



## THE EFFECTIVENESS OF USING CROSSWORD PUZZLE ON THE VOCABULARY MASTERY OF 10<sup>TH</sup> GRADE STUDENTS AT SMA NEGERI 3 MATARAM

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**Abstract:** The objective of this study was to determine the impact of crossword puzzles on the 10<sup>th</sup> grade students vocabulary at SMA Negeri 3 Mataram. This research applied a pre-experimental design with one group pre- test post-test assessment. The population consisted of all 10<sup>th</sup> grade students at SMA Negeri 3 Mataram and used a purposive sampling which included 71 students from X IPS 1 and X IPS 3. Data analysis was conducted using paired sample t- test in SPSS 26 Version. The findings indicated that the mean score on the pre-test was 61.2958, while after the treatment, the mean score on the post-test significantly increased to 82.5915. The paired sample t-test yielded a significance value of 0.00, indicating a highly significant result. With a confidence interval of 95%, the difference in scores ranged from -22.5122 to -20.0793. These results led to the conclusion that employing crossword puzzles as a teaching tool is highly effective for enhancing students' vocabulary mastery.

**Keywords :** Vocabulary mastery, Crossword puzzle, effectiveness

### INTRODUCTION

A strong command of vocabulary is essential for gaining English competency. Students must acquire a large vocabulary in order to flourish in reading, listening, speaking, and writing. Insufficient vocabulary knowledge might make it difficult for kids to use language abilities. Furthermore, Alqahtani (2015) said that students need word stock to be able to express and understand a meaning or concept when they want to. That statement clarifies that the vocabulary possessed by students will greatly affect every language skill they have. In line, Lail (2018) mentioned that the students need to increase their vocabulary to help them in communicating. To convey meaning effectively and utilize language skills, including receptive ones like listening and reading, as well as productive ones like speaking and writing, a considerable vocabulary is essential. Another definition of vocabulary stated by Nugroho and Suprpto (2017) that every word used by the individual speaker to convey meaning or express what they want to stay is called vocabulary. In addition, Rostina and Rahayu (2022) also stated that vocabulary is one of language component and a listed of word used to communicate.

In order to achieve a large number of vocabularies by the students, English is set as one of the subject in every level of education in Indonesia. According to Faridatuunnisa (2020) English as a foreign language has become a concern in Indonesia to learn English from an early age since the 90s. Addressing the awareness of the importance of learning English for the nation's generation, Indonesian ministry of education and culture issued a policy number 0487/1992, chapter VIII which states that English can be used as one of the subjects at the elementary

school. With this policy, it is hoped that it will affect the number of vocabulary mastered by students because English has been taught since elementary school.

In teaching vocabulary, various teaching models are available for educators to use when delivering instructional content, and games are one such model. Games as stated in Wright et al. (2006) can be defined as a one method or technique that can be used in teaching to engage the students in learning. In language teaching, numerous game models can serve as effective mediums for delivering learning materials. Among these models, word games like crossword puzzles stand out as valuable tools for language instruction. According to Salen and Zimmerman (2004) puzzle is defined as a unique game with a right answer or set of answers. A crossword puzzle is a word game designed to enhance vocabulary learning in a language. In teaching English, crossword puzzles are used as a method to introduce new vocabulary. Tambaritji and Atmawidjaja (2020) states that crossword puzzles serve as a means to help students remember new words and their meanings effectively. Another definition also added by Ekayanti, et al. (2019) that crossword puzzle is a puzzle divided into blank squares and cancelled (black, shaded, or crosshatched) squares with list of number definition or clues to answer. Integrating crossword puzzles into learning activities makes the process more engaging and encourages active participation among students.

Word games in the form of crossword puzzle can help students remember vocabulary that is new to them. In other words, the use of crossword puzzle in teaching can help in enriching students' vocabulary. It can also train students' problem solving and help them to be interactive in class. Jones (2007) emphasized that incorporating crossword puzzles into the learning process can be beneficial in enhancing students' vocabulary and memory skills. Additionally, Plaister, as cited in Anwar and Efransyah (2018), further highlighted that using crossword puzzle games as a teaching tool not only helps students learn vocabulary through active engagement but also fosters critical thinking and enjoyment in the learning process. Employing crossword puzzles during teaching and learning activities enables teachers to align their instruction with the context. As a game, crossword puzzles add vibrancy to the classroom atmosphere, encouraging active participation from students and preventing boredom.

To sum up everything, this research aims to investigate the effectiveness of utilizing a game-based learning approach, specifically employing crossword puzzle games, to enhance the vocabulary proficiency of 10th-grade students at SMA Negeri 3 Mataram. The researcher is interested in examining whether the use of crossword puzzle is effective in teaching vocabulary to the 10<sup>th</sup> grade students at SMA Negeri 3 Mataram.

## **RESEARCH METHOD**

This study used a pre-experimental research strategy with one group pre-test and post-test research. The sample for this study consisted of 71 students from SMA Negeri 3 Mataram's X IPS 1 and X IPS 3. The information was gathered in two stages i.e. pre-test and post-test. The research instrument utilized in this study was a multiple choice with 25 questions and a crossword puzzle as a teaching medium. The treatment given for the students were explanations and exercises presented as crossword puzzles containing picture clues and also phrases/sentences clues. The collected data were examined using a paired sample T-test on SPSS 26 Version to see whether there is a significant effect of using a crossword puzzle to teach vocabulary to the student.

## FINDINGS AND DISCUSSION

### FINDINGS

The main objective of this study was to examine the impact of using crossword puzzles on students' vocabulary mastery at SMA Negeri 3 Mataram. The research was carried out in X IPS 1 and X IPS 3 classes, involving a total sample of 71 students. The study spanned six sessions, encompassing the pre-test, treatment, and post-test stages. The first session commenced on 17th February 2023, and the final session concluded on 11th April 2023.

To evaluate the effectiveness of using crossword puzzles for teaching new vocabulary to students, the researchers required both pre-test and post-test scores for analysis. The treatment, involving the implementation of crossword puzzles, was administered during four sessions. The students' pre-test and post-test scores are presented in the table below:

Table 1. The Result of Student

Category	Score	Frequency	
		Pre- Test	Post- Test
Very Good	89- 100	0	7
Good	77- 88	0	46
Enough	65- 76	24	18
Less	53- 64	34	0
Fail	0 - 52	13	0
Highest Score		76	96
Lowest Score		40	76
Mean Score		61.2958	82.5915

Table 1 shows the students' scores before and after the treatment. The students' score before the treatment was below the passing grade set by the school which was 75. In the table, it can be seen that students' score before the treatment was categorized from enough to fail and the mean score was 61.2958. After the treatment, there was an increase in students' score from 61.2958 and it became 82.5915.

Table 2. Paired Sample Test  
Paired Differences

	Mean	Std. Deviation	Std. Error Mean	95% Confidence interval of the difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pair 1 Pre- Test- Post- Test	-21.29577	5.13919	.60991	-22.5122	-20.0793	-34.916	70	.000

According to the table provided, the degrees of freedom (df) were 70, and the t-value was -34.916. These findings indicate a significant difference between the pre-test and post-test results after the implementation of crossword puzzles in the teaching and learning activity. Consequently, the use of crossword puzzles proved to be effective in enhancing the vocabulary mastery of 10th-grade students at SMA Negeri 3 Mataram.

The analysis reveals that the 2-tailed significance value obtained was 0.00, which is less than the significance level of 0.05. As a result, the alternative hypothesis ( $H_a$ ) is accepted, and the null hypothesis ( $H_0$ ) is rejected. This outcome leads to the conclusion that using crossword puzzles indeed has a significant effect on improving the vocabulary mastery of 10th-grade students at SMA Negeri 3 Mataram.

## **DISCUSSION**

The main objective of this study was to assess the impact of using crossword puzzles on the vocabulary mastery of 10th-grade students at SMA Negeri 3 Mataram. To gather the necessary data, the research procedure was divided into three stages. The initial step involved administering a pre-test to evaluate the students' proficiency before the treatment was introduced. Subsequently, the treatment phase involved incorporating crossword puzzles into the teaching and learning activities over four sessions. Finally, the post-test was administered after the treatment to determine whether there was a noticeable effect resulting from the use of crossword puzzles during the learning activities.

To evaluate the effectiveness of using crossword puzzles in improving students' vocabulary mastery, both pre-test and post-test scores were required. Based on the research findings, the analysis demonstrated an improvement in student scores before and after the treatment. The average score on the pre-test was 61.2958, indicating that the students' English proficiency was relatively low at the beginning. The score was below the passing grade set by the school i.e. 75. Then students are given treatment by applying crossword puzzle in learning and the average score increase became 82.5915.

According to table 2 above, it can be seen that the significance values was at 0.00, mean that the value was lower than 0.05. The analysis revealed a significant difference between the pre-test and post-test scores. Consequently, the alternative hypothesis ( $H_a$ ) was accepted, and the null hypothesis ( $H_0$ ) was rejected. The obtained significance value supported the theories proposed by Jones (2007) and Davis et al. (2009), confirming that using crossword puzzles in teaching effectively enhances students' vocabulary mastery. The incorporation of crossword puzzles provides a fun and engaging learning approach, aiding students in memorizing new English vocabulary effectively.

The increase in scores obtained before and after the treatment shows the effectiveness of using crossword puzzles as a medium in teaching new vocabulary to students. It can be seen from the result of data analysis above that the students' scores before the treatments was below the minimum passing grade. After crossword puzzle applied in teaching, there was an increase in student learning outcomes which can be seen from the scores that passed the minimum passing grade of English subject at SMA Negeri 3 Mataram. Based on the results obtained, it can be said that using crossword puzzles in teaching new vocabulary has a positive influence on 10<sup>th</sup> grade students at SMA Negeri 3 Mataram. The findings of this study align with those of a previous research conducted by Yuliandri et al. (2015) titled "The Effect of Using Crossword Puzzle on Vocabulary Achievement of The Eight Grade Students at SMP Negeri 6 Bondowoso." Yuliandri's study demonstrated that crossword puzzles had a significant positive impact on the vocabulary mastery achievement of students at SMP Negeri 6 Bondowoso.

The result obtained by the researcher also in line with the study conducted by Nugroho and suprpto (2017), Vina and Nai (2020), and Fachrozi, et al. (2021). Those previous study states that using crossword puzzles in teaching and learning activities can improve students' vocabulary mastery. The results are in accordance with the data that has been obtained by the

researchers where after the implementation of crossword puzzles in learning, there is a significant increase in students' learning outcomes. Therefore, it can be said that the use of crossword puzzle can help in teaching new vocabulary to students and improve their vocabulary in a fun way and makes them more involved in teaching and learning process.

From the description of research finding above, Crossword puzzle surely showed the effectiveness in teaching vocabulary to the student. It can be seen from the research finding that showed the significance different between the score before the students were given the treatment and after they got the treatment. The result also in line with four previous study mentioned in discussion whereas those study have confirmed that crossword puzzles can effectively help students to improve their vocabulary. In conclusion, the results indicate that crossword puzzles were highly effective in teaching vocabulary to 10th-grade students at SMA Negeri 3 Mataram.

## CONCLUSION

From the research findings and discussion above, it can be stated that the alternative hypothesis ( $H_a$ ) state that "the uses of crossword puzzles have significant effect on students' vocabulary mastery" is accepted. The result of the paired sample test shows the significance values from the data was on 0.00 where that value was lower than the alpha value 0.05. The significance value obtained from data analysis was lower than the t-count on 95% confidence. Interval of difference at lower value was -22.5122 and upper value -20.0793. It can be seen from the difference on the pre- test score and the post- test score. It shows that the mean score before the treatment was 61.2958 and after the treatment was given it increase became 82.5915. The result from data analysis shows that the use of crossword puzzle in teaching new vocabulary to the students was effective.

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