scramble words technique achieved better vocabulary learning outcomes. This finding is further supported by the independent-samples t-test, which revealed that the obtained t-value (2.70) exceeded the critical t-value (2.008) at the 0.05 level of significance, indicating that students' vocabulary mastery improved.

The treatment was applied only to the experimental group and was implemented systematically through the Scramble Words technique across six meetings. During the treatment sessions, students were actively engaged in reconstructing vocabulary items from scrambled words through guided practice and collaborative tasks. This process encouraged students to focus not only on word forms but also on spelling accuracy and meaning, creating a more meaningful learning experience. This learning process encouraged active participation and allowed students to practice word recognition, spelling, and comprehension both individually and collaboratively. In contrast, students in the control group were taught using conventional teacher-centered methods, which primarily involved direct explanation and individual exercises focused on word definitions and simple applications. As a result, students in the control group had fewer opportunities to actively engage with vocabulary items, resulting in a more limited enhancement.

Although these activities were primarily passive, students had fewer opportunities to actively manipulate vocabulary, resulting in a less interactive learning experience [24]. After the instructional period, both groups completed a posttest to measure vocabulary mastery. Based on the statistical results, the experimental group outperformed the control group in mean score achievement, indicating greater improvement in vocabulary recall and understanding. The interactive nature of the Scramble Words technique appeared to support more effective vocabulary internalization. Further analysis using a t-test revealed that the t-counted value (2.70) exceeded the t-table value (2.008) at the 0.05 significance level with 59 degrees of freedom. These findings confirm a statistically significant difference between the groups, supporting the acceptance of the alternative hypothesis and the rejection of the null hypothesis, and demonstrating that the Scramble Words technique significantly enhances students' vocabulary mastery. The findings of this study align with earlier investigations and highlight the positive role of game-based learning in vocabulary enhancement. Alfares [25] reported that the use of word wall scramble words in the EFL classroom significantly enhanced students' vocabulary mastery. Moreover, [26 through a systematic review, emphasized that game-based learning approaches generally enhance

student engagement, motivation, and retention, which supports the effectiveness of interactive games for vocabulary mastery.

These results suggest that incorporating interactive word-based games into vocabulary instruction, such as Scramble Words, can create a more engaging learning environment and support students' language development.

CONCLUSION

This study concludes that the Scramble Words technique serves an important function in enhancing students' vocabulary mastery by promoting active involvement and meaningful engagement with vocabulary items. Through its interactive approach, the technique encourages learner participation and fosters a more dynamic and motivating vocabulary-learning environment. From a pedagogical standpoint, the findings indicate that the Scramble Words technique may function as a viable alternative to traditional, teacher-centered instructional practices, particularly in junior high school English classrooms. Its interactive characteristics align with learner-centered and communicative language teaching approaches, thereby supporting students' motivation and vocabulary development. Despite these contributions, the study is subject to several limitations, including its limited research context, relatively small sample size, and emphasis on particular word categories. As a result, the findings should be considered within these constraints.

Accordingly, future studies are recommended to involve larger and more diverse participant groups, extend the duration of instructional implementation, and examine additional dimensions of vocabulary knowledge or other language skills. Overall, this research offers valuable insights for English language educators by highlighting the potential of interactive instructional strategies to foster effective and enjoyable vocabulary learning experiences.

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