



The Effect of Duolingo Online Application on Students' English Vocabulary Mastery of VII Grade Class at SMP Al Razi Sinar Harapan

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ABSTRACT

The aim of this study was to determine the use of the Duolingo application to increase students' English vocabulary. In developing this research, the researcher implemented Duolingo through the discussion method so that it was chosen in this study to solve the problem. the method used in this research was quantitative data. The subjects of this study were 28 students of class VII SMP Al Razi Sinar Harapan with the research sample being class VII-2 as the experimental class and class VII-4 as the control class. The research instrument uses multiple choice. The results of the data show that there is a development of students' English vocabulary. This can be seen from the pre-test average for the experimental class was 53.85 and for the control class was 53.5 and the post-test average for the experimental class was 76.71 and for the control class was 67.35. From these data it can be seen that students' English vocabulary increased by using the Duolingo application as a learning medium. The research results found in this study observed t-observed 3.29 and t-table 2.05, so it can be concluded that there are differences in students' vocabulary when using the Duolingo application and without the Duolingo application. In addition, students also look active and enthusiastic about using Duolingo as a learning medium.

Kata Kunci

Vocabulary, Duolingo Application, Quantitative Research

INTRODUCTION

Vocabulary is a fundamental aspect of language proficiency, vocabulary knowledge is often viewed as a critical tool for second language learners because a limited vocabulary in a second language will impede effective communication, vocabulary knowledge is an essential component of language learning. Underscoring the importance of vocabulary acquisition, Cameron (in Alqathani, 2015:22) emphasis that “vocabulary as one of the knowledge areas in language plays a great role for learners in acquiring a language”.

The problem of lack of vocabulary is often one of the difficulties in answering English questions, most students cannot answer questions in English and they ask the teacher to translate these questions into Indonesian, a factor causing difficulties in memorizing or learning vocabulary. This word is lack of practice. English vocabulary is the main foundation in 4 English skills

(listening, speaking, writing, and reading). Lack of vocabulary will make it difficult for someone to understand English because the reason someone learns a language is to understand the language being studied.

As a teacher, should provide interesting media in learning, by choosing the right learning techniques to increase student attention and motivation. There are several learning techniques that can be used to increase English vocabulary, one of the media that can be used to increase students' vocabulary in teaching and learning English is to use an application, one of which is an online application, Duolingo.

Implementing a teaching and learning system with the Online Duolingo application can provide a different experience because Duolingo has a very motivating learning system. It uses game mechanics strategies to create incentives to keep learners learning. It is made very similar to a computer game in which the participants must pass a certain level. A learner must pass the language unit level to open the next level after a learner has mastered the previous material. Users can complete different types of exercises including multiple choice, writing and also speaking into the microphone. In this Duolingo application, to reach the next unit, you have to use repeated exercises and exercises in the lesson, this can make students continue to remember English vocabulary. The Duolingo Language Learning application is also free and can be downloaded on a cellphone or PC, so users can practice anytime and anywhere, especially for young English learners.

Based on the observation obtained from at SMP Al Razi Sinar Harapan, it was found that there were some students who lack vocabulary. The researcher got several obstacles that the students faced, in which they were lack in comprehending the vocabulary because they did not know how to express some words. This is due to the difficulty of remembering vocabulary due to lack of practice, difficulty memorizing vocabulary because of the many lessons that must be mastered and memorized which makes students able to memorize but forget about it after that, By this conditions, the researcher assumed that the appropriate method, strategy or media should be choose, because it is not an easy thing to do when teaching English in vocabulary. Based on the information, the researcher intends to conduct experimental research entitle: The Effect of Duolingo Online Application on Students' English Vocabulary Mastery of VII Grade Class at SMP Al Razi Sinar Harapan.

RESEARCH METHOD

In this research the researcher will focus on Quantitative research. Sugiyono (2017) quantitative research is "A research method based on the

philosophy of positivism, used to examine certain populations or samples, collecting data using research instruments, data analysis is quantitative or statistical, with the aim of testing established hypotheses". The purpose of this research design is to determine whether Duolingo online application effective to students' vocabulary skill. The research design is experimental research. This indicates that two types of treatment were used. Students are divided into two groups: the experimental group and the control group. The group that receives treatment through the use of Duolingo Media is the experimental group. In contrast, the group that receives treatment without Duolingo Media is the control group.

Table 1.
Design of the Research

| No | Group | Pre-test | Treatment | Post-test |
|----|---------------------------|----------|-------------------------|-----------|
| 1 | Experimental Group | X_1 | With Duolingo | X_2 |
| 2 | Control Group | Y_1 | Without Duolingo | Y_2 |

Where :

- X_1 : Pre-test experimental group
- X_2 : Post-test experimental group
- Y_1 : Pre-test control group
- Y_2 : Post-test control group.

This research will be conducted in two parallel classes which consist 28 students with the total of population 112 students seventh grade students of junior high school or SMP Al Razi Sinar Harapan. Arikunto (2013:104) stated if population was less 100 than 100 it was better to take all the population as the subject of the research. But if the population was more than 100, it allowed the researcher take only 10 - 20 % or 25 - 30 % to be investigate as the sample of population. The sample of this researcher will be two classes of the seventh grade. The experimental class consisting 14 students which received Duolingo application as a treatment. The controll class is consisting of 14 students will be the controlled class which do not receive any treatments.

The researcher used multiple - choice test as instrument. The test consist of 15 questions, It is give to know the students achievements in vocabulary. Pre- and post - test, tests are the two types of tests used in this research. Before give treatment, students take a pre - test to determine their level of proficiency. The students ' competence after given treatment then assessed using a post - test.

Students in the experimental class receive the treatment by using Duolingo Media treatment, while those in the control group only receive the conventional approach. The results of the pre-test, which was taken at the start of the learning, and the post-test, which was taken at the end of the lesson.

The t-test is used to determine the differences between the means scores of the two groups. The test's formula is as follows :

$$T = \frac{MX - MY}{\sqrt{\left(\frac{\sum x^2 + \sum y^2}{nx - ny - 2}\right) \left(\frac{1}{nx} + \frac{1}{ny}\right)}}$$

Where :

- T : Total score
- Mx : Mean of experimental group
- My : Mean of control group
- $\sum x$: Standart derivasion of experimental group
- $\sum y$: Standart derivasion of control group
- nx : Total sample of experimental group
- ny : Total sample of control group

If the result shows Sig. (2-tailed) > sig a = 0.05 (5%), then the null hypothesis is accepted. But, if Sig. (2- tailed) < sig α = 0.05 (5%), then alternative hypothesis is accepted.

RESULT AND DISCUSSION

Students achievement data is divided into two types, namely experimental class and control class data obtained from the pre-test and post-test which are applied to both values.

Table 2.
The Difference of Score Between Pre-test and Post-test of
the Experimental Class

| No | Initial Students' Name | Pre-Test T ₁ | Post-Test T ₂ | T ₂ - T ₁ (X ₂) |
|----|------------------------|-------------------------|--------------------------|---|
| 1 | AAB | 66 | 86 | 20 |
| 2 | AD | 33 | 53 | 20 |
| 3 | AI | 53 | 86 | 33 |
| 4 | ARA | 53 | 73 | 20 |
| 5 | AZC | 53 | 86 | 33 |
| 6 | HA | 53 | 86 | 33 |
| 7 | KR | 66 | 86 | 20 |
| 8 | M | 53 | 80 | 27 |

| | | | | |
|-------|-----|----|----|-----|
| 9 | NFK | 60 | 60 | 0 |
| 10 | PI | 53 | 73 | 20 |
| 11 | RA | 46 | 66 | 20 |
| 12 | RW | 66 | 86 | 20 |
| 13 | SDA | 73 | 86 | 13 |
| 14 | ZS | 33 | 73 | 40 |
| TOTAL | | | | 319 |

$$M_x = \frac{\sum X}{N}$$

$$M_x = \frac{319}{14}$$

$$M_x = 22,78$$

Based on the table showed that, the deviation between pre-test and post-test in experimentar class is 22,78.

Table 3.
The Difference Score Between Pre-test and Post-test of the Control Class

| No | Initial Students' Name | Pre-Test T ₁ | Post-Test T ₂ | T ₂ - T ₁ (Y ₂) |
|-------|------------------------|-------------------------|--------------------------|---|
| 1 | AAA | 40 | 40 | 0 |
| 2 | AF | 66 | 86 | 20 |
| 3 | ANS | 33 | 60 | 27 |
| 4 | ARP | 33 | 60 | 27 |
| 5 | ASS | 73 | 86 | 13 |
| 6 | AZ | 60 | 73 | 13 |
| 7 | GK | 80 | 93 | 13 |
| 8 | LA | 73 | 80 | 7 |
| 9 | MRS | 46 | 53 | 7 |
| 10 | NA | 53 | 73 | 20 |
| 11 | NFS | 46 | 60 | 14 |
| 12 | SF | 40 | 73 | 33 |
| 13 | SFS | 53 | 53 | 0 |
| 14 | SPL | 53 | 53 | 0 |
| TOTAL | | | | 194 |

$$M_x = \frac{\sum X}{N}$$

$$M_x = \frac{194}{14}$$

$M_x = 13,85$

Based on the table showed that, the deviation between pre-test and post-test in experimantar class is 13,83.

Table 4.
The Standart Deviation of Experimental Class

| No | $T_2 - T_1$ (X_2) | Dx ($X-22,78$) | Dx^2 |
|-------|--------------------------|---------------------|---------|
| 1 | 20 | -2,78 | 7,72 |
| 2 | 20 | -2,78 | 7,72 |
| 3 | 33 | 10,22 | 104,44 |
| 4 | 20 | -2,78 | 7,72 |
| 5 | 33 | 10,22 | 104,44 |
| 6 | 33 | 10,22 | 104,44 |
| 7 | 20 | -2,78 | 7,72 |
| 8 | 27 | 4,22 | 17,80 |
| 9 | 0 | -22,78 | 518,92 |
| 10 | 20 | -2,78 | 7,72 |
| 11 | 20 | -2,78 | 7,72 |
| 12 | 20 | -2,78 | 7,72 |
| 13 | 13 | -9,78 | 95,64 |
| 14 | 40 | 17,22 | 294,52 |
| TOTAL | | | 1290,74 |

Table 5.
The Standart Deviation of Control Class

| No | $T_2 - T_1$ (Y_2) | Dx ($X-13,83$) | Dy^2 |
|----|--------------------------|---------------------|--------|
| 1 | 0 | -13,85 | 191,82 |
| 2 | 20 | 6,15 | 37,82 |
| 3 | 27 | 13,15 | 172,92 |
| 4 | 27 | 13,15 | 172,92 |
| 5 | 13 | -0,85 | 0,72 |
| 6 | 13 | -0,85 | 0,72 |
| 7 | 13 | -0,85 | 0,72 |
| 8 | 7 | -6,85 | 46,92 |
| 9 | 7 | -6,85 | 46,92 |
| 10 | 20 | 6.15 | 37,82 |

| | | | |
|-------|----|--------|---------|
| 11 | 14 | 0,15 | 0,02 |
| 12 | 33 | 19,15 | 366,72 |
| 13 | 0 | -13,85 | 191,82 |
| 14 | 0 | -13,85 | 191,82 |
| TOTAL | | | 1459,68 |

The data above than was calculated by aplying t-test formula as follows :

$$T = \frac{MX - MY}{\sqrt{\left(\frac{\sum x^2 + \sum y^2}{nx + ny - 2}\right) \left(\frac{1}{nx} + \frac{1}{ny}\right)}}$$

$$T = \frac{22,78 - 13,83}{\sqrt{\left(\frac{1290,74 + 1459,68}{14 + 14 - 2}\right) \left(\frac{1}{14} + \frac{1}{14}\right)}}$$

$$T = \frac{8,95}{\sqrt{\left(\frac{2750,42}{26}\right) \left(\frac{2}{28}\right)}}$$

$$T = \frac{8,95}{\sqrt{(105,78) (0,07)}}$$

$$T = \frac{8,95}{\sqrt{7,40}}$$

$$T = \frac{8,95}{2,72}$$

$$T = 3,29$$

Based on the calculation of the t-test above, it was found that t-test is 3,29. The resercher used the 5% (0,05) alpha level of significance as usually educational research. Determining degree of freedom (df), with formula :

$$Df = (Nx + Ny) - 2$$

$$Df = (14 + 14) - 2$$

$$Df = 26$$

So, in the table (t_t) is 2,056 for 5%

To test the hypothesis, a t-test formula and a distribution table of t-critic values were applied. If the observed value is greater than the t table, it means that the null hypothesis is rejected and the alternative hypothesis is accepted. In other words, "Ha" is accapeted and "Ho" is rejected, means that learning vocabulary using the Duolingo online application is more effective than not using the Duolingo online application. Increase, this study showed that t-observed was higher than t-table ($3,29 > 2,056$).

CONCLUSION

Based on the result and discussion of the researcher, it could be concluded that the students' English vocabulary got improvement through duolingo application. It was showed from the mean of the students the pre-test was 754 and the post-test was 1074 in experimental class and the pre-test was 746 and the post-test 943 in control class, For hypothesis by using t-test, it was found that t-observed value was 3,29 with degree of freedom (df) 26 is higher than the value of t-table 2,056. Therefore "Ha" is accepted and "Ho" is rejected. In conclusion, the vocabulary learning by Duolingo Online Application in experimental class is significantly affected on students vocabulary achievement in grade VIII-2 and the acceptance.

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