



The Effect Of Using Duolingo To Improve Students' Vocabulary Mastery At The Eleventh Grade Students Of Sman 5 Pinggir

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ABSTRACT

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This study was a quantitative approach with quasi-experimental research design. The descriptive quantitative methods was applied to describe the data.. The population of the study was eleventh grade students especially social studies class with a total of 81 students, consisting of 3 classes. Due to the large number of population, the researcher took a sample of 57 students. In this research, it was found that the mean of pre-test score in experimental class was 64 and in control class was found 60.14. Meanwhile, the mean of post-test score which found in experimental class was 75.31 and in control class was 68.14. It can be concluded that there were differences in the average of the students' vocabulary in speaking at the time of pretest and posttest. It meant there was significant effect on students' vocabulary

Introduction

English is a foreign language that has become a subject at school that students from the lowest to the highest level should learn, and it is also examined in the National Examination English skills. The most important component of English language learning is vocabulary. Vocabulary is the previous element in English that students must understand and must be taught to them because it has a key role in every language around the world, where without vocabulary we cannot understand each other. Richard (2002) states that Vocabulary is a core component of language proficiency and provides much of the basis for how well learner speaks, listen, read, and write.

Thornbury's (2002) said that without grammar little can be conveyed, without vocabulary nothing can be conveyed. This means that vocabulary is a component of language that people use to convey their thoughts, ideas, or feelings. By having or knowing enough vocabulary, they will communicate well. It is impossible to learn a language without vocabulary. When students start learning and also before they learn further the four skills, namely listening, speaking, reading, and writing, the first aspect they learn is vocabulary.

Based on the results of preliminary research by the researcher at SMAN 5 Pinggir, many problems were found. Based on the perspective researcher, students have some problems. First, the students are less in vocabulary so that they cannot express themselves or say what they want to say. Second, the media that used is not interest. The way to teach the material about vocabulary is still using the 2 conventional way, in which the students given some words then the students writes and memorizes that words. This method will be made the students easy to forget it because some factors like a less of memory, lazy, and bored. With the difficulty of memorizing vocabulary, the ability to understand English both verbal and non-verbal is not optimal. With this condition, the researcher assumes that there is a need to choose the right method, strategy, or media, because it is not an easy thing to teach English vocabulary without being accompanied by the right method.

Nowadays, people have been living in the era of globalization, where technological development is growing rapidly. Finally, they try to find a lot of information by using the internet. They can find various information and news through the internet. The development of technology is related to the development of English. Technology can change the way people work, learn, interact and spend time. Along with the times, including smartphone technology that continues to develop, where smartphones become a primary need for everyone, especially for students. In addition, technology also has a very important role in the education and learning process in almost all over the world. The use of learning media that uses technology in the form of android applications, can make it easier for students to understand vocabulary and make learning more fun. Therefore, researchers want to conduct experimental research using one of the android applications that are easy to use by students to learn, especially in English. One of the applications that can be used to learn English is Duolingo.

Lionetti (2013) mentions that Duolingo is a free gamified e-learning tool that allows users who want to learn to speak in foreign languages, such as English, Italian, French, and so on. Duolingo itself can be downloaded on mobile phones or registered on computers, so users can practice it anytime and anywhere. It can be seen that technology provides learning instruments for students. Game-like applications provide new facilities for a significant learning process and enhance the teacher's basic task of providing stimulation and motivation to students to understand a second language by using a fun learning process effectively. The role of the teacher in using this method is as a mediator. In this constraint, an experimental research has been conducted entitled "**The Effect of Using Duolingo to Improve Students' Vocabulary Mastery at SMAN 5 Pinggir**".

1. *The Concept of vocabulary*
 - a. *The Definition of Vocabulary*

Learning a language cannot be separated from learning vocabulary. Vocabulary supports speakers to express their opinions, ideas and feelings in communication. As Cameron (2001) states at the primary level, vocabulary is the core of foreign language learning to build useful words for students. Vocabulary is the arrangement of words into a sentence that is arranged according to aspects and uses

standardized language and has meaning and also the meaning contained in each word.

According to Barnhart (2008), vocabulary is a combination of various words used by people who contain operations and are able to communicate. Vocabulary is the core of language to support interaction participants in communication. From the definitions above, researchers can conclude that vocabulary is a combination of a number of words that can help students in understanding the teaching and learning process in class. By memorizing a lot of vocabulary then students can speak a lot with words. That means vocabulary is very important to build students' knowledge in the classroom.

b. The Types of Vocabulary

According to Read (2000), vocabulary has two types, namely active vocabulary and passive vocabulary. People still need a lot of practice and context to learn new words. Store vocabulary in their minds and call it back when they speak or write. The two main groups of a person's vocabulary are active and passive vocabulary. First, active vocabulary is used in speaking or writing and consists of words that come to a person's mind immediately when he or she has to produce an oral sentence or spoken or written sentences. Second, passive vocabulary is known but not used by a person. People understand it when it is heard or read.

According to Hiebert, E. H., & Kamil, M. L. (2005) stated that Passive vocabulary is usually more than active vocabulary. Clearly, both types of vocabulary blend together. Active vocabulary may seem more important in communication, but the purpose of foreign language teaching is to expand students' passive and active vocabularies and develop all the four basic language skills; speaking, writing, reading and listening.

As stated by McCarthy (2016), there are some types of vocabulary there is :

1. General vocabulary: This includes common words and phrases that are used in everyday conversation. Examples include "hello," "goodbye," "please," and "thank you."
2. Technical vocabulary: Technical vocabulary refers to specialized words and phrases that are used in specific fields or industries. For example, medical professionals might use terms like "diagnosis," "treatment," and "symptoms," while computer programmers might use words like "algorithm," "syntax," and "debugging".
3. Academic vocabulary: Academic vocabulary refers to words and phrases that are commonly used in academic settings, such as in lectures, discussions, and research papers. Examples include "hypothesis," "analysis," and "methodology."
4. Slang and informal vocabulary: Slang and informal vocabulary refers to words and phrases that are used in casual conversation and may not be appropriate for formal situations. Examples include "cool," "awesome," and "dude."

5. Idiomatic expressions: Idiomatic expressions are phrases whose meanings cannot be easily deduced from the individual words. For example, "to break the ice" means to initiate a conversation, even though there is no actual ice involved.

How to teach vocabulary effectively based on the work of Nation, P. (2008):

1. Introduce new words in context
2. Teach high-frequency words first
3. Use a variety of techniques
4. Provide multiple exposures
5. Encourage deliberate vocabulary learning

c. The Aspect of Vocabulary

According to Ur (1996) there are some aspects of vocabulary that should be taught or mastered by students in learning foreign language, as follow

1. Form: pronunciation and spelling
2. Grammar
3. Aspect of Meaning denotation, connotation, appropriateness
4. Aspect of meaning, meaning relationship.

How the meaning of one item relates to the meaning of others can also be useful in teaching There are various such relationships here are some of the main ones.

- a. Synonyms: item that mean the same, or nearly the same, for example, bright, clever, smart may serve as synonym of intelligent
 - b. Antonym: items that mean the opposite; rich is an antonym of poor.
 - c. Hyponyms: items that serve as specific examples of general concept; dog, lion, mouse are hyponyms of animal.
 - d. Co-hyponym or co-ordinates: other items that are the 'same kind of thing'; red, blue, green and brown are co-ordinates.
 - e. Superordinate: general concepts that "cover" specific items, animal is the superordinate of dog, lion, mouse
 - f. Translation: word or expression in the learners' mother tongue those are more or less equivalent meaning to the item being taught.
5. Word formation

d. Difficulties of Vocabulary

In learning vocabulary, of course, there are some difficulties that will be faced by students. Thornbury (2002) says that there are several factors that make some words more difficult as follows:

1. Pronunciation
2. Spelling
3. Length and complexity
4. Grammar
5. Meaning

6. Range, connotation and idiomaticity

e. *The Classes of Vocabulary*

Hatch and Brown (1995) classified word based on their functional categories and it is called as part of speech. The parts of speech can be grouped into two broad families depending on their function and grammatical behavior: Lexical words (or content words) and Function words (or structure words).

1) Lexical Word

Lexical words are the main carriers of information in a text. These words can be further divided into the following classes of words (or parts of words): nouns, verbs, adjectives, and adverbs.

a) Lexical Verbs

The most distinctive feature of lexical verbs (also called main verbs) is that they have meaning. Some verbs express meanings associated with physical actions or activities (doing, resting, walking), others to mental or intellectual activity (think, believe).

b) Noun

Nouns are words used to refer to people, animals, things, substances, states, events, ideas, and feelings. Nouns can be the subject or object of verbs; nouns can be modified with adjectives and can use determiners. Nouns can be divided into basic noun categories: Countable nouns, uncountable nouns, proper nouns, and collective nouns.

c) Adjective

The main function of adjective is to modify nouns or pronouns. They describe the qualities of people, things and abstractions.

d) Adverb

Adverbs add information about the state of a situation or an event. They complete the meaning of verbs that state how, when, where, how often something happens.

2) Function Word

Function words can be categorized in terms of word classes such as prepositions, pronouns, determiners, conjunctions and auxiliary verbs.

a) Auxiliary Verbs

Auxiliary verbs have no meaning and are added to main verbs or lexical verbs to serve various functions. Auxiliary verbs can be subdivided into primary (be, have, do) and secondary auxiliary verbs - or modal auxiliary verbs (will/will, can/can, shall/should, may /may, must, need, dare). Modal auxiliary verbs are also called defective verbs because they have only one verb form. For example, they cannot take the final inflected "s" for the third person singular; they cannot be used in the progressive aspect or in the imperative mood.

b) Noun Determiner

A determiner restricts the meaning of a noun by limiting its reference. Noun determiner have several components, that is: articles, possessive determiners, demonstrative determiners, and quantifiers.

c) Conjunction

When you join two clauses in a sentence, you can use a conjunction to connect them and to show the relationship between them. There are two types of conjunctions. They show different types of relationships between clauses in a sentence.

d) Preposition

Prepositions are linking words that introduce prepositional phrases, i.e., a preposition + noun/noun phrase. E.g. about, after, by, down, from, into, towards, around, without, because of, due to, apart from, despite.

e) Pronoun

Pronouns fill the position of a noun or a whole noun phrase. E.g. subject pronouns; (I, you, he/she/it, we, you and they), object pronouns; (Me, you, him/her/it, us, you, them), possessive pronouns; (mine, yours, his/hers/its, ours, yours, theirs), reflexive pronouns; (myself, yourself, himself/herself/itself, ourselves, yourselves, themselves), indefinite pronouns; (Nobody, somebody, anybody, no one, everybody...), reciprocal pronouns; (Each other, one another), interrogative pronouns; (Who, which...)

Words or vocabulary are classified based on their function or use, we can see how they are used. So, when communicating well and smoothly, it is necessary to know the classification of the word.

f. Vocabulary Mastery

According to Thornbury (2002) language first appeared as a word. Learning vocabulary is still a problem for students because students still use the memorization method in learning English, students also need to know more about the words they learn when they use the words in their conversation or writing. Meanwhile, vocabulary has always been an important part of English. In order to be able to listen, read, read, write, and speak, this is an important thing that students have.

Richards (2002) emphasizes that vocabulary is central to language skills, and it provides many frameworks for students in speaking, listening, reading and writing. Mastery is knowing, or really understanding something, and having no problem using it. The purpose of vocabulary mastery is to train students to have language skills and abilities. If students learn more vocabulary, their language skills will improve. To improve vocabulary acquisition in skills consisting of knowledge, and comprehension in English. The ability to know words includes the ability to know the meaning of words, remember words well, pronounce words correctly, and use vocabulary according to the correct context. Therefore, in addition to knowing vocabulary, vocabulary mastery must also be able to understand these words to be used in communication. understanding in English. The ability to know words includes the ability to know the meaning of words, remember words well, pronounce words correctly, and use vocabulary according to the correct

context. Therefore, in addition to knowing vocabulary, vocabulary mastery must also be able to understand these words to be used in communication.

g. Rating Scale of Vocabulary Assessment by Brown

Score 5

Conversational at a level fully acceptable to an educated native speaker with all its features including breadth of vocabulary and idioms, colloquialisms, and relevant cultural references

Score 4

Can understand and participate in any conversation within his/her range of experience with a high degree of vocabulary precision

Score 3

Can speak the language with sufficient vocabulary to participate effectively in most formal and informal conversations on practical, social and professional topics. Vocabulary is extensive enough that he/she rarely has to grope for words

Score 2

Has sufficient vocabulary to express himself/herself simply with some less precise words.

Score 1

Speaking vocabulary is inadequate to express anything but the most basic needs

2. Duolingo

a. The Definition of Duolingo

According to Munday (2016), "Duolingo is a free app created by Luis Von Ahn and Severin Hacker in November 2011." Duolingo also has a motto: "Free language education for the world." In accordance with its site, "it has more than 30 million registered users." It offers several languages for English speakers as well as others for non-English speakers. Meanwhile, Lionetti (2013) stated that Duolingo had targeted there e-learning to individuals who are looking to learn a second language. This tool is for any user looking to learn how to speak from any of the following languages: English, Italian, French, Portuguese, Spanish, and German. To use this online gamified e-learning tool, the audience should be familiar with and have access to an iPhone, iPad, any Android device, or a computer. To create an account on Duolingo, the target audience must have some kind of account, such as one on Facebook or an email address. No minimum age is required to use Duolingo, nor are there any prerequisites or pre-requisite knowledge necessary to start a language course. Regardless of whether users are beginning, intermediate, or advanced learners, Duolingo is for them all.

b. The Characteristics of Duolingo Application

Duolingo, as a free language learning tool, can provide a broader range of functions, but it does require an internet connection to use. The following are some of the aspects of the Duolingo application.

1. Achievements are Duolingo application feature given out when the learners or users have completed the lessons through best effort
2. Lingots is a small jewel icon that the learners have completed the activities and level successfully to get “lingots”. It can be changed for extra bonus practices.
3. Crown Levels are a new feature in the Duolingo application, and each skill has a “Crown Levels”. When you have completed a skill you will get a crown and continued to new skills.
4. Daily Goal is about appreciation for the learners who have completed a daily goal. Duolingo application rewards them with surprising sounds and unique pictures and make the learners feel more enjoyable.
5. Clubs User Networking is a feature for learners to communicate and share with other users about language learning. It also can complete to gain (10) XPs and see their friends score

c. *The Objectives of Duolingo*

Lionetti (2013) states that there are several objectives of the Duolingo application, as follows:

1. To provide users with free instruction in other languages.
2. To comprehend and speak a phrase or sentence in another language.
3. Ability to listen to and type a sentence or phrase
4. To improve skills in translating words and sentences from the user's preferred language into English.
5. To be able to translate words and sentences from English into the user's preferred language.

d. *Types of Duolingo*

Wagner et al. (2015, as cited in Amalia, 2019) say that there are four separate assignments in Duolingo, such as:

1. Vocabulary
In the vocabulary task, a number of words in boxes on the screen can be seen by the test taker. After that, the correct words in the English language must also be selected by the test taker. A rule states that test takers have one minute to complete the task.
2. Listening and Transcription
The purpose of listening and transcription is to evaluate the test taker's ability to listen. Test takers have to type out the sentences they hear presented to them that are audio-listened to. Typically, this task is a dictation model. Test takers must complete the task and can hear the audio text up to three times. This task has a time limit of one minute for test takers to complete.

3. Sentence Completion

Sentence completion is a task labeled "complete sentences." Here, test-takers will be presented with some short texts that consist of several sentences. There are five blank spaces in this task that must be selected by clicking on the blank space to answer the question from the eight answer options provided. This task is identical to the answer selection task or rational task. There is a rule that test takers only have three minutes to complete this task.

4. Speaking

The last task is speaking. In this task, the test taker will be given on-screen instructions such as "Say this sentence." Then, the microphone icon must be clicked by the test taker, and the written sentence must be read aloud at the same time as clicking the icon. This task also has a time limit of one minute to complete. There are several tasks provided in the Duolingo app, but in this study we only focus on vocabulary tasks that are suitable for this experimental design.

e. Steps to Use Duolingo

To make it easier for readers to understand the function of each part of the Duolingo application, there are several steps that can be taken in classroom learning activities as follows:

1. First, to use the application on mobile phone, the students can download it on Google Play or App Store and install with Android/iOS operating systems. Users can create an account or access activities without an account. However, users can only save their progress by creating an account.
2. Next, after creating an account, the students can choose the English language to study and immediately begin activities.
3. Then, the students are able to take a placement exam to progress to more advanced units. The learning experience is broken up into themed units which start from "Basics" and can range from thematic vocabulary sections such as "Food" or "Family" to more advanced grammar topic such as "Past Perfect" and "Subjunctive Past".
4. Finally, the students can access their progress through the lessons or units. Each lesson is around 10 to 20 questions that focus on improving vocabulary through pronunciation skills, translation, listening comprehension, and vocabulary knowledge. When each lesson has completed well, the lesson is leveled-up to the next lesson and is then unlocked and get a crown.

f. Duolingo Advantages and Disadvantages

As stated by Mulya et al. (2016, as cited in Amalia, 2019), the Duolingo application also has advantages and disadvantages, as follows:

1. The Advantages of Duolingo

Duolingo is a game-based platform for learning foreign languages. The app can be accessed through a browser-based application or an iOS, Android, or Windows Phone app. Duolingo has been released to use a mix of activities: students listen, copy, speak, and translate in a simple interface as they work through words and phrases. Duolingo allows teachers to track students' language learning progress with ease. Students share their progress in language learning directly with their teachers, who can track their progress through a dedicated dashboard. Teachers can plan lessons, assign Duolingo skills as homework, and offer additional rewards to earn credit points by being able to track their students' progress.

Duolingo itself is accessible on PC and also on Android by downloading it from the Play Store. The interface is explicit and very easy to use. There is also a nice balance between translation, listening, word matching, and speaking exercises. The speech recognition program is not too bad, and students can still hear what the speaker is saying.

2. The Disadvantages of Duolingo

Duolingo uses a computerized sound system for everything, so students are not introduced to how the language actually sounds. The voices are dry, non-rhythmic, and can be heard smoothly. The most important thing in their language learning is actually speaking with native speakers of their target language. Nothing can replace that, and currently Duolingo has no way of enabling people to communicate with native speakers. Duolingo does not offer any explanation of grammar structures as part of its dashboard. Grammar is an important part of language learning, and it makes it difficult for students to do the assignments.

Method

The research use quantitative approach, which used quasi-experimental research design. Through this research, the research wanted to find out the effect of using Duolingo on Students' Vocabulary mastery at eleventh grade at SMA N 5 Pinggir. There were two groups, the first was an experimental group which had been given a technique that had been implemented and the second was a control group that had no special treatment in the teaching learning process.

In this research, the researcher used the quasi-experimental design named Pre-Test Post-Test Nonequivalent-Group Design. According to Creswell (2012), Quasi-experimental design used to measure the outcome of treatment to a so-called experimental group, compared to a control group. The experiment class was taught by using this technique. The study did in eighth meetings; pre-test, treatment, and post-test. Pre-test and post-test given to students in experiment class. Pre-test given

in the first meeting. Post-test given after treatment in order to measure on students' vocabulary in an experimental group.

The study was carried out at SMA Negeri 5 Pinggir on June 2023. It will be located on Suriname Street. The reason for selecting the school was based on the researcher's experience in that school, where she discovered problems with the students' vocabulary, causing them to be unable to express themselves or say what they wanted to say, as well as the availability of adequate time and funds.

The subject of the research is the eleventh grade of SMA Negeri 5 Pinggir in the academic year 2022/2023 and the object of the research is the effect of using Duolingo on students' vocabulary..

A population is any group of individuals that have one or more characteristics in common that are interesting. According to Creswell (2012), the population is a group of individuals who have the same characteristics. There are students in the eleventh grade who are divided into majoring classes, they are:

Table 1: The Population of The Research

No	Sample	The Students
1	XI IPS 1	29
2	XI IPS 2	28
3	XI IPS 3	24
	Total	81

The sample was a subgroup of the target population that the researcher plans to study for generalizations about the target population by Creswell (2012). The researcher selects two classes as the samples by assigning them to two groups, one as the experimental group and another as the control group. The experimental group will be given the treatment used in Duolingo Application on their vocabulary, and the control group will not be given the treatment. Class XI IPS 1 and Class XI IPS 2 are chosen to be the samples because both of these classes have the same aspects and the same environment around the classroom.

Table 2: The Sample of The Research

No	Sample	The Function	Total
1	XI IPS 1	Experimental class	
2	XI IPS 2	Control class	
	Total	81	

Researchers use tests to collect data during their research. First, the researcher gave a pre-test to the two classes, namely XI IPS 1 and XI IPS 2. Then after the pre-test, the researcher conducted treatment with the experimental class. After that, the researcher gave a post-test to both classes. This is used to determine the results after treatment and the effect of Duolingo on students' vocabulary. In analyzing the data, the researcher used descriptive statistics and inferential statistic.

Finding and Discussion

A. *The Data Descriptive of Pre-Test*

Mean of pre-test score from Experiment class from 29 students is 64, which was considered to “Average” categorized. The minimum score was 52 and maximum score is 76. Meanwhile the mean score for pre-test control class from 28 students is 60.14, which was considered to “Poor” categorized. The minimum score was 48 and maximum score is 72.

B. *The Data Descriptive of Post-Test*

Mean of post-test score from Experiment class from 29 students is 75,31 which was considered to “Good” categorized. The minimum score was 64 and maximum score is 88. Meanwhile the mean score for post-test control class from 28 students is 68.14 which was considered to “Average” categorized. The minimum score was 56 and maximum score is 80.

C. *Normality Test*

Table 6: Normality Test Result

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Class		Statistic	df	Sig.	Statistic	df	Sig.
Score Speaking	Pre-Test Experiment	.155	29	.072	.956	29	.258
	Post-Test Experiment	.126	29	.200 [*]	.953	29	.222
	Pre-Test Control	.152	28	.099	.955	28	.269
	Post-Test Control	.134	28	.200 [*]	.959	28	.324

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the table, the data on Pre Test and Post Test are normally distributed. It can be seen from the Sig. score of Pre Test Experiment that is higher than the level of significance ($0.072 > 0.05$)

Then the Sig. score of the Post Test Experiment is higher than level of significance ($0.200 > 0.05$). Next, the Sig. score Pre Test Control is higher than level of significance ($0.099 > 0.05$). And the last the Sig. score Post Test Control is also higher than the level of significance ($0.200 > 0.05$). So, this show that the data is normally distributed.

D. Homogeneity Test

Table 7: Homogeneity Test Result

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Score Speaking	Based on Mean	.198	1	55	.658
	Based on Median	.122	1	55	.728
	Based on Median and with adjusted df	.122	1	54.917	.728
	Based on trimmed mean	.208	1	55	.650

Based on the table, it was clear that significance of homogeneity of variance is normally distributed. The value of the Lavene test show in the Based on Mean with Sig. of $0.658 > 0.05$, which means that the variance is called homogeneous.

E. Hypothesis Test

Table 8: The result of t – test from Pre Test and Post Test score

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	Pre-Test Eksperimen - Post-Test Experiment	-11.310	7.565	1.405	-14.188	-8.433	-8.052	28	.000
Pair 2	Pre-Test Control - Post-Test Control	-8.000	4.355	.823	-9.689	-6.311	-9.721	27	.000

Based on the table, output paired test shows the result of compre analysis with using T-test. The difference mean score of Pre Test and Post Test Experiment is -11.310. Standard error mean is 1.405. The lower difference is -14.188 and upper difference is -8.433. The result of t_{count} is -8.052. The significant 2-talled is 0.000 and the significant level is 0.05.

The difference mean score of Pre Test and Post Test Control is -8.000. Standard error mean is 4.355. The lower difference is -9.689 and upper difference is -6.311. The result of t_{count} is -9.721. The significant 2-talled is 0.000 and the significant level is 0.05. It means that the data is valid. It also can be described in the graphic of paired sample test below:

The interpreting to, the researcher used two ways:

1. By comparing t_o to t_{table} from $df = 27$, the level of significance of 5%. It can be see that $-8.052 < 2.052$ or $t_o < t_{\text{table}}$. And by comparing t_o to t_{table} from $df = 26$ the level of significance of 5%. It can be see that $-9.721 < 2.056$ or $t_o < t_{\text{table}}$. It means that

null hypothesis (Ho) was rejected, while the alternative hypothesis (Ha) was accepted.

2. By comparing number of significance based on the result of paired sample t-test that the significant 2-tailed < to significant level. It can be seen from Sig. 2-tailed is $0.000 <$ from sig level is 0.05 thus Ha was accepted and Ho was rejected. In other word, the data is valid.

Conclusion

Based on the presentation and data analysis, the effect of using Duolingo Application was able to make significant effect on students' vocabulary. The students more interested in learning vocabulary by using Duolingo application, it can be seen in their value before use Duolingo application and after use Duolingo in their class.

Based on the data analysis found the finding of paired sig. (2-tailed) result was 0.000, because of sig. (2-tailed) was smaller than 0.05, it can be conclude that Ha was accepted and Ho was rejected.

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