

## **The Impact of Educandy Word Search Game on Enhancing Students' Vocabulary Mastery: A Pre-Experimental Study in Eighth Grade at SMPN 5 Pontianak**

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### **Abstract**

This study has objective to ascertain the effect of the word search game Educandy on students' vocabulary mastery. This research utilized a pre-experimental design with three treatments as its methods. The research sample encompassed 31 students of VIII G at SMPN 5 Pontianak during the academic year of 2023/2024. The researcher used a test as an instrument and a measurement technique as a data collection method to complete this research. The results indicated that using the word search game Educandy enhanced students' vocabulary mastery of learning vocabulary. According to the Mean score of the pre-test and post-test, alongside the t-test analysis, the research outcomes showed an enhancement in students' advancement. The mean score obtained during the pre-test was 70.32, whereas the mean score during the post-test was 88.14. The calculated t-test value was 10,36, higher than the t-table value of 1.697 at a significance level of 0.05 and degree of freedom of 30. Moreover, the effect size was 1.761, which corresponds to a strong effect size with a range of effect size > 0.5. In brief, the results showed that using the word search game Educandy enhanced students' vocabulary mastery.

**Keywords:** *Educandy; Vocabulary Master; Word Search Game*

### **INTRODUCTION**

Four essential skills must be considered properly when learning English to master it. Listening, speaking, reading, and writing are the four most essential abilities. Besides that, there are also additional aspects that support those four skills, including vocabulary, grammar, spelling, and punctuation. To have the ability to communicate in English, students should know its vocabulary first as a way to understand as well as convey ideas, thoughts, and information. It is necessary and important for students to master English vocabulary because they cannot master English without mastering the vocabulary first.

According to Purnami(2022), vocabulary is a massively crucial aspect of attaining proficiency in a foreign language lies in its correlation with the four fundamental language competencies. Vocabulary is a key aspect of language as it has a big impact on making successful communication between people. Learning English is not as simple as it appears, students will find it difficult to voice their thoughts or understand if they do not have the sufficient vocabulary(Sari & Aminatun, 2021). It is inevitable to dispute that language skills require a lot of vocabulary to convey thoughts more accurately(Umasugi, Hanapi, Bugis, & Handayani, 2018). Before teaching other aspects of language, vocabulary must be taught first as the basic step in learning the target language. This means that the successful learning of a language depends on the student's vocabulary mastery.

The researcher identified a variety of difficulties faced by students in class VIII G at SMPN 5 Pontianak based on the results of observation. When the teacher showed a picture to the students and asked them the name of a certain vocabulary in English, most of them could not answer it even though they could find that word in their textbook. Some of them did not even know the spelling of the word shown, although it was a noun or verb that they frequently found at school, at home, or in their surroundings. Besides, when learning the vocabulary in the classroom, students were only asked to memorize and translate them. Moreover, the researcher also conducted brief interviews with the students to know their perspectives on learning English. Students had an assumption that learning English was confusing, boring, and difficult. That mindset made them unresponsive and passive whenever the teacher raised questions because they did not know how to answer them. Furthermore, the students preferred speaking Bahasa Indonesia or their mother language to English.

Based on the findings derived from the pre-observation, the researcher chose the word search game Educandy as the media and evaluated its effectiveness in teaching vocabulary to the students. The vocabulary being taught would be limited and focused on countable and uncountable nouns and verbs from the material of What Are You Doing in class, at home, and around the surroundings taken from their textbook. The use of games as a learning medium, especially vocabulary, has been widely applied by several teachers. A word search game is a type of word game in which a grid of letters contains multiple hidden words written in any direction. Instead of adopting a traditional paper version, the researcher created the word search game on Educandy. Besides making the word search game, Educandy supports the creation of numerous types of word games, including crosswords, noughts and crosses, spelling, anagrams, match-up words and pictures, multiple choice, and memory games. In Educandy, the creators also can add images or sounds to make the game an attractive way to learn English. In addition to its attractiveness, the tools provided by Educandy itself are easy to understand for both creators and players. An example of the word search game Educandy is shown in Figure 1.



Figure1. Example of the Word Search Game Educandy

Several Previous Studies are using the word search game that have been done by researchers. The research conducted by Usmayani(2020) entitled “The Use of Word Square Game to Improve Students’ Vocabulary Mastery at the Second Year of SMPN 4 Model Parepare”, used an experimental design, and the result indicated that word search game effectively improved students’ vocabulary mastery with a significant

enhancement amidst between pre-test and post-test scores, with the difference of 53.8 and 72.33. Another research conducted by Nurhalimah(2020) entitled “Improving Students’ Vocabulary Mastery Through Word Search Puzzle Media at the Seventh Grade of SMPN 2 Palopo” also showed that the use of the word search game enhanced the outcomes of students’ learning by using classroom action research with the difference between cycle I had a value of 90, while cycle II exhibited a value of 95.

Therefore, the novelty of this research comes from the differentiation and creativity introduced into the word search game used by the researcher compared to previous studies. The students would have three different levels of word search game: 1) the students did the original word search game, 2) the students had to arrange the jumbled word from the vocabulary list in the word search before they played the game, 3) the students were required to construct a concise and simple statement derived from the noun and verb from the list of word search vocabulary. By providing these varied levels, the researcher diversified the difficulty level of the word search game, which varies from the conventional strategy used in previous studies.

From the explanation of the background above, this research was undertaken to examine the effect of the word search game Educandy in enhancing students’ vocabulary mastery. Furthermore, this study aimed to answer the research questions proposed by the researcher as follows: 1)Is the word search game Educandy effective for teaching English vocabulary to enhance students’ vocabulary mastery? 2) If it is, how significant is the effect of the word search game Educandy in enhancing students’ vocabulary mastery?

## METHOD

In this research, a quantitative method was used as the methodology. The researcher utilized a pre-experimental design, employing a one group pre-test and pot-test. Pre-experimental research plans for the result of an autonomous variable that is predicted to distress variance to determine if the intervention will affect a small group of people before obtaining and devoting time to perform a true experiment(Gupta, 2022). The design of one group pre-test and post-test evident within Figure 2.

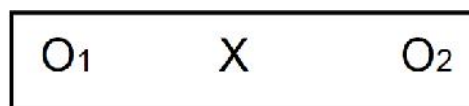


Figure2. One Group Pre-test and Post-  
(Creswell, 2009)

Where: 1)  $O_1$  (pre-test), the students did a pre-test before they receive the treatment using the word search game Educandy. There were 40 items for the pre-test in which the vocabulary was taken from the students’ textbook entitled When English Rings the Bell 2017. 2)  $X$  (treatment), the researcher taught the given vocabulary in the treatment. It was conducted three times with different key activities in each treatment. In the first treatment, students did the original word search game in Educandy. For the second treatment, the students had to arrange the jumbled word from the vocabulary list in the word search before they played the game. In the last treatment, the students should make a short and simple sentence drawing upon the noun and verb from the list of word search vocabulary. 3)  $O_2$  (post-test), after the completion of the treatment, the students

did the post-test. The post test used the same items as the pre-test with the consideration that the two tests have the same level of difficulty or discrimination.

(Bhandari, 2022) Defines population as a group from which the researcher collects data and draws conclusions for a research project. All 222 students of eighth-grade of SMPN 5 Pontianak were the population of this research. Cohen, Manion, and Morrison(2007) state that an accurate sample number for quantitative data can be approximated depending on the level of precision and probability that researchers require in their study. The researcher took one class as a sample through cluster sampling from the population. According to Thomas(2022), cluster sampling is a sampling technique that is used to investigate massive population that the researcher often employed pre-existing units like schools or cities. The use of cluster random sampling applied by the researcher was based on the principle of homogeneity, where the class division was not grouped into a class of smart or less intelligent students. As a result, class VIII G was chosen as the sample.

As the instrument of the study, the researcher applied measurement techniques with pre-test and post-test to acquire the data. The test consisted of a total 30 questions, presented in 15 questions of multiple choice, five questions of guessing the object's name, and 20 lists of words for the word search game. The researcher also examined the validity of the content of the item of the test. The content validity was determined using a checklist consisting of six yes-or-no statements to determine its validity. The validators were the eighth grade English teachers, and the results indicated that the validators agreed with the aspects of the validation criteria, where they answered all items with yes. The results proved that the pre-test and post-test items were valid.

This research used quantitative data analysis, with several statistical formulas to measure the data. The steps were scoring the students' tests, calculating the frequency and rate percentage of students' scores, calculating the mean score, calculating the standard deviation before and after the treatment, calculating the t-test, and calculating the effect size.

## RESULTS AND DISCUSSION

### Results

The results of students' pre-test and post-test classification to obtain the answer to the research questions. This research method was designed to determine whether or not the word search game Educandy enhanced students' vocabulary mastery. The researcher had completed all the steps to get the research findings. All of the step measurements in analyzing the data were presented as follows:

Table 1. The Classification of Percentage Pre-test

Classification	Score	Frequency	Percentage
Excellent	86-100	2	6.45%
Good	71-85	13	41.94%
Fair	56-70	14	45.16%
Poor	41-55	2	6.45%
Very Poor	≤40	-	-

According to Table, 1, there were 2 (6.45%) of the 31 students achieved the highest score, which was 90. Furthermore, 13 (41.94%) students managed to get good grade

classification. 14 (45.16%) students received fair grade classification, and there were 2 (6.45%) students who received poor grade classification with the lowest score of 52.5. The researcher then determined the post-test percentage after completing the pre-test calculation.

Table 2. The Classification of Percentage Post-test

Classification	Score	Frequency	Percentage
Excellent	86-100	21	67.75%
Good	71-85	8	25.80%
Fair	56-70	2	6.45%
Poor	41-55	-	-
Very Poor	$\leq 40$	-	-

Table 2 shows the percentage of students' post-test scores. There were 21 (67.75%) students who received excellent grade classification, indicating that more than half of the students in the class exceeded the Minimum Mastery Criteria (KKM) of 75. In addition, 8 (25.80%) students got good grade classification, and 2 (6.45%) students got fair grade classification. In contrast to the previous result, there were no students who scored  $\leq 55$  on the post-test.

After calculating the percentage of students' pre-test and post-test, the researcher then calculated the mean score of pre-test and post-test, standard deviation, t-test, and the effect size as follows:

Table 3. The Results of Mean Score, Standard Deviation, T-test, and Effect Size

Mean Score		Standard Deviation		T-test	Effect Size
Pre-test	Post-test	Pre-test	Post-test		
70.32	88.14	8.65	8.08	10.36	1.761

The researcher determined the t-table where  $\alpha 5\% = 0.05$ . After that, the researcher looked for the t-table in the distribution of t-table with the condition:  $df = n - 1$ ,  $df = 31 - 1 = 30$ , and the t-table value of 30 is 1.697.

If:  $t_{test} > t_{table}$ , it signifies that  $H_0$  is rejected and  $H_a$  is accepted. Meanwhile if:  $t_{test} < t_{table}$ , it signifies that  $H_0$  is accepted and  $H_a$  is rejected. It turned out that the results obtained by the researcher were 10.36 ( $t_{test}$ )  $>$  1.697 ( $t_{table}$ ), so  $H_a$ , which is there is a significant effect of using the word search game Educandy in enhancing students' vocabulary mastery, was accepted. To make it easier the researcher made a figure of curve of hypothesis testing with the results of t-test and t-table below.

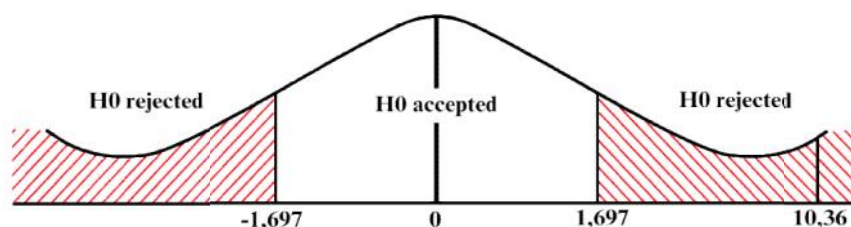


Figure 3. The Curve of Hypothesis Testing

Figure 3 above showed a significantly enhanced vocabulary mastery of class VIII G students of SMPN 5 Pontianak. The above curve result demonstrated the alternative hypothesis ( $H_a$ ) of this research was accepted, whereas the null hypothesis ( $H_0$ ) was rejected. Before and after using the word search game Educandy for vocabulary

learning, the researcher discovered that students' vocabulary mastery increased significantly by looking at the analysis of pre-test and post-test results. Moreover, the results also indicate that the effect size of the word search game Educandy on vocabulary enhancement was notable and substantial.

## Discussion

On January 20<sup>th</sup>, 2023, the researcher carried out a pre-test. The eighth-grade students were administered the pre-test to evaluate their vocabulary mastery before receiving the treatment from the researcher. The researcher then conducted the treatment three times after the pre-test was done. The first treatment was conducted on January 24, 2023, the second treatment was carried out on January 26, 2023, and the third treatment was carried out on January 27, 2023.

In connection, the results of this research and previous studies conducted by Usmayani(2020) and Nurhalimah(2020) have proven that the word search game is an effective tool for teaching vocabulary. In research conducted by Usmayani(2020), it was proven by the post-test average result, which was greater than the pre-test average, with a ratio of  $72.33 > 53.8$ . Then the result of the t-test calculation was 8.73, which was higher than the t-table value of 1.714. Furthermore, in research conducted by Nurhalimah(2020), it was proven by the learning outcomes obtained from cycle I was 90 and cycle II was 95, which showed an increase in cycle II.

Apart from being proven by statistical data calculation, the success of the word search game Educandy can be seen in the student's learning process. Students' vocabulary mastery, especially nouns and verbs for the material What Are You Doing in class, at home, and around the surroundings, enhanced as evidenced by students memorizing each word and its spelling as well as understanding how to construct simple sentences with the nouns and verbs they have learned. The application of gamification to the teaching and learning process has proven to be effective. Wu and Huang(2017) explain that incorporating gamification into the learning process can motivate and encourage students' interest in learning English. This statement is in line with what the researcher experienced while providing treatment by looking at the students' enthusiasm during the first, second, and third treatments.

In the first treatment, students still tend to be passive. Nevertheless, in the second and third treatments, students appeared to be highly eager and serious about playing the game since the researcher made it out to be a competition. The students enjoyed themselves enthusiastically while playing the game; they even asked to play more word search games with different topics in Educandy. They said that learning with the word search game Educandy was considerably interesting in contrast to the reception of oral instruction from the teacher, taking lots of notes on the whiteboard, or doing paper-based assignments repeatedly. By applying gamification in the learning process, the students gain achievement for their level of confidence and learning performance. As Rahmani(2020) said in her article, the use and implementation of gamification is a promising way for predominantly passive learning environments.

## CONCLUSION

Based on the research findings, discussion, and results that have been conducted by the researcher, the conclusion can be drawn that before using the word search game Educandy, most of the students' scores were classified as "fair". Then after using the word search game Educandy, most students showed significant improvement in their scores, as most of the students' scores were classified as "excellent" and exceeded the Minimum Mastery Criteria (KKM) score. The researcher discovered that the word search game Educandy effectively enhanced students' vocabulary with the strong effect size. Besides that, the word search game also helped them memorize the nouns and verbs they had learned, as well as the spelling. The students also enhanced their ability to construct a simple sentence in the present continuous tense. It is possible to conclude that the word search game effectively enhanced vocabulary mastery, remembered, and maintained the learned vocabulary of the eighth-grade students of SMPN 5 Pontianak.

The researcher would also like to provide some constructive suggestions. Even though the word search game has been proven effective and fun in learning vocabulary, teachers must still be creative when designing the teaching process in incorporating activities to create a pleasant learning environment for students. The application of learning activities must also be diversified to avoid boredom due to repetitive activities. Then, students must study more actively to increase their vocabulary. It is recommended for them to constantly read more and memorize at least 10 to 20 words for each meeting so that they have a lot of vocabulary knowledge. Do it repeatedly so that what have been learned is not easily erased from their memory. Last, the researcher suggested that through the results of this research, other researchers can develop further studies with a combination of quantitative measures and qualitative methods like interviews or observation, with participants from various age groups, language proficiency levels, and educational backgrounds to assess the applicability and effectiveness of word games across different contexts.

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