



## The Effect of Using English Crossword Puzzle Application on Students' Vocabulary Mastery in SMAS Adabiah Padang

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### Abstract

*This study aimed to figure out if there is a significant improvement of using English crossword puzzle application on students' vocabulary mastery in SMAS Adabiah Padang. This study used pre- experimental with one- group Pretest- Posttest design. The researcher chose 34 students from XI MIPA 3. To compile the data, researchers used test (pretest and posttest) as instrument. The results of the study indicated that the utilized of English crossword puzzle application improved students' vocabulary mastery. The students' score before getting treatment was 48.94 then, after getting treatment students' score increased to 69.62. They also enjoyed the learning atmosphere while English Crossword Puzzle Application was being implemented. Therefore, English Crossword Puzzle is good learning media to help English students enhance their vocabulary development.*

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## INTRODUCTION

English becomes primarily carried out to improve students' language skills in Indonesia. In order to understand English properly, students need to master vocabulary. Once students master vocabulary, they can communicate and understand English properly (Andriani & Sriwahyuningsih, 2019). Isnaini and Aminatun (2021) note that students with the limited vocabulary might be fail in English learning because they cannot interact and articulate the concept. Therefore, clear understanding in English can be achieved by good vocabulary mastery.

Vocabulary mastery is the ability of students in understanding a word. Syarifudin (2014) also stated that vocabulary mastery means the ability in gaining the vocabulary. It includes the ability in using word depends on the situation and context. Lado (1957) as cited in Manda, Talib, and Aeni (2022) states that there are 5 aspects need to be mastered in studying vocabulary. First, it is important to understand the meaning because an English word has more than one meaning. Pavlu and Vojtková (2009) write that the meaning of vocabulary is divided into three

categories; synonyms, antonyms, and hyponyms. Second, pay attention to spelling and pronunciation of a word. If someone pronounces or spells a word incorrectly, it will be hard for other to get the meaning of it. Third, recognize the word classes to use the word properly. The word classes include adjective, verb, nouns, and adverb (Schmitt, 2000). Last, it is important to understand how word is used in the language.

In spite of the fact that vocabulary mastery is very crucial for language learning, it is not an easy thing to be done. Students appear to have problem in remembering vocabulary they just learned. Afzal (2019) found that 68, 9% students were struggle in memorizing new vocabulary. Students have difficult to use English words in the sentences; they also get hard to guess the meaning of the words correctly. Another problem is the teaching media is still limited. It is supported by Zamzami (2019), it was found that students have a low of motivation in learning English because of the passive and monotonous learning atmosphere.

When the researcher conducted the Field Experience Practice (PPL) at SMAS Adabiah Padang, the researcher found that students still have low vocabulary mastery. It was seen from the mistakes students made in answering question tested in exam. Besides that, it is also observed that the media used in school is still limited to teach the vocabularies. Students were only asked to read new vocabularies after that they were needed to memorize it independently at home.

To deal with those vocabulary problems, educators need to find interactive ways that are suitable to the current learning condition. One of which is through utilizing of Information Communication Technology (ICT)- based learning media tools. Kumbar et al., (2018) found that the usage of technology makes teaching and learning process easier and faster because it provides the information needed in just a click. It also enhances the quality of education. One of the ICT tools widely used now days is smartphone. By implementing ICT based learning, students and teachers can create joyful and interested learning environment. One of the ICT tools is media is English Crossword Puzzle Application. English crossword puzzle game is game-based application in which the solver guesses a word according to a clue and writes it into the appropriate box in a grid to form a vertical and horizontal pattern.

Previous research has been conducted to explore the use of crossword puzzle in English learning context. The first study is conducted by Fachrozi et al., (2021), the study is about the usage of crossword puzzles in increasing students' vocabulary development. This study was conducted in SMA Tamansiswa Binjai. The result of the study proved that crossword puzzle is able enrich students' vocabulary developent. The second study is conducted by Yudiati and Rizqi (2022) with the title "The Effect of Android-Based Learning Media Using Crossword Puzzles on English Vocabulary Mastery in SMKN 1 Sumenep". The students give positive response after implementing crossword puzzle application. The third study conducted by Zagoto and Laia (2022) with title "Crossword Puzzle Game for Teaching Vocabulary" showed that this game is able to improve students' vocabulary because it useful to teach and help students to understand and learn new words. Then, a research done by Insani et al., (2023) entitled "The Effectiveness of Using Crossword Puzzle on the Vocabulary Mastery on 10th Grade Students at SMA Negeri 3 Mataram". It showed that implementing crossword in teaching and learning vocabulary gives positive effect for students.

The researchers had interested to do research about utilizing of ICT Based Learning that named English Crossword Puzzle Application. It is expected that when students learning from this application, they will improve their vocabulary mastery and become more excited in learning English.

## METHOD

In order to figure out the significant improvement on students' vocabulary mastery, pre- experimental one-group pretest-posttest design was applied in this research. The researchers chose the eleventh grade students from MIPA class as the population of this research. Then, XI MIPA 3 was chosen to be the sample of this research by applying cluster random sampling. It consisted of 34 students.

In this current study, a test (pre-test and post-test) was applied as the instrument. In the first meeting, the pre-test was conducted to know students' vocabulary mastery and the English crossword puzzle application was introduced to the students. There were 5 meetings applied in this study to give treatment with using English Crossword Puzzle Application. After getting the treatment, the researchers conducted the posttest. It was done to see the whether there was significant improvement on students' vocabulary development or not. In processing data, the researchers applied quantitative data analysis calculated by using SPSS 23 Program Version. The researchers used the rubric that adapted from Coombe (2013).

## RESULT AND DISCUSSION

### *Research Finding*

Data was taken out of the outputs of students test score. The researcher calculated the mean, minimum, and maximum score of students' score test. Then, the researcher used a rubric that adapted from Coombe (2013). A scoring rubric helps educators to clarify students' word quality because it makes the evaluation process more effective and transparent. The scoring rubric used:

**Table 1. Scoring Rubric**

76- 100	EXCELLENT TO VERY GOOD	Sophisticated range; effective word/ idiom choice and usage; word form mastery; appropriate register
51- 75	GOOD TO AVERAGE	Adequate range; occasional errors of word/ idiom form, choice, usage but meaning not obscured
26- 50	FAIR TO POOR	Limited range; frequent errors or word/ idiom form, choice, usage, meaning confused or obscured
1- 25	VERY POOR	Essentially translation; little knowledge of English vocabulary, idioms, words forms OR not enough to evaluate

(Adapted from Coombe, 2013)

#### *1. The Result pre-test score*

Pre-test was done in the beginning session that aimed to know students' vocabulary mastery before getting treatments.

**Table 2. Pre-test' Score**

Score	Criteria	Total	Percentage
76- 100	EXCELLENT TO VERY GOOD	3	9%
51- 75	GOOD TO AVERAGE	8	24%
26- 50	FAIR TO POOR	22	65%
1- 25	VERY POOR	1	3%

As can be seen on the table above, most of the students are on “fair to poor” criteria, it is 65%. Then, 9% students are on the excellent to very good criteria, 24% students are on the good to average criteria, and 3% student is on the very poor criteria.

*2. The Result of post-test*

After applying English crossword puzzle for 5 meetings, there is a significant improvement on students’ vocabulary development. It is viewed on the table above:

**Table 3. Post-test' Score**

Score	Criteria	Total	Percentage
76- 100	EXCELLENT TO VERY GOOD	11	32%
51- 75	GOOD TO AVERAGE	19	56%
26- 50	FAIR TO POOR	4	12%
1- 25	VERY POOR	0	0%

Most of the students are in the good to average criteria in the post- test, it is 56%. Then, 32% students are in excellent to very good criteria, 12% students are in the fair to poor criteria, and there is no student in the very poor criteria.

After the score of pre- test and post- test process were completed, the researcher processed the data with SPSS 23 Program version. The data were processed to get minimum, maximum, and mean score. The table above showed the outcome of data processing:

**Table 4. Descriptive Statistics**

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
PreTest	34	25	85	48.94	16.175
PostTest	34	40	93	69.62	13.691
Valid N (listwise)	34				

According to the table of descriptive statistics presented above, there is a significant enrichment in the pre- test and post- test scores. The lowest score of the pre-test is 25 and the highest score of the pre- test is 85. The mean score of the pre- test is 48, 94. In the post test results, the lowest score is 40 and the highest test score is 93. The mean score of the post- test score gets 69.62. This situation indicates that the students’ mean score increase about 20% after the researcher implemented English Crossword Puzzle Application.

### 3. The Result of Hypothesis Testing

Hypothesis testing is purpose to answer the formulation of this study whether there is a significant improvement of utilizing English crossword puzzle on students' vocabulary development in SMAS Adabiah Padang or not. The researcher analysed the value of T-test with IBM SPSS Statistics 23. If the result  $< 0.05$  then the hypothesis is accepted, but if the result  $> 0.05$  then the hypothesis is rejected.

**Table 5. Hypothesis Testing**

		Paired Samples Test					t	df	Sig. (2-tailed)
		Paired Differences			95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	PreTestCrossword - PostTestCrossword	-20.676	13.377	2.294	-25.344	-16.009	-9.013	33	.000

Based on the output table T test, obtained the sig. (2-tailed) = 0.000, it means the value is  $< 0.05$ . It can be stated that alternative hypothesis is accepted and null hypothesis is rejected.

### Discussion

As can be seen on the results of the study, the output of the hypothesis test indicated that H1 was accepted and H0 was rejected. The result of this study is line with a study conducted by Yudiati and Rizqi (2022). They found that students' vocabulary increased after implementing crossword puzzle. The outputs of students score are 92.55% in the first meeting and 94.31% in the second meeting. It also was found that alternative hypothesis is accepted.

In addition, the result of pre- test and post- test indicated that students' test result improved about 20%. The mean score of pre-test was 48.94 then after getting treatment it became 69.62. The result of this study is in agreement with a study conducted by Insani et l., (2023). It was showed that the usage of crossword puzzle gives positive effect for students' learning process. They found that students score increased significantly from 61.29 to 82.5915.

In the field, the researcher also found that while the treatment was applying, the students were interested about using English crossword puzzle application. They competed to solve the puzzles with the other friends and class environment changed become livelier. This situation is same as the result of this study by Zagoto and Laia (2022). It was found crossword puzzle is able to improve students' vocabulary because it helps students to understand and learn new words in interesting way. This situation is also supported by Al- Ansi et al., (2021). They found that by utilizing ICT in learning, it will improve learning or teaching for educators. ICT Based learning can make interesting and joyful learning environment.

To sum up, applying ICT- Based learning tools namely English crossword puzzle application gave positive impact to the students' learning activity. English crossword puzzle application is able to enrich students' vocabulary mastery significantly. In addition, this application can make students had interesting learning atmosphere.

## CONCLUSION

The use of English crossword puzzle application contributes significant improvement on students' vocabulary development. It is proved by the score of students' test that improved in 20%. Before getting treatment, the mean score test was 48.94, then after getting the treatment it became 69.62. This situation is line with the result of the hypothesis test that shows the sig. value  $< 0.05$ . It means  $H_0$  is rejected and  $H_1$  is accepted. To recap, English crossword Puzzle Application is able to enhance students' vocabulary mastery in SMAS Adabiah Padang significantly. In addition, this application can be used to teach vocabulary in interesting way.

Based on the conclusion, the researchers give several recommendations. The recommendations are for teachers, students, and other researchers. First, the teachers need to apply suitable teaching media like English crossword puzzle application. This application may create joyful learning environment and help students in learning vocabulary easily and also effectively. Second, the students demanded to study independently by using digital media one of which is English crossword puzzle application that is able to support students in developing their English ability. Last, other researchers can continue this research to explore the use of English Crossword Puzzle Application on teaching grammar or English skills to find out the other benefits of this application.

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