



The Influence of Using Crossword Puzzle Media on Increasing Mastery of English Vocabulary in Junior High Schools

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Article Info	Abstract
Received: 2026-06-10 Revised: 2026-06-15 Accepted: 2026-06-30 Keywords: Crossword Puzzle; Vocabulary; Quasi-Experimental DOI: 10.24256/ideas.v14i1.12022 Corresponding Author: Rufiana Zulfia Zulfiarufiana@gmail.com Pendidikan Bahasa Inggris, STKIP Muhammadiyah Aceh Barat Daya	<i>Vocabulary mastery is a crucial element in learning English as a foreign language. This study aims to examine the effectiveness of using crossword puzzles as a teaching tool to improve the English vocabulary mastery of seventh-grade students at SMP Negeri 1 Susoh. This study employed a quantitative approach with a quasi-experimental design (pretest-posttest control-group design). The sample consisted of 59 students selected through cluster sampling, divided into an experimental class (Grade VII C, n = 29) and a control class (Grade VII A, n = 30). Data were collected using a vocabulary proficiency test and analyzed using descriptive statistics and an independent-samples t-test in SPSS. The results of the analysis showed a significant difference in mean post-test scores between the experimental and control classes ($t(57) = 7.705$; $p < 0.001$). The mean post-test score for the experimental class was 79.69, significantly higher than the control class's mean of 65.17. These findings demonstrate that the use of crossword puzzles as a teaching medium significantly improves students' English vocabulary mastery compared to conventional teaching approaches.</i>

1. Introduction

Vocabulary mastery plays a fundamental role in English language learning because it serves as the primary foundation for the development of the four language skills: listening, speaking, reading, and writing. Yang (2024) emphasizes that an adequate vocabulary enables students to understand the content of texts and communicate effectively. In the context of learning English as a Foreign Language (EFL), a broad vocabulary facilitates understanding of the material, the expression of ideas, and interaction among students.

Therefore, expanding vocabulary mastery is one of the key learning outcomes at the junior high school (SMP) level.

Nevertheless, many junior high school students continue to face challenges in mastering English vocabulary. Wahyuningsih and Maretha (2024) reported that limited vocabulary impedes students' comprehension of lessons and diminishes their confidence in using English. Furthermore, teacher-centered instructional methods often reduce students' engagement and opportunities for active learning (Hadiyanto, 2024).

Based on initial observations at Susoh Public Junior High School No. 1, many seventh-grade students face similar challenges. Students tend to have difficulty understanding the meanings of new words, remembering words they have already learned, and applying that vocabulary in classroom activities. On the other hand, the learning process remains teacher-centered, with a heavy reliance on textbooks and memorization activities, resulting in very limited active student engagement. This situation highlights the need for more interactive learning media to facilitate active vocabulary acquisition (Nurfadilah et al., 2025).

One relevant interactive medium for addressing this issue is the crossword puzzle. This medium combines game elements with the educational process. Ramadhani and Shofiyuddin (2025) explain that crossword puzzles can strengthen students' memory of new vocabulary because they require students to connect clues with the correct words through problem-solving activities. The use of this medium also has the potential to foster students' motivation and participation in learning.

In 21st-century learning, students are at the center of the process and take an active role in building their knowledge. This approach focuses on developing the 4C skills: critical thinking, creativity, communication, and collaboration, which are important for meeting global and technological challenges (Hadiyanto, 2024). Using interactive learning tools is important because they help increase student participation, motivation, and engagement. Crossword puzzles are one example of such a tool. They are interactive because they get students involved in solving problems, making connections, and taking part in activities that require critical thinking and communication (Ramadhani & Shofiyuddin, 2025).

A number of previous studies have confirmed the effectiveness of crossword puzzles in vocabulary instruction. A study by Siahaan et al. (2024) demonstrated that the use of crossword puzzles significantly improved the vocabulary mastery of seventh-grade junior high school students. Shohib (2024) also found that crossword puzzles can enhance students' vocabulary skills through a challenging learning experience. In line with this, Yang (2024) states that this medium not only improves vocabulary mastery but also supports reading comprehension. Furthermore, Amanda et al. (2025) emphasize that the use of interactive games such as crossword puzzles has been proven to provide tangible benefits for improving students' vocabulary.

Although previous studies have reported positive findings regarding the use of crossword puzzles in vocabulary learning, several gaps remain. First, limited studies have employed a quasi-experimental design with a control group to compare crossword puzzle instruction with conventional teaching at the junior high school level. Second, previous studies were conducted in different educational contexts; therefore, evidence regarding the effectiveness of crossword puzzle media in SMP Negeri 1 Susoh remains limited. Third, further empirical evidence is needed to strengthen the application of interactive learning media in supporting vocabulary learning within the context of student-centered learning.

Drawing from the information provided, this study investigates the subsequent research question: Does incorporating crossword puzzle media significantly enhance the English vocabulary proficiency of seventh-grade students at SMP Negeri 1 Susoh in comparison to traditional teaching approaches? Thus, this research seeks to establish if

employing crossword puzzle media notably enhances seventh-grade students' mastery of English vocabulary in comparison to traditional teaching approaches.

The assumptions of this research were developed as outlined below:

H₀: The implementation of crossword puzzles does not notably enhance the English vocabulary proficiency of seventh graders at SMP Negeri 1 Susoh.

H₁: The application of crossword puzzles notably enhances the English vocabulary proficiency of seventh-grade learners at SMP Negeri 1 Susoh.

2. Method

This study employs a quantitative approach with a quasi-experimental design to test the effectiveness of crossword puzzles in improving junior high school students' English vocabulary proficiency. Based on Creswell's (2023) perspective, a quasi-experimental design was applied to test a cause-and-effect relationship by administering a treatment to a specific group, without fully randomizing the subjects (random task). Specifically, this study employed a pretest-posttest control group design involving an experimental group and a control group.

The experimental group was taught using crossword puzzles, while the control group was taught using conventional methods. To ensure the consistency and validity of the results, the treatment for the experimental group was administered uniformly. All students in that group received the same set of crossword puzzles, which were specifically designed based on the list of target competencies outlined in the curriculum.

This intervention was conducted during regular English class periods by the same teacher using a structured procedure, ranging from an introductory phase, guided practice, to a discussion of the answers. This approach ensures that all participants in the experimental class receive an equivalent learning experience (Fraenkel et al., 2021). Through this design, the researchers compared students' comprehension abilities before and after the intervention to identify differences in learning outcomes between the two groups.

This experiment was conducted over six sessions. In the first session, the second group took a pre-test to measure their initial level of comprehension. The next four sessions constituted the implementation phase, during which the experimental group learned using crossword puzzles, while the control group received conventional language instruction. In the sixth session, or the final phase, both groups took a post-test using the same instrument to assess the effectiveness of the treatment.

The population in this study comprised all seventh-grade students at Susoh Public Junior High School 1 during the 2026–2027 school year. The sample was selected using cluster sampling because it was not possible to randomize individuals within the already-formed classes (Ary et al., 2021). Based on recommendations from the English teachers, two classes with relatively comparable academic ability levels were selected. Class VII.C, consisting of 29 students, was designated as the experimental group, while Class VII.A, with 30 students, served as the control group. This selection aimed to ensure that both groups had comparable baseline abilities before the intervention was implemented.

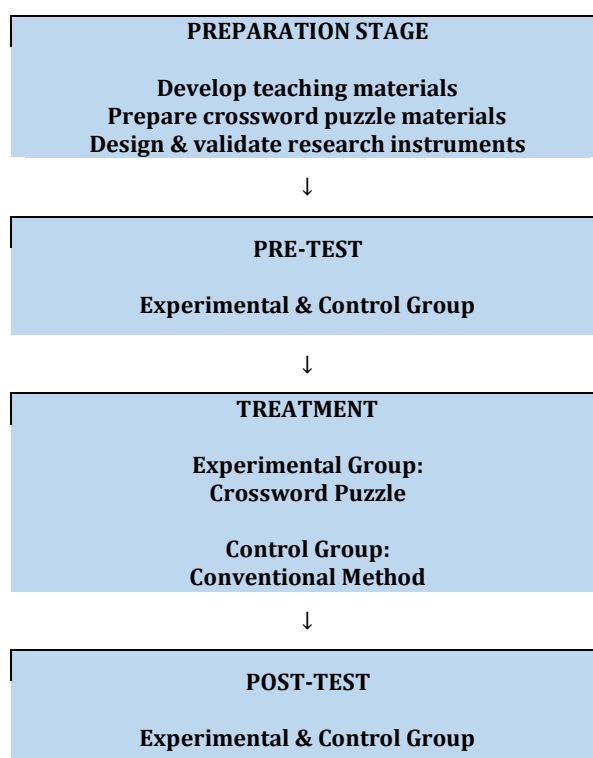
This study focuses on two variables: one independent variable and one dependent variable. The independent variable is the use of crossword puzzles in English language instruction, while the dependent variable is students' mastery of knowledge. This mastery of comprehension encompasses students' ability to recognize the meaning of words, understand the use of words in context, identify synonyms and antonyms, and apply their comprehension appropriately in various learning situations.

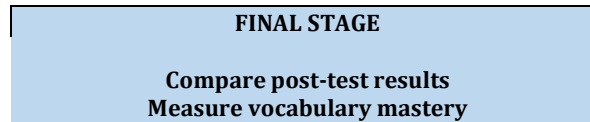
The data collection instrument used was a multiple-choice English comprehension test consisting of 20 items, administered during both the pre-test and post-test. This test was designed to measure specific indicators of comprehension proficiency relevant to the learning material. According to Fraenkel et al. (2021), tests are effective instruments for measuring student learning outcomes objectively and systematically. Before use, this instrument underwent a content validity test by English language education experts to ensure the alignment of the test items with the learning objectives. Additionally, a reliability test was conducted using Cronbach's Alpha, yielding a coefficient of 0.741. This figure indicates that the instrument has good internal consistency and is suitable for research.

The crossword puzzle material was developed in accordance with the 7th-grade English curriculum, focusing on the topics of Animals, Family, and Classroom Objects. Students were asked to solve the puzzles using clues in the form of simple definitions, descriptions, or pictures with an accurate understanding of English. The learning procedure in the experimental class began with the teacher presenting the learning objectives and new mathematical concepts. Next, students worked on the crossword puzzles individually or in pairs under the teacher's guidance. The activity concluded with a whole-class discussion to review the answers, followed by reinforcement of the material through spelling exercises, pronunciation practice, and contextual examples. In contrast, instruction in the control class covered the same topic but was conducted conventionally through teacher explanations, textbook exercises, translation, and memorization activities, without the use of crossword puzzles.

Broadly speaking, the data collection procedure was carried out in three main stages. The preparation stage included developing a lesson plan, creating crossword puzzles, and designing and validating the instruments. The implementation stage began with a pre-test, followed by the intervention for each group, and concluded with a post-test. Finally, the finalization stage involves comparing the post-test results to measure the effectiveness of the treatment on comprehensive knowledge mastery.

The data collection procedure is conducted in three stages:





The collected data were then analyzed using descriptive and inferential statistical methods with the aid of SPSS software. Descriptive statistics were used to present the mean, minimum, maximum, and standard deviation of the students' comprehension scores. Before the hypothesis testing stage, the data were first evaluated through normality and homogeneity tests to ensure that the basic assumptions for parametric analysis were met. The final analysis used an independent samples t-test at a significance level of 0.05 to test whether there was a significant difference in learning outcomes between the experimental and control groups.

3. Result

This research seeks to assess if employing crossword puzzles as an educational resource significantly impacts seventh-grade students' mastery of English vocabulary in comparison to traditional teaching techniques.

Table 1. Descriptive Statistics of Students' Vocabulary Scores

Group	Test	N	Mean	SD
Experimental	Pre-test	29	55.69	7.383
Experimental	Post-test	29	79.69	7.672
Control	Pre-test	30	54.57	6.426
Control	Post-test	30	65.17	6.793

Table 1 provides the descriptive statistics for students' vocabulary scores in the experimental group and the control group. The experimental class (VII.C) recorded an average pretest score of 55.69 (SD = 7.12) and a posttest average of 79.69 (SD = 7.67). The control group (VII.A) had an average pretest score of 54.57 (SD = 8.01) and a posttest average of 65.17 (SD = 6.79). In the experimental group, the lowest and highest posttest scores were 68 and 92, respectively, whereas the control group recorded scores of 53 and 80. These findings suggest that both groups began with comparable vocabulary skills, but the experimental group, utilizing crossword puzzles, experienced a larger enhancement following the intervention.

Table 2. Normality and Homogeneity Tests

Test	Sig.	Decision
Shapiro-Wilk (Experimental Post-test)	0.617	Normal
Shapiro-Wilk (Control Post-test)	0.259	Normal
Levene's Test	0.793	Homogeneous

The results of the normality test performed with the Shapiro-Wilk test indicate that the post-test scores for the experimental group ($p = 0.617$) and the control group ($p = 0.259$) adhere to a normal distribution. Moreover, Levene's test for homogeneity yielded a p-value of 0.793, indicating that the variances between the two groups are the same. As a result, the information meets the requirements needed for an independent samples t-test.

Table 3. Independent Samples t-Test

Levene's Sig.	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval
0.793	7.705	57	.000	14.523	10.748 – 18.298

The findings from the independent samples t-test reveal a significant disparity in the post-test scores between students in the experimental group and those in the control group ($t(57) = 7.705, p < 0.001$). The experimental group's average post-test score ($M = 79.69$; $SD = 7.672$) exceeded that of the control group ($M = 65.17$; $SD = 6.793$), resulting in a mean difference of 14.523 points. Consequently, the null hypothesis (H_0) was dismissed, and the alternative hypothesis (H_1) was embraced. The findings of this research show that employing crossword puzzles as a teaching strategy greatly enhances students' English vocabulary skills in comparison to traditional teaching approaches.

4. Discussion

This study aimed to evaluate the effectiveness of using crossword puzzles as a teaching tool for improving English vocabulary among Year 7 students. The main finding showed a very significant difference in post-test scores between the experimental group (Class VII.C), which received an intervention in the form of crossword puzzles, and the control group (Class VII.A), which was taught using conventional methods. The average post-test score for the experimental group was 79.69, significantly higher than the 65.17 achieved by the control group. This fact confirms that the integration of crossword puzzles as a teaching aid is demonstrably more effective in facilitating vocabulary acquisition. This finding is consistent with the results of Alfaini and Ma'rifatulloh (2023), who demonstrated that the use of crossword puzzles significantly improves students' vocabulary scores in secondary school compared to traditional teaching approaches.

The increase in learning outcomes in this experimental group indicates that the use of instructional media that demands active student involvement is crucial in the process of acquiring vocabulary. Through crossword puzzles, students do more than just memorise words; they actively interact with them through problem-solving based on clues. Ramadhani and Shofiyuddin (2025) emphasise that problem-solving activities in crossword puzzles provide students with the opportunity to apply vocabulary in meaningful contexts, thereby strengthening their memory. Furthermore, an analysis by Utami et al. (2022) also showed that crosswords stimulate cognitive processes more intensely, helping students to internalise the meaning of words more effectively.

The success of this medium also highlights the weaknesses of conventional methods, which tend to be teacher-centered. Traditional learning often limits students' scope for exploration and can potentially lead to boredom or a lack of interest—key factors contributing to low vocabulary proficiency (Puspasari, Rahmadani, & Mukrim, 2024). In contrast, crossword puzzles create a more lively and interactive classroom dynamic. Rizqi and Usman (2021) found that integrating puzzle-based games is effective in stimulating student participation and engagement outcomes that are difficult to achieve through conventional lecture-based methods.

Overall, the benefits of crossword puzzles identified in this study reinforce the argument regarding the importance of educational games in EFL (English as a Foreign Language) classrooms. A learning experience that is both enjoyable and academically challenging has proven effective in boosting students' motivation to learn. As Shohib (2024) emphasizes, crossword puzzles are not merely a form of entertainment but a meaningful

instructional tool that provides a more engaging and challenging learning experience while enriching students' vocabulary.

Although the results of this study offer positive implications in the form of recommendations for educators to use crossword puzzles as an alternative medium for teaching vocabulary, there are several limitations that need to be considered. This study involved only a small sample of 59 students from a single school and was conducted over a relatively short period of time. Therefore, the generalizability of these findings remains limited. To validate and expand upon these findings, further studies are recommended to include a larger sample size, involve various educational levels, and explore the potential for integrating crossword puzzles into digital technology-based learning formats.

5. Conclusion

The findings of the research show that employing crossword puzzles as an instructional tool significantly impacts the English vocabulary skills of seventh-grade students at SMP Negeri 1 Susoh. The findings from the independent samples t-test indicate a significant difference in the post-test scores of the experimental group compared to the control group ($t(57) = 7.705, p < 0.001$). Consequently, the alternative hypothesis (H_1) is confirmed, whereas the null hypothesis (H_0) is dismissed. These results address the research inquiry that employing crossword puzzles is more efficient in enhancing students' mastery of English vocabulary compared to traditional teaching methods.

Crossword puzzles can act as a different approach for teaching vocabulary since they assist learners in understanding and applying vocabulary more efficiently via organized learning tasks that require active involvement from students. Therefore, English teachers may consider using this medium as a teaching variation to support improved vocabulary learning outcomes. However, this study has limitations because it involved only 59 students from a single school and was conducted over a limited learning period. Therefore, future research is recommended to involve a larger number of participants, be conducted in different school contexts, and examine the effectiveness of crossword puzzles on other language skills or in digital technology-based learning.

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