# THE EFFECTIVENESS OF USING DUOLINGO IN ENHANCING STUDENTS' VOCABULARY MASTERY COMPARED TO WORDWALL MEDIA AT SMP NEGERI 1 TULAKAN

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**Abstract**

This study aims to determine The Effectiveness of Using Duolingo In Enhancing Students' Vocabulary Mastery Compared to Wordwall Media at SMP Negeri 1 Tulakan and to know the significant difference between Duolingo if applied by teachers in teaching vocabulary mastery and how students' mastery applying Duolingo in vocabulary learning in class compared to Wordwall media. The research design used was quantitative methods with experimental research through pre-test and post-test. The population in this research were all eighth-grade students of SMP Negeri 1 Tulakan. The sampling technique that will be used in this study is Cluster Random Sampling. One group will be obtained as an experimental class with Duolingo media, and one will be a control class with Wordwall media, with a sample of 25 students. From the research results, the results of the t-test are $t_o$ (2,22) is higher than $t_{t(25,0,05)}$(2,060) or $t_o > t_t$, $H_o$ is rejected, and it can be concluded that there is a significant difference between $X_1$ (Experimental group) and $X_2$ (control group). It can be assumed that the group of students taught using Duolingo media gave better achievement than those taught using Wordwall media. The writer recommends using Duolingo and Wordwall for English language learning to boost vocabulary and prevent boredom. Based on the study, the Duolingo program enhances vocabulary mastery more than Wordwall media. This implies that incorporating technology into teaching, focusing on interactive elements, and periodically updating app features are critical for supporting vocabulary mastery and successful vocabulary instruction.
*Keywords: Duolingo, Wordwall, student, vocabulary mastery*

## Introduction

English is an international language that has been approved around the world. According to (Crystal, 2000), English is a global language. This statement implies that English is a universal communication medium, and of course, it is essential for everyone to master it. According to (Apriyanti, 2017), English is spread quickly worldwide. Since it has become the international language, it is spoken by most people in this universe. People must master the English language not to be left behind. From elementary school to college, English is taught as an educational system in Indonesia and other countries. Students must master four skills when learning English at school: listening, reading, speaking, and writing. To acquire these four skills, it is necessary to understand the fundamentals of English, specifically vocabulary mastery.

Vocabulary mastery plays an essential role in the process of acquiring English proficiency. Vocabulary is the foundation for effective communication, text comprehension, and fluency. A strong vocabulary facilitates expressive abilities and enhances receptive skills, allowing students to understand nuances in meaning and context. According to (Puspitasari, Apriyanti, & Partawidjaja, 2024), the basis of language is vocabulary, and if vocabulary does not exist, then there is no such thing as language. Therefore, educators and researchers emphasize the importance of vocabulary mastery throughout the language learning journey.

In language learning, mainly English for vocabulary instruction, traditional methods often have some limitations that can hinder effective acquisition and retention. These conventional approaches usually rely on repetitive drills, memorization techniques, and rote learning strategies. While these methods can initially familiarize students with isolated words

and their meanings, they often fail to promote students' more profound understanding and broader application of vocabulary, making them quickly feel bored.

In addition, motivating students to engage in vocabulary learning independently presents a significant challenge in educational settings. The intrinsic motivation required for independent vocabulary acquisition is often overshadowed by competing priorities and distractions in students' lives. Without sufficient motivation, students may perceive vocabulary learning as a chore rather than a meaningful opportunity to improve language skills. This lack of engagement can result in superficial learning outcomes and hinder long-term retention of vocabulary knowledge.

To overcome these challenges, innovative approaches are needed that stimulate active engagement and foster intrinsic motivation within students. Integrating technology and interactive learning platforms offers a promising solution by providing experiences that encourage learning and cater to individual learning preferences. Digital media tools can personalize the learning experience, offering immediate feedback and adaptive challenges that maintain student interest and motivation. Using technology-enhanced strategies, educators can create dynamic learning environments that empower students to take charge of their vocabulary development and foster a deeper appreciation for language proficiency.

Duolingo is one of the technologies or media that can be used in vocabulary mastery. According to (Guaquet, 2018), Duolingo is an excellent tool to practice, making the English learning process easy. Meanwhile (Stringe, 2016) stated that Duolingo was a good tool for learning language because it was engaging within many different task types, which motivated the students to reach their target points and to compete with their friends. The purpose of Duolingo is for the user to understand a language and they can use it. In the part of what it provides in learning, the users will know if Duolingo focuses on mastering vocabulary. Based on this, Duolingo can be a tool for students to increase their vocabulary, and teachers can utilize it in the classroom to assist their students in learning vocabulary. Based on the explanation above, the advantage of using Duolingo is that it has various features that follow the vocabulary indicators.

There are other media besides Duolingo that can be used for vocabulary learning, such as Wordwall. Wordwall media is a good to make teaching and learning activities more attractive and fun. A Wordwall is a group of words structured on a wall in a classroom (Cronsberry, 2004). According to (Jati, Sulistianingsing, & Jamaludin, 2023), several advantages were found in using Wordwall.Net in teaching vocabulary. First, students can enjoy the lesson. Second, each student can memorize a new vocabulary and its meaning. Third, all students can participate actively in this activity. Wordwall.

In addition, Wordwall is also related to vocabulary indicators, as explained in (Syamsidar, et al., 2023) research states that This study concluded that on the pronunciation indicator, as many as 10 students said that they strongly agreed. Only 1 student indicated that they disagreed with a percentage of 74.3%. Furthermore, in the spelling indicator, as many as 7 students stated that they strongly agreed, and 2 indicated that they did not agree with a percentage of 72.1%. Furthermore, in the indicator of meaning, as many as 8 students stated that they strongly agreed, and 2 indicated that they did not agree with a percentage of 74.3%. Thus, an effective Wordwall improves vocabulary mastery by 73.5% or is effective in learning English.

(Pilar, 2016) stated that Duolingo is preferred to regular assignments and media because of the convenience it provides, based on his research. Duolingo is easy to use and fascinating; therefore, it will be comfortable to use it as one of the mediums we use when teaching in the classroom. (Vesselinov, 2012) A study was performed on the effectiveness of Duolingo in language learning. Their research revealed that students are satisfied and like learning a

language with Duolingo. According to (Andayani, Wahjuningsih, & Aulia, 2020), the Duolingo mobile application significantly affects students' English Mastery.

Based on some of the studies above they only focus on the effectiveness of Duolingo for vocabulary mastery or the effectiveness of Wordwall for vocabulary mastery. What distinguishes this study from the above studies is that this study wants to compare the two media and determine which is more effective in teaching students vocabulary mastery. No previous studies have compared the two media. In addition, what is different from this study to prior studies is the location of the research; no one has ever researched the area that researchers use.

Thus, researchers aim to determine the significant difference in vocabulary mastery when using Duolingo compared to traditional classroom methods and the effectiveness of Duolingo in enhancing students' vocabulary compared to using Wordwall media. Given the context, the researcher intends to carry out a study titled "The Effectiveness of Using Duolingo in Enhancing Students' Vocabulary Mastery Compared to Wordwall Media at SMP Negeri 1 Tulakan." The researcher posits that Duolingo is more effective for teaching English vocabulary to students than Wordwall. Consequently, this study is important to ascertain whether Duolingo or Wordwall is more effective, enabling teachers to select the most suitable media for vocabulary learning.

**Method**

The research design used was quantitative methods with quasi-experimental research through pre-tests and post-test in experimental and control classes. This design was used because the researcher wanted to investigate whether there was a significant difference in students' vocabulary mastery between students taught using Duolingo and students taught Wordwalls. The population in this research were all eighth-grade students of SMP Negeri 1 Tulakan consisting of seven classes, starting from class VIII-A to VIII-G.

The sampling technique that will be used in this study is Cluster Random Sampling. To determine the sample class is done with a combination technique. Furthermore, with the lottery technique, the first collection is obtained for the experimental class, and the last collection is for the control class, from the results of the drawing that has been done, one group will be obtained as an experimental class with Duolingo media and one group as a control class with Wordwall media, while the others are empty classes.

The research instruments used to collect data were test questions consisting of pre-test and post-test questions. The questions used in the multiple-choice form test. This test was given to the experimental group and also the control group. In order for the test to be of high quality, the test questions were tested first and then the test item analysis was carried out. This analysis is used to determine the validity and reliability of the test questions. Furthermore, if the two class samples are normal and homogeneous then for hypothesis testing the t-test statistical test is used.

**Findings and Discussions**
**Finding**

To get the sample class, the researcher gave a pre-test as the initial vocabulary mastery of VIII grade students of SMP Negeri 1 Tulakan which would then be tested for population normality using the Lilliefors test.

**Table 1: normality test results**

| Group | Total Number of Students | $L_o$ | $L_{table}$ | Description |
|---|---|---|---|---|
| Experimental | 25 | 0,1517 | 0,173 | Normal |
| Control | 25 | 0,1466 | 0,173 | Normal |

Then the researcher conducted a homogeneity test using the Bartlett test. the results of this homogeneity test were obtained $X^2 < X^2{}_t$ or -21,13 < 3,841. Because $X^2 < X^2{}_t$ It means that the population is homogeneous. The results of the validity test of the questions that will be used for data collection in two groups, namely the experiment class and the control class, which have previously been tested on non-samples are as follows; There were 40 questions used, 30 questions from the pre-test and post-test were declared valid, while the other 10 were declared invalid. to test the validity of these questions, they were previously tested on a non-sample.

Based on the table above, the number of multiple-choice questions is 40 questions, while the acquisition of validity tests for questions that have valid status is 30 questions, and 10 of them have invalid status.

Then, the next is the reliability test. the results of the reliability test are obtained value $r_{kk}$ is 0,991 and $r_{t(33,0,05)}$ is 0,344. Because $r_{kk}$ is higher than $r_{t(33,0,05)}$ it can be concluded that the instruments are reliable. The results of the computation of the highest score, mean score, and standard derivation of the two groups, namely the experimental group and the control group from the pre-test and post-test results are as follows:

**Table 3: The computation of the highest score, lowest score, means score, standard derivation**

|  | Group | Highest score | Lowest score | Means | Standard derivation |
|---|---|---|---|---|---|
| Pre-test | Experimental | 75 | 40 | 51 | 11,9 |
|  | control | 70 | 40 | 45,6 | 8,33 |
| post-test | Experimental | 90 | 60 | 71 | 8,77 |
|  | control | 85 | 60 | 65,8 | 7,72 |

After the normality test and homogeneity test are carried out and the data is declared normally distributed and has a homogeneous variance, then hypothesis testing is carried out using the t-test. This test is conducted to determine whether the hypothesis is accepted or rejected. The results of the t-test are $t_o$ (2,22) is higher than $t_{t(25,0,05)}$(2,060) or $t_o > t_t$, $H_o$ is rejected and it can be concluded that there is a significant difference between $X_1$ (Experimental group) and $X_2$ (control group).

**Discussions**

Based on the pre-test scores, it is known that students' initial vocabulary mastery between the experimental and control classes is not too different, with a means initial ability of 51 in the experimental class and 45,6 in the control class. Then the experimental class was treated by using Duolingo media on students' vocabulary mastery and the control class by using Wordwall media in direct teaching on the same subject. After the learning process was completed, a post-test was conducted and the means score of the experimental class was 71 and the control class was 65,8. This means that the treatment value in the experimental class is higher than the treatment value in the control class.

Furthermore, after analyzing using the t-test, the results were obtained $t_o$ (2,22) is higher than $t_{t(25,0,05)}$(2,060) or $t_o > t_t$, $H_o$ is rejected and it can be concluded that there is a significant difference between $X_1$ (Experimental group) and $X_2$ (control group). Then, the results of the comparison of the two groups means writer are also clearly visible. The writer compared the results of the mean scores on the post-test. The means of the experimental group was 71 and the control group was 65.8 (see Appendix 7). It is clear that the means of the experimental group is higher than the control group. From the discussion, it can be assumed that the group of students taught using Duolingo media gave better achievement than the group of students taught using Wordwall media.

Then, the results of the comparison of the two groups of means are also clearly visible. The author compares the results of the mean scores on the post-test. The mean score of the experimental group was 71 and that of the control group was 65.8. From these results, it can be assumed that the group of students taught using Duolingo media provides better achievement than the group of students taught using Wordwall media.

The implementation of learning in the experimental class using Duolingo media provides an opportunity for students to be able to learn many things contained in several vocabulary indicators, such as word meanings, spelling words, form order, and pronunciation, and there is even learning to pronounce the sounds of letters and their IPA symbols. besides that many students feel interested in the features of Duolingo, where this media can be accessed at any time, even the practice questions in it are already available no need to make your own, the Duolingo media model is set like a game so that it makes students more enthusiastic about using it and in participating in learning for vocabulary mastery. According to (Hafidah, 2015) Games are an interesting way to learn English vocabulary.

According to (Reskyani, Basri, & Salija, 2021) This Duolingo game application is very good for learning media in learning English, especially in students' English vocabulary. This application is very helpful for students in learning English. This application is effective and very interesting because it is equipped with fun features so that students do not get bored in learning. They are very happy, relaxed, and comfortable using this application because they easily understand the vocabulary in this game. This application provides features such as vocabulary assignment, listening and transcription tasks, sentence completion tasks, and talking tasks and vocabulary accompanied by interesting pictures.

According to (Hairunnisa, 2023) In this application, users are presented with several interesting features that can facilitate them in learning comfortably and fun. The users are first shown visuals of multiple words or phrases relating to each module's theme, followed by a series of activities of various types. The exercises include translating Indonesian to English, word matching, listening to words, pronouncing words, and selecting missing words from a list of possibilities.

While in the control class using Wordwall media students have a sense of lack of enthusiasm because in Wordwall media the assignment features in it or the questions contained in the media do not only focus on English learning, so when students want to do exercises at home they have to make their questions first, and it takes longer, whereas if at school students can do the exercises because the questions have been made by the teacher and that is what makes this media less interesting for students.

The teacher must choose games that are suitable for the material being studied to achieve the learning objectives. Thus, students can learn and play language effectively at the same time. Duolingo has interesting features that are superior to use in vocabulary mastery. This is because Duolingo has more features that match the indicators of vocabulary.

**Conclusion**

Based on the post-test given to the experimental and control classes in this study, it can be seen that the means learning outcomes of students applied with Duolingo media in vocabulary mastery are 71 and the average learning outcomes of students using Wordwall media are 65.8. It can be seen that the means learning outcomes of experimental class students are higher than the average learning outcomes of students in the control class, so it can be said that learning with the application of Duolingo media provides better results on vocabulary mastery of grade VIII students at SMP Negeri 1 Tulakan.

The results of the t-test are $t_o$ (2,22) is higher than $t_{t(25,0,05)}$(2,060) or $t_o > t_t$, $H_o$ is rejected and it can be concluded that there is a significant difference between $X_1$ (Experimental group) and $X_2$ (control group). So, it can be said that learning with the application of Duolingo

media provides better results on vocabulary mastery, and Duolingo media can be used as an alternative that can be used in learning students' vocabulary mastery.

The writer suggests using Duolingo and Wordwall for English language learning to increase vocabulary and allowing teachers to choose games to avoid boredom in class. Based on the study, the Duolingo program is more beneficial than Wordwall media in terms of enhancing vocabulary mastery. This implies that incorporating technology into teaching, focusing on interactive elements, and periodically updating app features are critical for supporting vocabulary acquisition and successful vocabulary instruction.

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