

THE EFFECTIVENESS OF DUOLINGO APPLICATION IN HELPING STUDENTS AT MAN 3 MEDAN IN LEARNING ENGLISH VOCABULARY

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ABSTRACT

This study was conducted to determine the effectiveness of the Duolingo application in helping students learn English vocabulary. This research uses a survey method. The sample of this research is the students of class XI MIPA 3/4/5 MAN 3 Medan in the academic year 2021/2022. To collect data, the writer uses a questionnaire instrument (Google Form) which contains interview questions about the Duolingo application and a vocabulary mastery test obtained from the Duolingo application. The writer's findings reveal that the Duolingo application has a positive influence in helping students learn English vocabulary. In this case, it can be concluded that from the results of research on students of class XI MIPA 3/4/5 MAN 3 Medan for the academic year 2021/2022, the Duolingo application has fairly strong effectiveness in helping students learn English vocabulary.

Keywords: *effectiveness, duolingo application, vocabulary*

I. INTRODUCTION

English is an international language that is used by all countries in the world. English also has the most important role in the world as a tool to communicate with each other. In formal schools, English is a subject that must be studied by students from the lowest to the highest level. The students are expected to be able to speak English, but many students have difficulty in speaking English and conveying their ideas. The problem is the students' lack of vocabulary. So, they find it difficult to communicate using English (Rifdinal, 2021). Vocabulary is one of the important things in the teaching and learning process of English (Indrasari, Novita, & Megawati, 2018).

Vocabulary is the basic of how well the students do in four language skills such as listening, writing, reading, and speaking (Renandya & Richards, 2002). On the other hand, vocabulary is a large collection of words (Thornbury, 2002). In other aspects, vocabulary plays an important role in students' language learning. The students can be succeed in their academic and social abilities by learning new words in a new language (Novita, 2014). The students need to understand, know, and know-how they relate one word to another when they make sentences or make dialogues to communicate. Vocabulary support for students to understand the language easily. If students, especially young learners, want to be

competent in English, they must be familiar with and learn a lot of English vocabulary (Indrasari, Novita, & Megawati, 2018).

In Indonesia, the Ministry of Education and Culture has made many efforts to familiarize students with English, because English is considered a foreign language that must be learned. The students are required to understand English texts both in written and spoken form. The problem in learning English for students is the lack of vocabulary. Based on observations at school, there are several reasons that make vocabulary learning difficult. Many students spend their time learning new vocabulary, but they still complain that it is not easy to remember English words and there is no way to avoid forgetting. This means that students will not be able to speak, read, write and even listen in English. In other words, mastering the right methods and techniques in learning vocabulary is very important for the success of learning English (Shi, 2017).

However, in terms of learning English, many students are sometimes not interested in the material presented and are still confused about learning English. This is due to traditional learning methods, namely teachers who do not support students to practice actively in class. This means that students cannot express their feelings in English directly, and that is the main problem that students face in class. Therefore, the teacher must be creative to

decide the right strategy which helps the students to develop their vocabulary knowledge.

In today's modern era, technological developments are quite rapid. In education, technology is an additional option for student learning methods. Technology has taken part in education, the role of technology in education is fourfold: including as part of the curriculum, as an instructional delivery system, as a means to assist instruction, and also as a tool to improve the entire learning process. (Raja & Nagasubramani, 2018). In learning, the use of media is an effort to create quality and support the learning process. So that students can enjoy participating in learning activities. Very helpful in conveying information and can help simplify the teaching process, as well as enable teachers to practice the principles of illustration teaching and learning objects (Matra, 2020). Media is one thing that can convey information between the source and the recipient (Indrasari, Novita, & Megawati, 2018).

The use of learning media that uses technology in the form of applications, makes it easier for students to understand vocabulary and also makes learning fun. Today, many students use mobile applications (apps) to support their language learning both inside and outside the classroom (Klimova, 2020). In this case, there is an application-based learning media that can help students learn English vocabulary. One application that is easy for students to use to learn especially English is Duolingo. The reason why the writer chose the Duolingo application, because Duolingo is a free gamified e-learning tool that allows users who want to learn to speak one of the following languages, such as English, Italian, French, and so on. Duolingo itself is often downloaded on mobile phones or registered on computers, so users will practice it anytime and anywhere (Lionetti, 2013).

Duolingo has a very motivating learning system. It uses strategy game mechanics to create incentives to keep learners learning. It is built very much like a computer game where the participants have to pass certain levels. A learner passes through the levels of the language tree. The following lesson will be opened after a learner has mastered the previous material. Users can complete various types of exercises including multiple-choice,

writing, and also speaking through the microphone. Duolingo mainly uses exercises and repetitive exercises in lessons (Rifdinal, 2021). The writer hopes that the Duolingo application has effectiveness in helping students learn English vocabulary and becomes a fun learning medium for students so that students want to continue learning vocabulary without feeling bored.

Effectiveness is a condition for achieving planning objectives. A learning media can be said to be effective if it has criteria, including the ability to influence, change or be able to bring results. When we formulate instructional goals, effectiveness can be seen from how far these goals are achieved. The more goals achieved, the more effective the learning media. In the learning process, effectiveness cannot be separated from quality activities in planning, implementation, and evaluation carried out by teachers. This will be a measure of the teacher's success in the classroom. If it is associated with learning outcomes, then learning can be said to be effective if there is a positive change in students and the acquisition of learning outcomes increases (Rifdinal, 2021). The problem of this research is the effectiveness of the Duolingo application as a medium of learning English vocabulary for students.

Based on the explanation above, the writer wants to apply the Duolingo application which can help students to learn their English vocabulary and also the writer wants to investigate and ensure that the Duolingo application is effective in helping students learn English vocabulary for students in class XI MIPA 3/4/5 MAN 3 Medan in the 2021/2022 academic year. The reason the writer chose the school and class is that the location of the school is easily accessible, requests from the school and have adequate facilities and the availability of time and funds.

II. SUPPORTING THEORIES

1. Effectiveness

According to Subagyo (2000), effectiveness is defined as: "effectiveness is the suitability of the output with the objectives applied". While the definition of effectiveness according to Aras (2003) is a condition where the ability of a system is in accordance with the wishes of the user. Meanwhile, according to R.

A Supriyanto (2000) suggests that effectiveness is if a unit can run well so that it can achieve the expected results or goals. And according to Mardiasmo (2002) suggests that effectiveness is a measure of the success or failure of an organization to achieve its goals. From the understanding of these experts, it can be concluded that effectiveness is a measure that states how far the desired target is based on the results that have been achieved compared to the desired target.

2. Duolingo Application

Duolingo is a free application created by Luis Von Ahn and Severin Hacker in November 2011. Its slogan is "Free language education for the world." According to its website, it has more than 30 million registered users. It offers several languages for English speakers as well as others for non-English speakers (Munday, 2016). As one of the language learning applications, Duolingo can help someone to develop their vocabulary knowledge in communication. Through the process of the Duolingo application, the students gain new words easily based on their own will. Paula (2016) mentioned that "Duolingo is an application for cell phones or computers. It is one of the most famous and praised language teaching applications on the market. It works in a very simple way and it is very useful for those who are studying English and several other languages, such as Spanish, Italian, German, and Turkish. It can be used for at least five minutes a day, and the users define how they would like to practice it right from the beginning. The four skills, reading, writing, listening, and speaking, are present during the learning process in Duolingo, through the elaboration of questions, affirmative and negative sentences, small texts and excerpts to be heard and transcribed, and it is also possible to the students to record their own pronunciation to assess their oral performance."

Moreover, Duolingo was provided vocabulary practice and gave opportunities for students to evaluate their knowledge and identify the need to continue improving (Gauget, Cesar, Castro & Yicely, 2018). It means that Duolingo is presented as an educational tool that can be integrated into the classrooms in order to provide a new learning experience for the student, and it is based on content quality, feedback, and motivation.

Thus, the Duolingo application is important for the students to learn a language in order to increase their motivation and make this application more enjoyable. Using Duolingo in learning English can gain positive feedback from both students and teachers. In addition, the students who need to develop their vocabulary may use Duolingo application useful and interesting to use.

As the conclusion that Duolingo is either of English teaching-learning media, which is able to assist the students in learning English which is more enjoyable because it is such as the game-based free learning platform, that can be used as educational technology in school.

A. The Characteristics of Duolingo Application

Duolingo as a free language-learning application can offer a wide range of features that requires an internet connection during using this application. Here are the characteristics of Duolingo application, such as:

1. **Achievements** is a Duolingo application feature given out when the learners or users have been completed the lessons through best effort.



1.1 Figure Achievements

2. **Lingots** is a small jewel icons that the learners have completed the activities and level successfully to get "lingots". It can be changed for bonus extrapractices.



Figure 1.2 Lingots

3. **Crown Levels** are new feature in Duolingo application. Each skill has a “Crown Levels”. When you have completed a skill, you will get a crown, and continued to new skills



Figure 1.3 Crown Levels

- 4) **Daily Goal** is about appreciation for the learners who have completed a daily goal. Duolingo application gives a rewards to them with surprising sounds and unique pictures and make the learners feel more enjoyable.

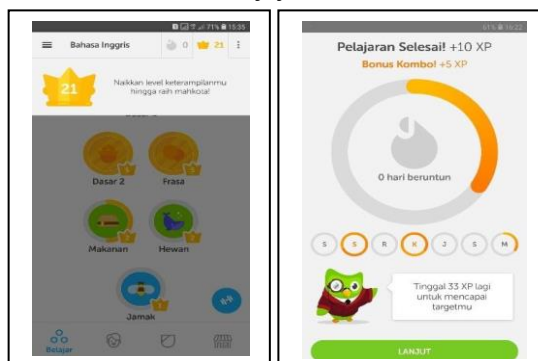


Figure 1.4 Daily Goal

- 5) **Clubs User Networking** is a feature for learners to communicate and sharing with other users about language learning. It also

can competetogain (10) XP sand see their friends” score

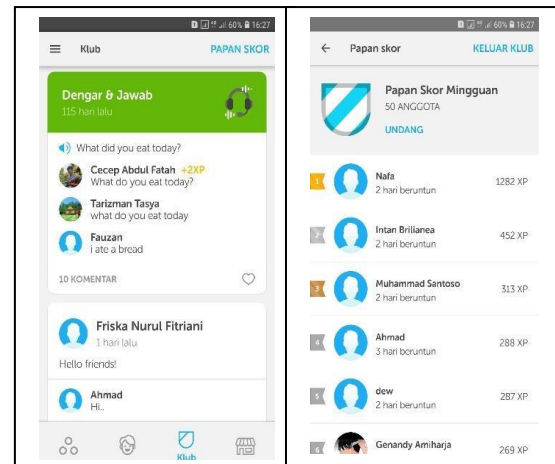


Figure 1.5 Club Users Figure 1.6 Score Board

Duolingo application also provides the learners with various types of exercises within a lesson or unit, such as:

- 1) **Vocabulary**, in which the users see a picture, and be asked to choose it with correct answer.
- 2) **Pronunciation** in which the users will be asked to repeat or say a sentence what they hear.
- 3) **Listening**, in which the users will hear an audio clip of a word or sentence and have to type it correctly.
- 4) **Translation** in which the users will be asked to translate a word or a sentence into the language they want to know or learn.

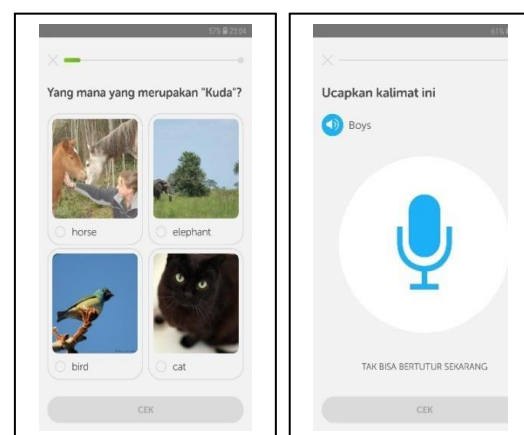


Figure 1.7 Vocabulary Figure 1.8 Pronunciation

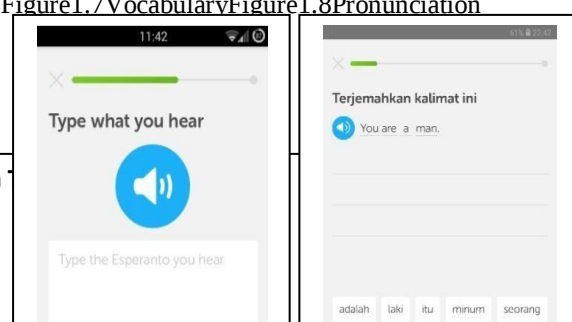


Figure 1.9 Listening Figure 1.10 Translation

B. Target Audience of Duolingo Application

As Lionetti (2013) states that Duolingo has targeted their 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. The audience using this tool should be familiar and have accessibility to an iPhone, iPad, any Android device, or a computer to go online and use this online gamified e-learning. The audience looking to use Duolingo should have an account of some sort through either Facebook or an e-mail address to create an account on Duolingo. There is no specified age requirement to use Duolingo nor are there any pre-course requirements or knowledge needed to begin a language course. Duolingo is for all users whether they are beginner's moderate or intermediate students. The e-learning tool has allowed those that are advance to skip lessons and learn to their request. Whether you have a busy schedule or not, the audiences can access the course on their own time and work through the course at their own pace completing the language course as they wish.

C. The Objectives of Duolingo Application

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

- 1) To teach users to speak another language for free
- 2) To understand and be able to speak a phrase or sentence in another language
- 3) To listen to a phrase or sentence in your target language and type it out
- 4) To be able to write the correct words to the matching pictures

- 5) To develop the skills to translate your words and sentences from your chosen language to English
- 6) To be able to translate words and sentences from English to your chosen language
- 7) To help users online to translate as much of the web as possible
- 8) To provide a gamified learning experience for users
- 9) To provide our clients with the most accurate translation to their webpage

D. The Types of Duolingo Task

Wagner et al (2015) said that "there are four separate tasks on Duolingo, such as vocabulary task, a listening and transcription task, a sentence completion task, and a speaking task. As indicated earlier, because the test is computer-adaptive, the order and number of times each task appears may differ for each test taker on the basis of his or her responses."

Vocabulary

In the vocabulary assignment, a number of words on the boxes on the screen can be seen by the test taker. After that, the words which are proper in English words should be selected by the test taker also. It has been ruled that the test taker only has one minute in completing the assignment.

1. Listening and Transcription

Listening and Transcription has the purpose to assess the test taker's ability in listening. The test taker must type the sentence that they heard which is presented aurally to them. Usually, this assignment is absolutely a dictation model. The test should complete the assignment and it can hear the audio text up to three times. The test taker only has one minute to finish this assignment.

2. Sentence Completion

Sentence completion is the task that is labeled to complete sentences. Here, the test taker will present some short text arranged in several sentences. There are five blank spaces in the assignment and it should be chosen by clicking on the blank space to answer the question from a list of eight answers that are provided. This assignment is identic to a selected response or rational close task. In completing this assignment, it has the rule that the test taker only has three minutes.

3. Speaking

The last task is speaking. In this task, the test taker will give instructions on the screen such as "Speak this sentence." Then, the microphone icon should be clicked by test takers and the written sentence should be read aloud together with clicking the icon. This task also has the rule that it only has one minute to complete it.

There are some tasks that provide in Duolingo Application, but this study just focuses on the vocabulary task that is appropriate to this study design.

E. The Advantages and Disadvantages of Duolingo

As Mulya et al (2016) stated Duolingo Application also has advantages and disadvantages, as follows:

The Advantages of Duolingo

Duolingo is a game-based platform for learning foreign languages. It can be accessed in browser-based applications or an Ios, Android, or Windows Phone application. Duolingo has been released to use a compound of activities; students listen, transcribe, speak, and translate in a simple interface as they work through words and phrases. Duolingo lets teachers track students' language learning progress easily. Students distribute their progress in language learning directly with their teacher, who can track their progress through a dedicated dashboard. By being able to track their students' progress, teachers can plan lessons, doing Duolingo skills as homework, and extra awards to get credit points accordingly.

It also makes the students keep going and beat their previous records, and the students can also compete with each other with their friends in the classroom. The students also are able to gain experience points (XP) to measure how much they do the task in Duolingo, and pass through different levels and can differentiate with their friends, then they earn lingots with which they can purchase items and bonus lessons or change the icon to make their Duolingo more interesting. Duolingo itself can be accessed on PC and also on android by downloading it on the Play Store. The interface is explicit and very easy to use. There is also a nice balance between translation, listening, matching words, and speaking exercises. The

voice recognition program is not too bad, and the students still can hear what the speaker said.

The Disadvantages of Duolingo

Duolingo uses a computerized voice system for all of its listening exercises, so the students are not introduced to how the language really sounds. The voice is dry, non-rhythmical, and it can hear fluently, the most important thing in their language learning is actually speaking with native speakers of their target language. There is really no substitute for it and currently, Duolingo has no way of allowing people to converse with any native speakers.

Duolingo does not offer any explanation of grammatical structures as part of its dashboard. Grammar is a significant part of language learning and it makes the students have some difficulties doing the task.

F. Learning Step by Using Duolingo Application

Related to learning activities that have been done, this research has to use Duolingo Application as the teaching-learning media. There were several steps in running Duolingo Application, as follows:

- 1) Opening the lesson with regards.
- 2) Leading one student to guide a common prayer.
- 3) Checking the attendance list by calling their name one by one.
- 4) Motivating the interest of students and giving good words
- 5) Giving the students a chance to exhibit what will be done in using the Duolingo application
- 6) Explaining about Duolingo application. Then, the teacher gave examples of how to use the Duolingo application.
- 7) Asking the students to join the class in Duolingo Application
- 8) Giving one assignment as an example to the students so that they do their task and the teacher could be seen their assignment by seeing on the screen.

4. Vocabulary

The Definition of Vocabulary

According to Hornby in Oxford Advanced Learner's Dictionary (2000), vocabulary can be defined as all the words that a person knows or uses or all the words in a particular language; the words that people use when they are talking about a particular subject. As one of the language elements, vocabulary can help

someone to understand clearly in communication. Through the process of recognizing the words in English, the students gain the information easily based on their own words. When students build vocabulary mastery, they can more effectively communicate their ideas, knowledge, and voice, because they learn vocabulary with practice that is useful to the individual needs and English developmental skills.

According to Scrivener (1998) "vocabulary is a much more powerful carrier of meaning compared to grammar because we can get our message over with vocabulary and without grammar, but we cannot communicate unless we use the necessary words in our patterns and structures." So, we can communicate with other if we know the meaning although we do not sure to communicate with sentences structurally. David Wilkins has claimed that "without grammar very little can be conveyed, without vocabulary nothing can be conveyed". This is according to his statement that learning vocabulary is very important.

Meanwhile, Jean & Geva (2009) have stated that vocabulary or knowledge of the meaning of words is perhaps the most obvious language skill that influences reading development. This is quite clear if we try to understand a sentence in which most of the words that we do not get the meaning, perhaps the page from an advanced physics text. In reading, vocabulary knowledge has an important role, it is starting in the early grades when it influences the development of word reading skills.

Based on the explanations from some experts that have been stated in the previous paragraph, the writer could conclude that comprehending the vocabulary is very important because it is the primary element in language, especially in English.

Learning Vocabulary

Learning is something in which all students have an understanding and in which they have all participated (Hulme, Agnes, Norris, Lucy, & Jim, 2015). Often the students spend their time to improve understanding and skills that takes place in the formal settings of the educational systems, such as schools. Learning should make an effect on their own potential for each individual. Students who are active in the learning process will be more to attain success. According to Brown and Payne,

there are five essential steps in vocabulary learning:

1) Encountering new words

The first step, essential step, for vocabulary learning, is encountering new words, that is, having a source for words. The student strategies here included "learning new words by reading the book," "listening to TV and radio," and "reading newspapers and magazines."

2) Getting the word form

The second step essential to vocabulary learning appears to be getting a clear image – visual or auditory or both – of the form of the vocabulary item.

3) Getting the word meaning

The third essential step in the learner's reported strategies is the one that is most often associated with the idea of vocabulary learning: having the word meaning.

4) Consolidating word form and meaning in memory

The fourth necessary step revealed by Brown and Payne's analysis requires the consolidation of form and meaning in memory.

5) Using the word

The final step in learning words is using the words. Some would argue that this step is not necessary if all that is desired is a receptive knowledge of the word (Hatch & Brown, 1995).

In this section, when all the students had completed one of the five essential steps which students take in vocabulary learning. They felt confident about knowing the vocabulary being tested. Although there are some activities and strategies that students use at each step, the necessity of the steps should be constant. The students need all five essential steps to have the full vocabulary knowledge they want to learn. Thus, learning is something that occurs naturally. The students will most likely not possess one style, but the teachers may be able to see their own learning style. Many people recognize each student prefers different learning styles. It is very important to develop their abilities to use as many learning styles as possible, helping them to succeed.

III. RESEARCH METHODOLOGY

This study uses survey research methods, using a questionnaire instrument containing interviews and tests. This study focused on the

effectiveness of the Duolingo application in helping students in class XI MIPA 3/4/5 MAN 3 Medan. According to Sugiyono (2017), the survey method is a method used to find the effect of certain treatments. The survey method is used to obtain data from certain natural (not artificial) places, but researchers carry out treatments in data collection, for example by distributing questionnaires, tests, interviews, structured and so on (the treatment is not like in the experiment). So, the writer uses a survey method to determine the effectiveness of the Duolingo application in helping students in class XI MIPA 3/4/5 MAN 3 Medan in learning English vocabulary.

1. Population and Sample of the Research Population

The population of this study was taken from students of class XI MIPA 3/4/5 MAN 3 Medan in the academic year 2021/2022. The population taken is 108 students consisting of 3 classes as shown in the table below:

Table 1.1. The Total Number of Population

No	Class	Student
1	XI MIPA 3	36
2	XI MIPA 4	36
3	XI MIPA 5	36
Total		108

Sample

Sugiyono (2007), states that "the sample is part of the number and characteristics possessed by the population". The writer took class XI MIPA 3/4/5 as a sample consisting of 5 students in each class XI MIPA 3/4/5 with a total of 15 students as a sample which is shown in the following table:

Table 1.2. The Total Number of Sample

No	Class	Student
1	XI MIPA 3	5
2	XI MIPA 4	5
3	XI MIPA 5	5
Total		15

2. Location and Time

The research was conducted at MAN 3 Medan. Located at Jalan Defense Patumbak No. 99, Ex. Timbang Deli, Kec. Sandpaper Medan, Deli Serdang Regency, North Sumatra. The study was conducted on September 9, 2021 until September 12, 2021. The reason for choosing the school was because the location of the

school was easily accessible and had adequate facilities and availability of time and funds.

3. The Subject and Object of the Research

1) Research Subject

The subjects of this study were students of class XI MIPA 3/4/5 MAN 3 Medan.

2) Object of research

The object of the research is the effectiveness of the Duolingo application in helping students learn English vocabulary.

4. The Instrument of Collecting Data

The writer uses a Google Form questionnaire, students only provide statements and answers in the questionnaire that has been given. First, the writer met the students who were the research samples to get to know them and asked for their cellphone/Whatsapp numbers to form a group. The purpose of creating a Whatsapp group is to provide direction and input about the research that will be carried out. The writer provides information related to research or instructions during the research test. Then, the writer gives them a google form link that they will fill out. On the Google form available interviews and test questions consisting of 7 interview questions and 20 test questions. On the Google form, there are names, school origins, classes, interviews, and test questions. After all, students filled out the questionnaire form, the writer collected data for the students to be examined.

5. The Administration of the Study

The writer conducted research in class XI MIPA 3/4/5 MAN 3 Medan for the academic year 2021/2022 by giving a questionnaire containing interviews and online tests. The test starts on September 10, 2021 from 14.00 WIB – 23.00. With this time period, it is hoped that students can adjust their time to fill out the questionnaire. Whenever students are, they can fill out a questionnaire which is an online form. First, each student has a link to enter the google form questionnaire. When students start taking the test, they have to fill in their bio on the Google form. Then, they answered the questions that were already available in the questionnaire. Actually, currently the students of MAN 3 Medan are in online learning, this is due to the corona virus pandemic. They study and complete their assignments online, so the writers ensure the best time to do this research. The writer will not let them not enjoy the exam

by forcing them. This makes the writer decide to provide sufficient time to fill out the questionnaire for students. The hope is that students can manage their time and enjoy exam research. The steps before conducting research are as follows:

1. The writer joins their class Whatsapp group.
2. The writer provides instructions about the Google form and distributes the google form questionnaire link.
3. The time allocation is from 14.00 WIB to 23.00 WIB.
4. After the time is over, the questionnaire will automatically be closed.
5. After the students finished working on the questions, the writer collected the answer data from the questionnaire.

6. Analysis Data

In this study, contains interviews with 7 questions and test questions as many as 20 questions. Interviews aim to get statements or opinions from students and test questions aim to get results while they are studying. The writer gives a score of 5 on each test question and there will be an assessment and predicate of how many total scores are obtained from each student.

The following is a table of assessments and predicates from the lowest to the highest.

Table 2.1. Level of Achieving

No	Range	Category	Level
1	81-100	Good	Able
2	66-79	Enough	Able
3	50-65	Poor	Unable
4	0-49	Very Poor	Unable

The writer calculates each percentage of students' opinions and statements in interviews and also each percentage of students in their vocabulary ability test after using the Duolingo application using the formula from Sugiono (2004) as follows:

$$P = \frac{F}{N} \times 100 \%$$

In which:

- P = Percentage of students' result
F = Frequency of capable students
N = Number of students
100% = Constant Value

The writer analyzes the students' abilities by identifying their correct answers. So, if a

student gets a score of 0-49 then it is included in the very poor category. If students get a score of 50-65, they are in the poor category. If students get a score of 66 – 79, they will fall into the moderately capable category. And if students score 80 – 100, they will fall into the very capable category.

IV. DISCUSSIONS AND FINDINGS

1. Findings Data

In this chapter, the writer will explain the statements and grades of students in class XI MIPA 3/4/5 MAN 3 Medan. In the data findings, after getting data from questionnaires that have been filled out by students, the writers analyze the effectiveness of the Duolingo application in helping students learn vocabulary. In the discussion section, the writer previously discussed the concept that the writer would do to find student data. After the tests were collected, the writer began to analyze their answers.

The writer completed the research and got the results from the students' answers. Findings and discussions were taken from the answers they filled in the questionnaire. This is based on the student data below:

1) Interview Result

Interviews were used to get students' opinions or statements about the Duolingo application. There are seven questions in the questionnaire. This can also be seen in the following percentage table data:

**Table 3.1. The Question:
Do you know the Duolingo app?**

Option	Frequency	Percentage
Yes	15	100%
No	0	0%
Possible	0	0%
Total	15	100%

From the table above, all students answered YES (agree) with a percentage of 100%, and there were no students who answered NO (disagree) and answered POSSIBLE (neutral) with a percentage of both 0% for the question stating "Do you know the Duolingo app?".

Table 3.2. The Question:

Do you often learn English, especially vocabulary using the Duolingo application?

Option	Frequency	Percentage
Yes	12	80%
No	1	6.7%
Possible	2	13.3%
Total	15	100%

From the table above, there are 12 students who answered YES (Agree) with a percentage of 80%, there was 1 student who answered NO (disagree) with a percentage of 6.7% and also there were only 2 students who answered POSSIBLE (neutral) with a percentage of 13.3. % for questions stating “Do you often learn English, especially vocabulary using the Duolingo application?”.

Table 3.3. The Question:
Do you like using the Duolingo application in learning English, especially vocabulary?

Option	Frequency	Percentage
Yes	15	100%
No	0	0%
Possible	0	0%
Total	0	100%

From the table above, all students answered YES (agree) with a percentage of 100%, and no student answered NO (disagree) and answered POSSIBLE (neutral) with a percentage of both 0% for the question stating "Do you like using the Duolingo application in learning English, especially vocabulary?".

Table 3.4. The Question:
Are you more motivated to learn English by using the Duolingo app?

Option	Frequency	Percentage
Yes	14	93.3%
No	0	0%
Possible	1	6.7%
Total	15	100%

From the table above, there are 14 students who answered YES (Agree) with a percentage of 93.3%, no student answered NO (disagree) with a percentage of 0% and also there was only 1 student who answered POSSIBLE (neutral) with a percentage of 6.7 % for questions stating “Are you more motivated to learn English by using the Duolingo app?”.

Table 3.5. The Question:

Does learning English using the Duolingo application make it easier for you to learn vocabulary?

Option	Frequency	Percentage
Yes	15	100%
No	0	0%
Possible	0	0%
Total	15	100%

From the table above, all students answered YES (agree) with a percentage of 100%, and no student answered NO (disagree) and answered POSSIBLE (neutral) with a percentage of both 0% for the question stating "Does learning English using the Duolingo application makes it easier for you to learn vocabulary?".

Table 3.6. The Question:
Does the Duolingo app help you to add some new vocabulary?

Option	Frequency	Percentage
Yes	14	93.3%
No	0	0%
Possible	1	6.7%
Total	15	100%

From the table above, there are 14 students who answered YES (Agree) with a percentage of 93.3%, no student answered NO (disagree) with a percentage of 0% and also there was only 1 student who answered POSSIBLE (neutral) with a percentage of 6.7 % for questions stating “Does the Duolingo app help you to add some new vocabulary?”.

Table 3.7. The Question:
Does the Duolingo app allow you to study anytime and anywhere?

Option	Frequency	Percentage
Yes	14	93.3%
No	0	0%
Possible	1	6.7%
Total	15	100%

From the table above, there are 14 students who answered YES (Agree) with a percentage of 93.3%, no student answered NO (disagree) with a percentage of 0% and also there was only 1 student who answered POSSIBLE (neutral) with a percentage of 6.7 % for questions stating “Does the Duolingo app allow you to study anytime and anywhere?”.

2) Test Result

Table 4.1. Student Percentage Result

No	Name	Score	Category	Level
1	Subject 1	90	Good	Able
2	Subject 2	65	Poor	Unable
3	Subject 3	95	Good	Able
4	Subject 4	95	Good	Able
5	Subject 5	80	Enough	Able
6	Subject 6	75	Enough	Able
7	Subject 7	85	Good	Able
8	Subject 8	90	Good	Able
9	Subject 9	90	Good	Able
10	Subject 10	80	Enough	Able
11	Subject 11	85	Good	Able
12	Subject 12	85	Good	Able
13	Subject 13	75	Enough	Able
14	Subject 14	75	Enough	Able
15	Subject 15	65	Poor	Unable

By knowing the results of the students, the writer found 8 students who scored in the very capable category, 5 students who scored quite well, 2 students who got the category of being less able to afford, and no students who scored in the very poor category. The percentage of student learning outcomes in class XI MIPA 3/4/5 MAN 3 Medan is calculated using the formula below:

$$P = \frac{F}{N} \times 100 \%$$

$$P = \frac{13}{15} \times 100 \% = \frac{1300}{15}$$

$$P = 86.6 \%$$

With:

- P = Percentage of students' result
F = Frequency of capable students
N = Number of students
100% = Constant Value

This means that 86.6% of students in class XI MIPA 3/4/5 MAN 3 Medan, the process of learning English vocabulary is helped by the Duolingo application, and only 13.4% of students are still not helped in the process of learning their English vocabulary. The following is a table of the percentage of students who are helped and not helped in their English vocabulary learning process using the Duolingo application in class XI MIPA 3/4/5 MAN 3 Medan.

Table 4.2. Helped and Unhelped

No	Category	Total	Percentage
1	Helped	13	86.6%
2	Unhelped	2	13.4%
	Total	15	100%

2. Discussion

According to the data above, from the results of interviews in class XI MIPA 3/4/5 MAN 3 Medan, it can be concluded that most students answered in the YES category (agree) and only a few students answered NO (disagree) and POSSIBLE (neutral) in the questionnaire. This means that students agree that the Duolingo application can help or motivate them in learning English, especially learning vocabulary.

There are 13 students with a percentage of 86.6% in class XI MIPA 3/4/5 MAN 3 Medan who are helped by the Duolingo application in their English vocabulary learning process. And there are only 2 students with a percentage of 13.4% in class XI MIPA 3/4/5 MAN 3 Medan who are still not helped by the Duolingo application in their vocabulary learning process. It was proven that the 13 students were able to increase their vocabulary by learning to use the Duolingo application.

After finding the data, the writer asked about their experience while doing the test. Some students said that the test was not easy, because there were some questions that they could not answer. In other words, students generally do not like English subjects and lack vocabulary mastery, so they have difficulty solving them.

The writer conducted interviews with students who got the highest score. He shared that his score was related to his hobbies of practicing English by reading several books, listening to western songs, and also playing English games. When using the Duolingo app, he practices English, he gets new vocabulary and it helps him identify each question given. That is, simple activities can be useful to practice our English and can be an example for students who want to improve their vocabulary. By regularly reading English books and listening to music, and playing games that provide positive things such as knowledge and training in English, the writer believes it will open students' minds to get new vocabulary and understand the meaning of sentences.

From the analysis of the data above, the writer can conclude that the Duolingo application can have a significant influence on the students' learning process of English vocabulary. In addition, the Duolingo application can be applied in all subjects but depends on the needs of students. That is, the

use of the Duolingo application shows a positive influence to be applied to students, especially students in class XI MIPA 3/4/5 MAN 3 Medan in the 2021/2022 academic year in helping them learn English, especially learning vocabulary.

V. CONCLUSIONS AND SUGGESTIONS

1. CONCLUSIONS

Based on the results of research that has been carried out in class XI MIPA 3/4/5 MAN 3 Medan which aims to determine the effectiveness of the Duolingo application in helping students learn English vocabulary, the writer get the results that the Duolingo application is able to have a significant effect on students' vocabulary. Students are more interested in learning vocabulary by using the Duolingo Application, this can be seen from their answers to the questionnaire that has been given by the writer. Most of them agree that the Duolingo App can help them and make their learning more interesting than ever.

As a conclusion from the whole chapter, it can be concluded that the Duolingo Application has effectiveness and has a positive influence on the students' English vocabulary learning process, especially for class XI MIPA 3/4/5 MAN 3 Medan in the 2021/2022 academic year.

2. Suggestion

After doing this research, the writer thinks that teachers should make their teaching more creative to improve students' vocabulary mastery and to avoid boredom in the classroom. In this digital era, teachers have a privilege because there are many appropriate media that can be used to boost their teaching. The using of Duolingo is recommended because it is proven to help the process of learning English vocabulary for students in class XI MIPA 3/4/5 MAN 3 Medan in the 2021/2022 academic year. This is expected to make students more interested in learning vocabulary.

The students now have a new medium for learning English vocabulary, namely Duolingo, a game-based language learning application that makes their learning more fun. There are also other language features that you can learn besides vocabulary, such as pronunciation, grammar, simple translation, and simple writing. Because it can be accessed anywhere and anytime, students also have an obligation to

learn vocabulary not only depending on the material given in class; however, they should practice more at home.

This research is expected to provide new information for those who read it and also as a reference for other writers. Because there may be shortcomings in this research, the writer hopes that in the future there will be other writers who conduct research on the same topic or to enrich teaching and learning knowledge.

REFERENCES

- Guaquet, Cesar & Castro, Angela Yicely. 2018. *The Use of Learning Apps as a Didactic Tool for EFL Vocabulary Building*. ERIC Journal.
- Hatch, E., & Brown. S. 1995. *Vocabulary, Semantics, and Language Education*. New York: Cambridge University Press.
- Hornby, A.S. 2000. *Oxford Advanced Learner's Dictionary*. Oxford University Press.
- Hulme, Agnes, Norris, Lucy, & Donohue, Jim. 2015. *Mobile Pedagogy for English Language Teaching: A Guide for Teachers*. ELT Research Papers. London: British Council.
- Indrasari, A., Novita, D., & Megawati, F. 2018. *Big Book: Attractive Media for Teaching Vocabulary to Lower Class of Young Learners*. Journal of English Educators Society, 141-154.
- Jean, M., & Geva, E. 2009. *The development of vocabulary in English as a second language children and its role in predicting word recognition ability*. Applied Psycholinguistics. 153-185.
- Klimova, B. 2020. *Benefits of the Use of Mobile Applications for Learning a Foreign Language by Elderly Population*. 24th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems.
- Lionetti, L. 2013. *Duolingo*. From: <https://lclionetti.files.wordpress.com/2013/11/duolingo-e-learning-tool.pdf>
- Matra, Sarlita D. 2020. *Duolingo Applications as Vocabulary Learning Tools*. Journal of English Literature, Linguistic, and Education, 46-52.

- Mulya, A., & Refnaldi. 2016. *Using School.Duolingo.com as an Alternative E-Learning at Senior High School for Teaching and Learning English Online*. Journal of English Language Teaching. 2302-3198.
- Munday, P. 2016. *The Case for Using Duolingo as Part of the Language Classroom Experience*. AIESAD Journal, 83-101.
- Novita, D. 2014. *The Use of Morphemes: An Alternative Way to Increase The Mastery of Students' Vocabulary*.
- Raja, R., & Nagasubramani, P. C. 2018. *Impact of modern technology in education*. Journal of Applied and Advanced Research, 33-35.
- Renandya, W. A., & Richards, J. C. 2002. *Methodology in Language Teaching*. New York: Cambridge University Press.
- Riduwan. 2007. *Belajar Mudah Penelitian*. Bandung: Alfabeta.
- Rifdinal, R. 2021. *Keefektifan Penggunaan Duolingo Dalam Pembelajaran Kosakata Bahasa Inggris*. Jurnal Manajemen Pendidikan Dan Ilmu Sosial.
- Setyowati, L. 2017. *Pemanfaatan Teknologi Aplikasi Berbasis Android sebagai Media Belajar dan Ajar Vocabulary untuk Guru Bimbel MIPA dan Bahasa Inggris pada Sakinah Courses Jatimulya-Bekasi*. E-DIMAS: Jurnal Pengabdian kepada Masyarakat. 2528-5041.
- Shi, Xue. 2017. *Application of Multimedia Technology in Vocabulary Learning for Engineering Students*. iJET Journal.
- Sugiyono. 2004. *Metode Penelitian*. Bandung: Alfabeta.
- Sugiyono. 2017. *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Thornbury, S. 2002. *How to Teach Vocabulary*. Malaysia: Pearson Education.
- Wagner, E., & Anthony J. 2015. *Language Assessment Quarterly*. 320-331.