

The Development of Find The Object Game Application as The Media of English Vocabulary Learning for Second and Third Grades of Elementary School

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Abstract

English is the language of international communication, which is why most countries in the world learn it. Therefore, we need to understand and be capable of communicating in English. Today's English learning is mostly delivered by a lecture method. Moreover, there is no English vocabulary learning media in the form of application. Therefore, this research aims to develop a game application called "Find the Object" to help elementary school students learn English vocabulary by making the learning process more fun and interesting. The pre-test, post-test, and poll results revealed that this game significantly succeeded in increasing the English vocabulary of elementary school students. It was proven through the values of tests tending to increase after playing this game, and students felt more interested in learning English vocabulary.

Keywords: Find the Object, Educational Game, Vocabulary, Hidden Object, Construct Game, Pre-test, Post-test

1. Introduction

Language is essential for human life. Through language, people can communicate with each other, exchange information, express opinions, and so on. Most multilingual societies use English as the official language in the law, administration, commerce, and education. It is reinforced by Ethnologue's data that in 2017 there were 371 million English speakers worldwide who used it as the primary language and 611 million as the second language [1]. In Indonesia, English has been taught to children from an early age. English has become one of Indonesia's education curriculum subjects, starting from Elementary School (SD) to Senior High School (SMA).

Elementary school students are taught the basics of English, vocabulary. It aims to make them know the vocabulary around them, such as the names of animals, vehicles, fruit, and so on because in general, children are more interested in learning things around them. Second to third graders are highly suitable periods to be introduced to words they know because, at those ages, their memory is still strong, thus helping them reach the next stage. In terms of vocabulary mastery, students will be easier in learning a more challenging level, composing a sentence [2].

One of the media that can be used in language learning is a game to find hidden objects. According to Ari Julianto hidden object game media is an effective medium to build students' vocabulary skills. Through this game media, which is a type of puzzle game, students can distinguish the objects around them and train their memory about objects' English names [3].

2. Method

This study utilized a multimedia development model developed by Luther. This model consists of six stages: concept, design, material collecting, assembly, testing, and distribution. This "Find the Object" educational game application employs the concept of hidden objects.

A hidden object is an English term which in Indonesian can be interpreted as “*obyek tersembunyi*”. The “Find The Object” is an English vocabulary learning application using the concept of a hidden picture puzzle or hidden object. This application has ten vocabulary categories comprising kitchen, bedroom, classroom, living room, dining room, bathroom, street, park, beach, and jungle [4].

To measure the level of students’ knowledge of English vocabulary, the writers applied the pre-test and post-test for 40 elementary school students, of which 20 were second graders, and the other 20 were third graders. The test results were processed using the Paired-Samples T-Test method with the SPSS software. It is a concept of comparing two samples to determine the differences [5].

In the pre-test, the writers distributed question sheets to prospective users to determine their English vocabulary knowledge before trying the application. After all questions were answered in approximately 10 minutes, the authors calculated the values obtained by the prospective users in the pre-test session. These values were later compared with the values in the post-test session.

3. Results

The following figure presents the data from testing the second and third graders of elementary school using the pre-test and post-test.

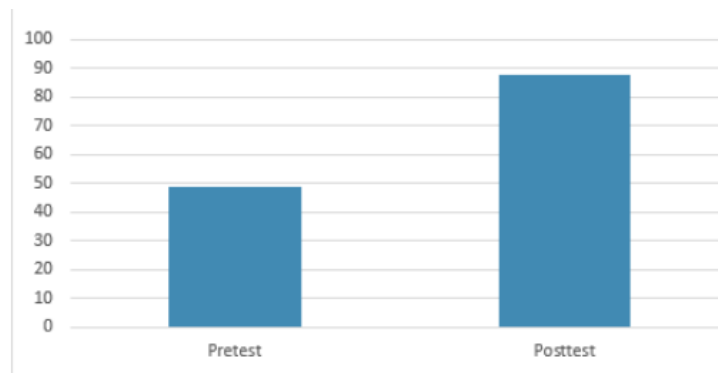


Figure 1. Graph of the mean score of pre-test and post-test of second-grade elementary school students

Figure 1 shows that the post-test mean score is greater than the pre-test. It proves that the second graders’ knowledge of English vocabulary increases after using the “Find the Object” application.

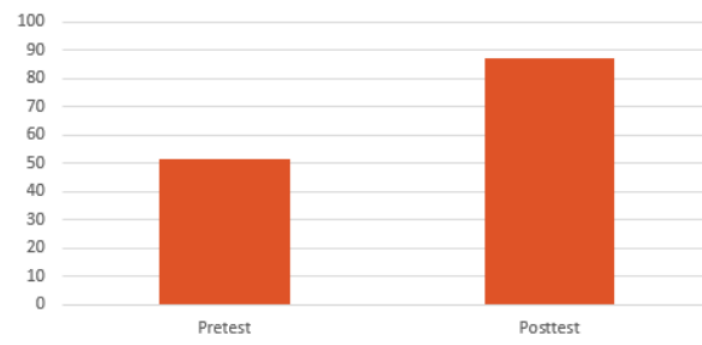


Figure 2: Graph of the mean score of pre-test and post-test of third-grade elementary school students

Similarly, Figure 2 also demonstrates that the post-test mean score is greater than the pre-test. It indicates that the “Find the Object” application can enhance the English vocabulary of third-grade elementary school students.

In addition to using tables and graphs, the author also performs data processing with the Paired-Samples T-Test method using the SPSS tool. PairedSamples T-Test is used as a comparative test against two variables/sample pairs [6]. The paired samples were the same subject but underwent different treatments. After the author processes the pre-test and post-test value data through the Paired Sample T-Test method using SPSS, the output display is obtained as shown in Figure 3 and Figure 4. In figure 4, the Test test results are paired from 20 grade II elementary school children, while figure 5 shows the T-test results paired with the output of 20 grade III elementary school children [7].

➔ **T-Test**

[DataSet0]

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTest	48.6250	20	7.18528	1.60668
	PostTest	87.7500	20	7.64767	1.71007

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	PreTest & PostTest	20	.587	.006

Paired Samples Test									
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	PreTest - PostTest	-39.12500	6.75097	1.50956	-42.28455	-35.96545	-25.918	19	.000

Figure 3: Paired T-Test output results from grade II elementary school children

Interpretation of output results:

1. The first part (Paired Samples Statistics) Standard deviation shows the variation of data on each variable. From the results of the output can be seen that the standard deviation of pre-test value of 7.18 and standard deviation of post-test value of 7.64 and N shows the amount of data, namely 20 data.
2. The second part (Paired Samples Correlations) The second part shows the correlation result between the two variables resulting in a .587 number with a significant value of .006 and N indicating the amount of data, which is 20 data.
3. The third part (Paired Samples Test) is interpreted as follows:
 - a. H0 hypothesis: The average pre-test and post-test values are the same or not significantly different H1: The average pre-test and post-test values are not the same or differ markedly.
 - b. Confidence level At a confidence level of 95%, the alpha value is 5% or 0.05. Then: $\alpha = 0.05$.
 - c. Critical areas To determine decisions, can be used a method of comparison between the value of significance with the value of alpha. The conditions are as follows: - If the value of sig > 0.05 then accept H0 - If the value of sig < 0.05 then accept H1
 - d. Decision Due to the significance value that appears in SPSS is 0.000 then: $0.000 < 0.05$ (reject H0, thank H1)
 - e. Based on the above decision, it can be concluded that with a confidence level of 95%, there is a real difference between the pretest and post-test values. Based on the results of the post-test, the game "Find The Object" was able to improve the understanding of grade II elementary students to the English vocabulary.

→ **T-Test**

[DataSet1]

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTest	51.6250	20	9.18648	2.05416
	PostTest	87.1250	20	8.16262	1.82522

Paired Samples Correlations				
		N	Correlation	Sig.
Pair 1	PreTest & PostTest	20	.509	.022

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PreTest- PostTest	-35.50000	8.64505	1.93309	-39.54601	-31.45399	-18.364	19	.000

Figure 3: Paired T-Test test output results from grade III elementary school children

Interpretation of output results:

1. The first part (Paired Samples Statistics) Standard deviation shows the variation of data on each variable [8]. From the results of the output can be seen that the standard deviation of pre-test values of 9.18 and standard deviation of post-test values of 8.16 and N shows a lot of data, namely 20 data.
2. The second part (Paired Samples Correlations) The second part shows the result of correlation between the two variables resulting in a number of .509 with a significant value of .022 and N shows the amount of data, which is 20 data.
3. The third part (Paired Samples Test) is interpreted as follows:
 - a. H0 hypothesis: The average pre-test and post-test values are the same or not significantly different H1: The average pre-test and post-test values are not the same or differ markedly
 - b. Confidence level At a confidence level of 95%, the alpha value is 5% or 0.05. Then: $\alpha = 0.05$
 - c. Critical areas To determine decisions, can be used a method of comparison between the value of significance with the value of alpha. The conditions are as follows: - If the value of $\text{sig} > 0.05$ then accept H0 - If the value of $\text{sig} < 0.05$ then accept H1 [9] .
 - d. Decision Due to the significance value that appears in SPSS is 0.000 then: $0.000 < 0.05$ (reject H0, accept H1) [10].
 - e. Conclusion Based on the above decision, it can be concluded that with a confidence level of 95%, there is a real difference between the pretest and post-test values. Based on the results of the post-test, the game "Find The Object" was able to improve the understanding of grade III elementary students to the English vocabulary.

4. Conclusions

The pre-test and post-test data processing using the Paired-Samples T-Test method resulted in the Sig. (2-tailed), indicating a probability of 0.00 (<0.05). It depicted a significant difference between the pre-test and post-test scores for second and third graders of elementary school. The pre-test score mean of the second-grade elementary school students was 48.625, while the post-test score mean was 87.75, showing an increase of 39.125 points. The pre-test score mean of the third-grade elementary school students was 51.625, and the post-test score mean was 87.125, demonstrating an increase of 35.5 points. In conclusion, the post-test results indicated that the "Find the Object" educational game application was suitable for second and third graders of elementary school and could improve their English vocabulary.

5. Suggestions

Based on the research results, this educational game can be further developed by adding:

1. an incorrect notification sound when the user presses the wrong object while playing
2. a hint button if the user finds it difficult to find objects
3. several new categories of environments, such as farms, airports, sports venues, and others
4. background noise that can be turned off or on by the user, and
5. the 'share score' feature to social media

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