

## The Effectiveness of Learn English Vocabulary Application in Enriching Students' Vocabulary Learning

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### ABSTRACT

This research was conducted using pre-experimental research to determine the effectiveness of Learn English Vocabulary application in enriching students' vocabulary learning among the 7th-grade students of SMP Negeri 20 Pontianak. The total population was 186 students, and the sample was 15 students from class F. The data were gathered using a test in a form of multiple choices with a total of 25 questions. The test was distributed in a form of a pre-test and a post-test. The data were analysed using Microsoft Excel and SPSS v.26 with a 5% significance level. It showed that there was an enrichment of students' vocabulary learning. It was indicated by the values of Sig. (2-tailed) score from the t-test calculation which was 0.000. It means the value was lower than 0.05. The hypothesis testing result also strongly provides evidence by the acceptance of the hypothesis alternative with a t score of 8.5 higher than the ttable score of 2.145. Moreover, the effect size calculation showed that the significant effect of the application is in a score of 2.1 which is interpreted as a strong effect. Therefore, the use of Learn English Vocabulary application is significantly effective in enriching students' vocabulary learning.

**Keyword:** *Enrich, Learn English Vocabulary Application, Vocabulary Learning*

### INTRODUCTION

The use of technology in the educational field is beneficial. It provides both teachers and students with an easy way to find information and fun learning practices. The students are able to explore the knowledge based on their interests. This helps them gain 21<sup>st</sup>-century technical skills which are essential for their future careers. Thus, the process of language teaching and learning must be elaborated with the use of technological advances especially vocabulary learning by using digital learning media such as applications. Digital learning media is a form of delivery through the internet that provides content and teaching methods to enhance teaching and learning effectiveness to promote personal knowledge or skill (Holzberger et al., 2013). It gives the students a fresh learning atmosphere that encourages them to engage in the learning proses actively. The researcher was trying to find out the use of digital learning media in a form of application to support students' vocabulary learning specifically English Vocabulary application.

Understanding a language should start with vocabulary. Vocabulary is essential in language learning, through vocabulary, the speaker can understand what other people are saying as well as express themselves with communicative interaction (Alqahtani, 2015). Furthermore, vocabulary learning will lead the speaker to understand other skills such as reading, listening, speaking, and writing. Thus, having a larger vocabulary in the target language can help improve language learning and fluency. The importance of vocabulary cannot be neglected in learning a foreign language such as English.

Based on the observation in SMP N 20 Pontianak, it was found that the students lack the vocabulary of nouns. It was mentioned by the 7<sup>th</sup> grade English teacher that the students did not have basic English skills in elementary school and had low exposure to English. The students also mentioned the learning media used in the classroom is monotonous which is only using the LKS book. The information provided by the LKS book is limited. As a result, the students have a slow enhancement in their vocabulary learning. Therefore, the researcher concluded that the students' problem is a lack of vocabulary of the nouns due to the monotonous learning media used in the classroom and low exposure to English. The focus of the study was to find out the effectiveness of additional learning media in a form of an application to help the students enrich their vocabulary learning, especially nouns. It was taken based on the 2013 curriculum applied by the school which requires the 7th-grade students to understand the vocabulary of the noun. In addition, nouns are a good start for the students to build up their vocabulary by naming places and things around them.

The researcher proposed an application that can help the students enrich students' vocabulary learning named Learn English Vocabulary. The researcher believed that this application is suitable for 7th-grade students to learn vocabulary effectively. Learn English Vocabulary is an android application that specialized in English vocabulary. The application provided some features that help the user learn English vocabulary with several forms of quizzes. The researcher used learn and test features in conducting the research. There are many words provided especially nouns. Those are separated into different types of themes. For the nouns, there are 14 main themes that have more specific word categories in them. The application can be accessed freely by the user without an internet connection. The researcher focused on teaching nouns to synchronize with the applicable curriculum used by the school. Therefore, appropriate materials provided by the application and the ease of getting applications were also one of the main reasons for choosing this application as the learning media for this research.

The application is easy to access by the teacher and the students. It can run on their smartphone. The application can be downloaded freely and only uses a small amount of storage in the smartphone. Moreover, as a learning media, this application created a new way of learning English vocabulary. The learning media create a meaningful way that makes it enjoyable (Fatah, 2019). This application was expected to give the students higher exposure to English as the new learning media which can support their language learning. Furthermore, it is very important that outcomes from this study can be used in a real-world

situation to enrich students' vocabulary learning. Some studies have shown the positive impact of digital learning media on students' vocabulary learning.

This study is in line with previous research conducted by Ritonga (2020) that the use of English Vocabulary application gives a significant effect on the student's vocabulary mastery in the category of moderate effect. Another study conducted by Devitasari (2019) using Visual Vocabulary App in Teaching Vocabulary and (Fajriani, 2020) using the "Hello English" Application also showed an improvement after the treatments. The result showed a significant and effective difference in the mean score from pre-test and post-test. Therefore, those studies stated that the use of digital learning media in a form of a vocabulary app is effective in enriching students' vocabulary.

Some studies about enriching students' vocabulary learning through learning media in a form of an application have been done by some researchers. All of the results showed that application as the learning media could effectively enrich students' vocabulary. Nevertheless, none of those studies try to enrich students' vocabulary by using Learn English Vocabulary application to teach nouns which created the gap between this research and the previous researchers. The Learn English Vocabulary has overcome the problem and helped both students and teachers in the teaching and learning process. Therefore, the researcher used Learn English Vocabulary application in teaching vocabulary, especially nouns using Pre-Experimental Research to the students in grade 7<sup>th</sup> of SMPN 20 Pontianak.

## METHOD

### Research Design

Pre-experimental research was applied in this study. The purpose of Pre-experimental research is to test the practice or treatment in order to determine the effect on a result (Creswell, 2012). One group of pre-test post-test design was applied in conducting the research. It was a group that played as the subject tested using a pre-test before the treatment, followed by treatments and a post-test after the treatment (Creswell, 2012). The design of a pre-test-post-test group typically involves three stages: the pre-test of the dependent variable, the application of the treatment, and the post-test of the dependent variable (Creswell, 2012). Below is the concept of one group pre-test and post-test design:

**Table 1: One group pre-test post-test design**

Pre-test	Treatment	Post-test
Y <sub>1</sub>	O	Y <sub>2</sub>

A pre-test is an assessment designed that assesses the participant before they receive the treatment (Creswell, 2012). The researcher pre-tested the sample using the prepared questions in a form of multiple choices with a total of 25 questions. The questions specifically asked about job and occupation theme nouns adopted from the book used by

the English teacher in SMP N 20 Pontianak Utara. Then the researcher applied the treatment to the sample chosen. It is a process of manipulating the independent variable by the researcher (Thomas, 2022). The researcher gave treatment by implementing the Learn English Vocabulary application in the classroom activity. The treatment was conducted in two meetings. Steps in conducting the treatment were:

- a. The researcher asked the students to form a group consisting of 3 to students.
- b. Then the researcher asked them to install the English Vocabulary application on one smartphone.
- c. The researcher gave information and demonstration about the application and how to use the application.
- d. The students learned the vocabulary together with one smartphone.
- e. The students opened the work theme and learn the vocabulary of the nouns on the learn page.
- f. Then, they did the quizzes which were tests and listening.
- g. Then, the researcher asked the students to do exercises by writing down information about the nouns that have been learned.

The treatments were conducted twice and it was proven that the use of Learn English Vocabulary application was significantly effective in enriching students' vocabulary learning. The two treatments are accepted to manipulate the variable using activity and assessment followed by theoretical rationale to support the research result (Halbherr & Kapur, 2020). In order to know the result, the researcher post-tested the sample. Post-test is a measurement designed to assess the participant after they receive the treatment (Creswell, 2012). The post-test was given in order to obtain the final result so it could be compared to the pre-test result. The post-test questions were the same as the pre-test questions.

### **Research Population and Sample**

The population of this study was students in grade 7<sup>th</sup> from SMP N 20 Pontianak. There are six classes in grade 7<sup>th</sup> with a total population of the study were 186 students. Cluster sampling was applied in determining the sample. It was referred to (Thomas, 2022) that cluster random sampling divides the population into smaller groups. The 7<sup>th</sup>-grade students are divided into six groups of classes from A to F. The researcher chose the sample by randomly voting the class on a piece of paper. A paper with an F class fell which means the researcher used that class as the sample of the research. There are a total of 31 students in class F. Since the Covid-19 pandemic situation, the school applied sessions for each class where they divided one class into two. So only half of the students out of a total of 31 and 15 students in the research sample.

### **Data Collection**

The data collected was about the students' vocabulary improvement. The improvement in the student's vocabulary was evaluated using pre-test and post-test tests. The researcher used measurement as the technique and tool for data collection. The

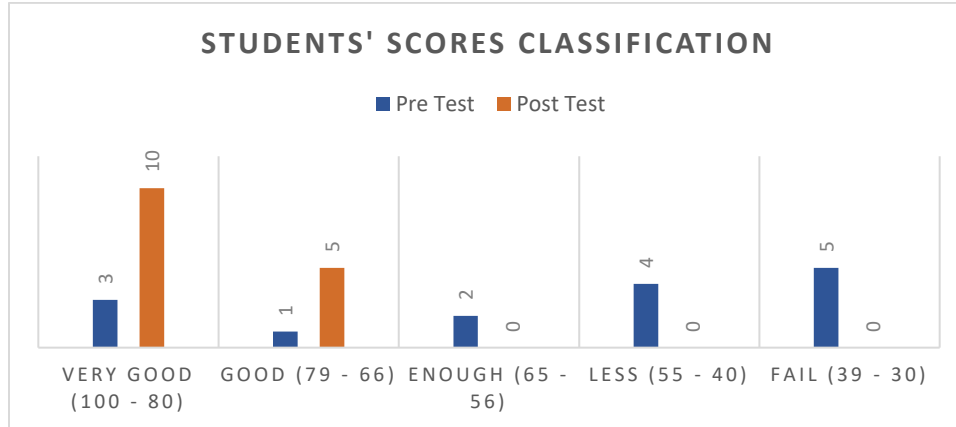
measurement was used to collect the data on students' score improvement using tests before and after the treatment. The researcher used the measurement in a quantitative method. It is used to assess a person's knowledge of what they know or have learned (Knowly, 2020). In this study, the test is intended to measure students' vocabulary enrichment. The test used was a written form of multiple choices consisting of four choices of a, b, c, and d. The test was given before and after the treatment. There were 25 questions for a pre and post-test. The tests were specifically asked about the vocabulary that has been taught in each treatment.

### **Data Analysis**

The researcher analyzed the tests result by counting each student's score from the pre-test and post-test. The scores were categorized into five categories proposed by (Afni, 2014) Then, the mean score of pre and post-test was calculated in order to know the significant difference in students' vocabulary improvement. Paired t-test was applied to determine whether the research result was significantly different. It was intended to compare two variables on the same subject (Kim & Park, 2018). Moreover, it described whether the hypothesis is accepted or not (Afni, 2014). The paired t-test calculation was done using SPSS v.26. After calculating the t-test score, the researcher calculated the size effect in order to determine the effect size interpretation of the Learn English Vocabulary application in enriching student vocabulary learning using a formula and interpretation by (Cohen, 1988).

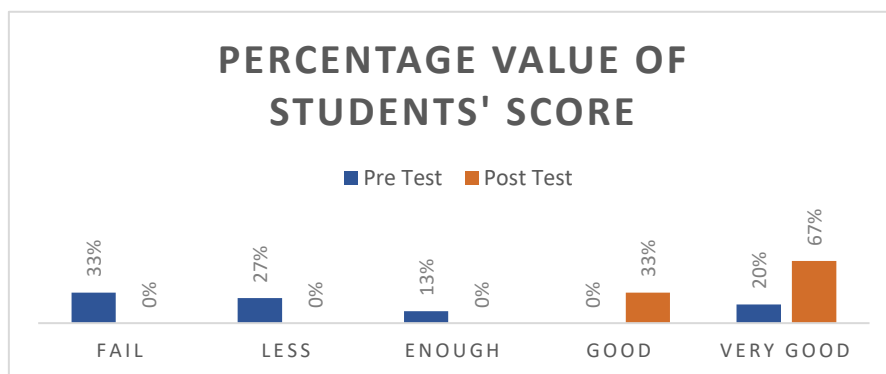
### **FINDING AND DISCUSSION**

Based on the data analysis, it was found that there is a significant difference of students' scores from pre-test and post-test. In comparison to the pre-test and the post-test result, students in the category of very good and good significantly increased. In the very good category, from 3 students in the pre-test to 10 students in the post-test. In the good category, from 1 student in the pre-test to 5 students in the post-test. In contrast, the enough, less, and fail category decreased to 0 from the pre-test to post-test results. It can be seen from the figure that there are no students who categorize in those three lower categories in the post-test.



**Figure 1: Students' score classification**

The researcher used percentage values to determine the students' score improvement from the pre-test to the post-test. The difference frequency of the percentage is significantly different. The pre-test percentage was in the bottom three of the classification which is in the fail category for 33%, in the less category for 27%, and in the enough category for 13%. There was no percentage in the good category and only 20% in the good category from the pre-test. The highest percentage of pre-test was in the fail category which is 33%. This showed that the students have a very low vocabulary understanding, especially in job and occupation themes. However, after being taught using the English Vocabulary application, the student's scores increased. The percentage showed the students' scores highly increase in the top two of the category which is 33% in the good category and 67% in the very good category. There are 0% in the category of fail, less, and enough. To sum up, the percentage in the very good category increased by 47% which is from 20% to 67%. This result indicates the students' improvement from the pre-test to post-test questions with a significant difference in the percentage values.



**Figure 2: Percentage value of students' scores**

a. Mean score comparison

The mean score of the post-test is higher than the pre-test with score of 81,06 > 52,26. The interval mean score is 28,80. Mean score proven to be an effective tool to comparing different sets of data (Dudovskiy, 2022). The standard error mean from pre-test to post-test also decrease from 5.05161 to 2.15466. This means that the lower the mean for the standard error, the more representative the sample and the mean (Kenton, 2022). The standard error also represents the sample's accuracy as a representative population estimate (McHugh, 2008). Statistically, this proves that there is a difference in the students' average learning outcomes between pre-test and post-test scores.

**Table 2: Mean score calculation result**

**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre	52.2667	15	19.56479	5.05161
	Post	81.0667	15	8.34494	2.15466

b. Normality Test

A normality test was conducted before calculating the t-test in order to know whether the data were normally distributed or not. The test calculation was done using the SPSS v.26 in Kolmogorov Smirnov. The data will be categorized as normally distributed if the significance is higher than  $\alpha$  or  $\alpha > 0,05$ . Based on the normality test calculation, the result found that the score of significance is 0.200. The Sig. (2-tailed) score is higher than 0.05 which means the data were normally distributed

**Table 3: Normality test result**

**One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		15
Normal Parameters <sup>a,b</sup>	Mean	.0000000
	Std. Deviation	4.27067044
Most Extreme Differences	Absolute	.135
	Positive	.100
	Negative	-.135
Test Statistic		.135
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>

c. Paired t-test using SPSS

The researcher continued to measure the research result for significant differences using paired t-test. The calculation was done using the SPSS v.26. The purpose of this measure is to determine the significant difference between pre- and post-test results following treatment implementation. The significant difference level for the t-test used is 5% (0,05). The value of Sig. (2-tailed) is 0,000 which is lower than 0,05 (0,00<0,05). Smaller p-value indicate a stronger evidence to reject the null hypothesis and prove the result is statistically significant (McLeod, 2019). As a result, there is a significant difference in students' scores before and after being taught using the Learn English Vocabulary application.

**Table 4: Paired t-test calculation result  
Paired Samples Test**

	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	Df	Sig. (2-tailed)
				Lower	Upper			
Pair 1: Pre - Post	28.8000	13.11052	3.38512	36.06036	21.53964	8.508	14	.000

d. Hypothesis Testing

To determine the search result, the researcher used a statistical hypothesis test with the criteria as follow:

- a)  $H_a$  is accepted if  $t > t_{table}$  with the Sig. (2-tailed)  $5\% < (0.05)$
- b)  $H_0$  is accepted if  $t < t_{table}$  with the Sig. (2-tailed)  $5\% > (0.05)$

According to the paired t-test calculation, it was found that the t score is 8.5. The  $t_{table}$  of 14 with  $\alpha=0.05$  is 2.145. It means that  $t > t_{table}$  which is  $8.5 > 2.145$  with the Sig. (2-tailed)  $5\% < (0.05)$ . As a result,  $H_a$  is accepted and  $H_0$  is rejected. This means there is a significant effect of Learn English Vocabulary application in enriching students' vocabulary learning. To sum up, the application of Learn English Vocabulary is significantly effective for enriching students' vocabulary learning. Then, the researcher counted the effect size to know the level of its significance.

#### e. Effect Size

The researcher used the effect size formula proposed by Cohen (1988). The calculation used the following formula:

$$Effect\ size = \frac{d}{S_d} = \frac{28,8}{13,11} = 2,1$$

D : Interval mean score

S<sub>d</sub> : Standard deviation

The score of effect size is 2.1 which is interpreted as a strong effect. Therefore, the use of Learn English Vocabulary application significantly has a strong effect in enriching students' vocabulary learning.

The result findings have shown the significant result of students' enrichment in vocabulary learning, especially in the 7<sup>th</sup>-grade students of SMP N 20 Pontianak. It was proven by the students' scores in the post-test. The percentage value in the very good category has increased to 47% with the interval mean score between the pre-test and the post-test of 28,8. The score of Sig. (2-tailed) also lower than the  $\alpha = 0,05$  which means the Learn English Vocabulary application gives a significant effect on students' vocabulary learning. The alternative hypothesis is also accepted with the t score of 8.5 higher than  $t_{table}$  of 2.145 which means the use of Learn English Vocabulary application has a significant effect in enriching students' vocabulary learning. The significant effect is in the size of 2,1 which interpret as a strong effect. Therefore, the researcher concluded that the use of Learn English Vocabulary application has been significantly effective in enriching students' vocabulary learning.

The students were having enrichment of vocabulary learning after being taught using Learn English Vocabulary application. The app helped students gain a deeper understanding of words by learning each word through images, examples, and pronunciation. As (Tennant, 2021) and (Mthethwa, 2018) mentioned that the use of pictures, text, and sound is effective and common in teaching and learning vocabulary. Moreover, the quizzes provided in the application helped them to practice, repeat, and remember the words. It means that the application provides the students with repeat learning that gives them the opportunity to recall and frequently used the words for greater understanding (Webb, 2007). Learn English Vocabulary application as the learning media also effectively improve students' vocabulary enrichment through multiple modes of interaction such as touch, voice, and picture as stated by (Deng & Trainin, 2015). As a result, they have a better performance in doing the task and answering questions.

The use of the Learn English Vocabulary application has successfully enriched the vocabulary learning of 7<sup>th</sup>-grade students of SMP N 20 Pontianak. The implementation of the application as the learning media to teach and learn vocabulary significantly enriched students' vocabulary learning and help the students to have a high interaction with English. The use of Learn English Vocabulary application also creates a new way of learning rather

than only using a textbook which is monotonous. Hopefully, the Learn English Vocabulary application can be a good consideration for the teacher to choose a learning media since it is effective for teaching and learning vocabulary that enriches students' vocabulary learning especially vocabulary of nouns. However, this study still has limitations especially in the focus of the vocabulary, remembering the application is only focused on the vocabulary of the nouns.

## CONCLUSION

From the discussion in previous chapter, Learn English Vocabulary application has a significant effect in enriching students' vocabulary learning. The effect size calculation showed a strong effect of the application to the students' vocabulary enrichment. The value of Sig. (2-tailed) score also indicated the effectiveness of Learn English Vocabulary application in enriching students' vocabulary learning with the acceptance of alternative hypothesis. The Learn English Vocabulary application helped the students to learn vocabulary better.

Students had slow vocabulary development due to the monotonous learning media used in class and the low level of interaction with English. This affected the students' performance which indicated by the incapability of the students to reach the KKM score of 75. Based on the findings and discussion, the students were having vocabulary enrichment. The enrichment occurred in the pre-test and post-test result. Moreover, the effectiveness of Learn English Vocabulary application also showed a strong effect based on the effect size calculation. Therefore, this pre-experimental research was successful in finding the solution for the problem that occurred in the 7<sup>th</sup> grade of SMP Negeri 20 Pontianak. The Learn English Vocabulary application is significantly effective in enriching students' vocabulary learning.

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