Improving the Students' Vocabulary Mastery by Using Duolingo And Cake Applications

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Abstract

The study concentrated on using the Cake and Duolingo apps to help students in the Rebecca Course and Center develop their vocabulary. The purpose of this study was to answer the following question: "Does using the Cake and Duolingo apps improve students' vocabulary, and which app is more significant at the Rebekka Course and Center?" The main goal of the study was to determine which application is more relevant at the Rebekka Course and Center and whether the Duolingo and Cake programs help students' vocabulary. This research used Classroom Action Research (CAR). The subject of the research was Bremen and Frankfurt class and the total of them was 30. This research used two cycles namely cycle I and cycle II and every cycle had four steps namely planning, implementing, observing and reflecting. The observation was analyzed qualitatively, the test was analyzed quantitatively. In cycle l using the Duolingo application the students mean score was 71.3, while mean score of the students' in cycle II was 85. It can be concluded that the Duolingo application improved the students' ability in vocabulary students learning outcomes improve. In cycle l using the Cake application the students mean score was 67.3, while mean score of the students' in cycle II was 83.3. It can be concluded that the Cake application improved the students' ability in vocabulary students learning outcomes improve. teaching vocabulary using Duolingo was more significant in increasing students' vocabulary than the Cake application. This is proven by the average score in the second cycle for the class taught by Duolingo, which was 85. Meanwhile, the class taught with the Cake application had an average score of 83.3.

Introduction

Language plays a crucial role in various aspects of human life and interactions. It serves as a means for conveying information, expressing desires, and comprehending the world around us. Language as a system of communication, encompassing both spoken and written forms, that is used by a particular group of people. Language is communication conveyed through expression as a means of communication in specific situations in various activities (Noermanzah, 2019), In the KKBI dictionary, language is a random system of sound symbols utilized by individuals in a community to collaborate, communicate, and recognize oneself. Furthermore, according to Sudaryanto in Suhandra's study (2019), it is said that language is not merely a communication tool used by humans, but it is also capable of conveying human thoughts and feelings.

English has become one of the most influential languages globally. Currently, English is highly common and even necessary for everyone worldwide to communicate with other countries (Ningsih, 2021). English has emerged as the primary language used worldwide, and proficiency in English is not only considered an international communication tool but also an added value for individuals (Riani et al., 2023). In Indonesia, English is not the first or second language but rather holds the status of a foreign language (Mika and Mardiana, 2023), and many Indonesians incorporate English into their daily lives. Additionally, many schools have adopted English as their main medium of instruction, exemplifying the important role English plays in the field of education.

Proficiency in English has become a prerequisite for individuals seeking to work or study abroad. The acquisition of English language skills typically encompasses four fundamental aspects: (1) speaking, (2) writing, (3) listening, and (4) reading.In addition to these four core skills, vocabulary mastery is an indispensable component in the process of learning English. The author firmly believes that vocabulary holds the utmost importance when acquiring proficiency in a foreign language.According to Holidazia&Rodliyah (2020). Learning a new language cannot be started if students do not know the vocabulary. Thus, vocabulary becomes the main thing in language learning. this is also in line with the opinion of Sucandra, et al (2022) that vocabulary skills are very necessary for learning English.Without a strong grasp of vocabulary, the aforementioned four language skills cannot be effectively developed. Consequently, employing appropriate strategies becomes crucial in facilitating the teaching and learning of vocabulary among students.

Despite the fact that English is considered a language that must be mastered in this era, many individuals, including students, still encounter difficulties in learning English. Several factors contribute to this challenge, such as an unsupportive learning environment for foreign languages, apprehension regarding vocabulary pronunciation, and a lack of interest in learning a foreign language.

With the development of information and communication technology, the use of media as an educational tool has significantly increased. Learning aids can take the form

of traditional media, such as books, chalkboards, or projectors, as well as digital media, such as videos, audios, computer simulations, and educational software.

Improving vocabulary skills is one of the main objectives in students' language learning. In today's digital era, there are various applications that can be used to help students improve their vocabulary skills. Two popular apps are Duolingo and Cake. Both of these applications offer different approaches to improving students' vocabulary skills.

The use of applications in language learning has become an increasingly popular trend. Apps like Duolingo and Cake offer interactive learning experiences that are easily accessible on mobile devices. Both of these applications have features specifically designed to help students improve their vocabulary skills.

Duolingo is one of the most popular language learning apps in the world. The app offers multiple languages to learn, including English, Spanish, French and many more. Duolingo uses an approach focused on interactive games and exercises to help students expand their vocabulary. The app offers different types of exercises, such as listening, reading, writing and speaking exercises. Apart from that, Duolingo also provides progress and reward tracking features to motivate students in learning. In Ajisoko's research (2020) it is known that students learning vocabulary using duolingo are considered more fun and do not make the learning atmosphere boring. In addition, students' motivation in learning vocabulary also increases. On the other hand, Aulia et al (2020) showed that the experimental class that used Duolingo as a medium for learning English vocabulary had a higher mean value, compared to the control class, which used flashcards as a medium for learning English vocabulary. The mean value in the control class is 80.78 while the mean value in the experimental class is 84.69. From the results of these two studies, the authors concluded that the duolingo application had a positive effect on increasing students' vocabulary mastery

Meanwhile, Cake is an application specifically designed to improve students' vocabulary. This application uses a gamification-based learning method, where students are given challenges and prizes when they succeed in mastering new vocabulary. Cake offers various types of exercises, such as exercises to match words to pictures, fill in the missing words, and identify synonyms and antonyms. This application also provides review and repetition features of material that has been studied to strengthen student understanding.

This application is also considered to be able to help students learn English, especially mastery of English vocabulary. In the results of Wilson &Sutrisno's research (2022) using vocational students as research samples and it was found that the cake application had a positive effect on increasing students' vocabulary mastery.

On the other hand, Cake has a more vocabulary focused approach. This app offers specially designed exercises to expand students' vocabulary. Gamification-based learning methods can also increase student motivation in learning. However, Cake's weakness is the limited language offered. This app is only available in English, so it may not be suitable for students who want to learn another language.

Based on research that has been done before, it shows that the use of these two applications can be effective in increasing students' vocabulary skills. However, these

results also show that the effectiveness of the application depends on other factors, such as student motivation, consistency in using the application, and support from teachers or parents.

Based on the explanation above, the authors are interested in conducting research to compare the use of duolingo and cake applications to improve students' vocabulary mastery. The aim is to find out whether the two applications have the same ability to improve students' vocabulary mastery.

Method

A classroom action research approach (CAR) was used for this study. According to Arikunto (2012:3), classroom action research is a study of learning activities in the form of an action, which deliberately rose, and occurs in a class together. Therefore, itmeans that classroom action research is a research conducted in the classroom.The model consists of four steps; Planning, Implementing/Acting, Observing, and Reflecting. By using four stages such as; planning, implementation of action,The studycovered the research site and sample, research time, and a classroom action research cycle. If the first cycle expanded the students' vocabulary, the study would be over. If not, it continues to the second cycle. Researchers was used observations of student activities during the teaching and learning process to analyze qualitative data. Pre-test and post-test analysis used descriptive proportion techniques and a scary rubric while taking into account the trends that emerged during the learning process.

Result and Discussion

Finding
The Implementation of Classroom Action Research

CYCLE I

The first cycle carried out over three meetings, with two meetings focusing on the learning process and one meeting for evaluation at the end of the cycle. In accordance with classroom action research procedures, the following are several steps that have been taken in the first cycle:

Planning

Preparation of equipment before conducting CAR (Classroom Action Research) takes precedence. Therefore, in this section, the researchers proceed with the following steps:
The researchers choose the material to be taught using the Duolingo and Cake applications. The researchers made lesson plan by integrating the Duolingo and Cake   applications as teaching aids for vocabulary. The researcher compiles a vocabulary list to be distributed to the students. The researchers prepare evaluation tests to assess students' comprehension of the taught material.

Tabel 1. The Result of Students' Test in Cycle 1

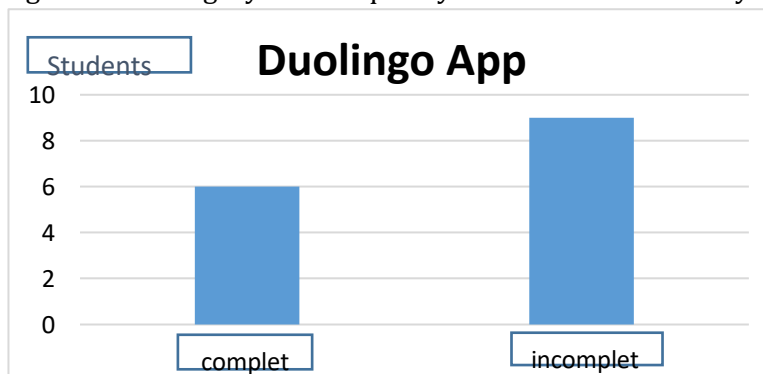| Duolingo App (Cycle 1)			
No	Student	Score	Where
1	S1	65	Incomplete
2	S2	60	Incomplete
3	S3	70	Incomplete
4	S4	70	Incomplete
5	S5	70	Incomplete
6	S6	85	Complete
7	S7	80	Complete
8	S8	65	Incomplete
9	S9	65	Incomplete
10	S10	65	Incomplete
11	S11	75	Complete
12	S12	75	Complete
13	S13	80	Complete
14	S14	60	Incomplete
15	S15	85	Complete
Total		1.070	
Mean		71.3	

Based on the results of the first cycle evaluation, the average score for class students who used Duolingo was 71.3, so the average score for students who used the Duolingo application in learning English vocabulary above shows that there were as many students who took the first cycle evaluation test. 15 students, 6 students who got a score ≥ 75 and 9 students who got a score below the KKM. If the student learning outcomes in cycle I are grouped into five categories, then the student learning outcomes are presented as follows:

Tabel 2.   Students' Frequency and Rate Percentage in Pre-test

Duolingo App (Cycle 1)				
No	Score	Category	Frequency	Percentage
1	80-100	Very Good	4	27%
2	70-79	Good	5	33%
3	60-69	Satisfactory	6	40%
4	50-59	Enough	0	0%
5	0-45	Bad	0	0%

From the data shown in the table above, it can be concluded that of the 15 students who took the test in the first cycle, 4 students achieved very good category achievement, 5 students achieved good category achievement, 6 students achieved satisfactory category achievement, while no students achieved performance category enough or bad.

Diagram 1.   Category and Frequency of Students' Score in Cycle I

From the diagram, it can be seen that 6 students scored above the KKM, while 9 students scored below the KKM. So based on this diagram, it can be seen that only 6 students' learning outcomes meet the standard scores. This research needs to be continued into cycle II.

Tabel 3. The Result of Students' Test in Cycle 1

Cake App (Cycle 1)			
No	Student	Score	Where
1	S1	45	Incomplete
2	S2	80	Complete
3	S3	70	Incomplete
4	S4	65	Incomplete
5	S5	60	Incomplete
6	S6	65	Incomplete
7	S7	45	Incomplete
8	S8	70	Incomplete
9	S9	80	Complete
10	S10	65	Incomplete
11	S11	65	Incomplete
12	S12	75	Complete
13	S13	70	Incomplete
14	S14	70	Incomplete
15	S15	85	Complete
Total		1.010	
Mean		67.3	

Based on the results of the first cycle evaluation, the average score for class students who used Cake application was 67,3, so the average score for students who used the Cake application in learning English vocabulary above shows that there were as many students who took the first cycle evaluation test. 15 students, 4 students who got a score ≥

75 and 11 students who got a score below the KKM. If the student learning outcomes in cycle I are grouped into five categories, then the student learning outcomes are presented as follows:

Tabel 4.   Students' Frequency and Rate Percentage in Pre-test

Cake App (Cycle 1)				
No	Score	Category	Frequency	Percentage
1	80-100	Very Good	3	20%
2	70-79	Good	5	33%
3	60-69	Satisfactory	5	33%
4	50-59	Enough	0	0%
5	0-45	Bad	2	13%

From the data shown in the table above, it can be concluded that of the 15 students who took the test in the first cycle, 3 students achieved very good category achievement, 5 students achieved good category achievement, 5 students achieved satisfactory category achievement, while no students achieved enough category   and there is 2 students achieved bad category.

Diagram 2. Category and Frequency of Students' Score in Cycle I
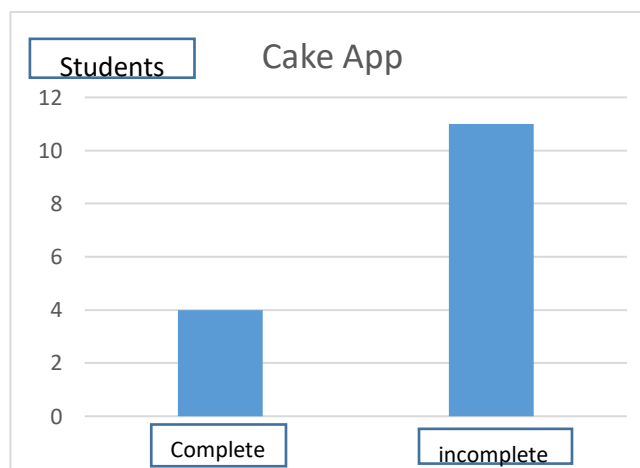
From the diagram, it can be seen that 4 students scored above the KKM, while 11 students scored below the KKM. So based on this diagram, it can be seen that only 4 students' learning outcomes meet the standard scores. This research needs to be continued into cycle II.

Observation

During learning, researchers also made observations about students' activeness in participating in learning, following are the results of observations in cycle I :

Table. 5. The Result of Observation Students' Activeness in Cycle I

No	Student	Activeness (Duolingo Class)

		Very Active	Active	Less Active	Not Active
1	S1			✔	
2	S2			✔	
3	S3			✔	
4	S4			✔	
5	S5			✔	
6	S6			✔	
7	S7			✔	
8	S8			✔	
9	S9	✔			
10	S10		✔		
11	S11			✔	
12	S12	✔			
13	S13		✔		
14	S14	✔			
15	S15		✔		

Table 6. The Result of Observation Students' Activeness in Cycle I

N o	Student	Activeness (Cake Class)			
		Very Active	Active	Less Active	Not Active
1	S1				
2	S2				
3	S3				
4	S4				
5	S5				
6	S6				
7	S7				
8	S8				
9	S9				
10	S10				
11	S11				
12	S12				
13	S13				
14	S14				
15	S15				

The Implementation of Classroom Action Research
CYCLE II

The first cycle carried out over three meetings, with two meetings focusing on the learning process and one meeting for evaluation at the end of the cycle. In accordance with

classroom action research procedures, the following are several steps that have been taken in the first cycle:

Planning

Preparation of equipment before conducting CAR (Classroom Action Research) takes precedence. Therefore, in this section, the researchers proceed with the following steps:

The researchers choose the material to be taught using the Duolingo and Cake applications. The researchers made lesson plan by integrating the Duolingo and Cake applications as teaching aids for vocabulary.

The researcher compiles a vocabulary list to be distributed to the students.
The researchers prepare evaluation tests to assess students' comprehension of the taught material.

Action

The second cycle actions were carried out three times. Learning activities were conducted in accordance with the previously prepared lesson plan.For the first meeting, the researcher began the class by greeting and praying together before starting the teaching and learning process. The researcher checked the attendance of the students and communicated the learning objectives that would take place. The researcher taught the students to play using the Duolingo or Cake applications. The students were asked to listen to the audio contained in the application being used, and then the researcher randomly selected a student who had to write down the vocabulary that had been listened to on the board. The researcher would correct the students' writing if it was incorrect and teach the students to pronounce the vocabulary correctly and accurately together.

For the second meeting, the researcher opened the class with greetings and a prayer before commencing the teaching and learning process. The researcher checked the attendance of the students and communicated the learning objectives for the session. The researcher verified whether the students had written and memorized the vocabulary provided earlier. The researcher allotted 15 minutes for the students to memorize the meanings and spellings of each vocabulary word that had been given. After that, the researcher asked all students to submit their notebooks containing the previously provided vocabulary. Then, the researcher wrote the previously provided vocabulary words in English on the board and asked the students to compete in writing the meanings of the Accounting vocabulary words that had been written by the researcher. At the end of the meeting, the researcher would reward the students who could write down more meanings of the vocabulary words that had been written by the researcher.

In the third meeting, the researcher began the class with greetings and a prayer. The researcher checked the attendance of the students and conveyed the objectives of the third meeting. The researcher ensured that the students were ready to work on the evaluation questions prepared by the researcher by stating that the evaluation questions contained vocabulary words they had previously learned. Then, the researcher distributed the evaluation sheets to each student and asked them to answer sincerely.

Tabel 7. The Result of Students' Test in Cycle 2

Duolingo (Cycle 2)			
No	Student	Score	Where
1	S1	80	Complete
2	S2	80	Complete
3	S3	80	Complete
4	S4	80	Complete
5	S5	90	Complete
6	S6	100	Complete
7	S7	100	Complete
8	S8	75	Complete
9	S9	75	Complete
10	S10	70	Incomplete
11	S11	90	Complete
12	S12	85	Complete
13	S13	100	Complete
14	S14	75	Complete
15	S15	95	Complete
Total		275	
Mean		85	

Based on the results of the first cycle evaluation, the average score for class students who used Duolingo application was 85, so the average score for students who used the Duolingo application in learning English vocabulary above shows that there were as many students who took the first cycle evaluation test. 15 students, 14 students who got a score ≥ 75 and 1 students who got a score below the KKM. If the student learning outcomes in cycle II are grouped into five categories, then the student learning outcomes are presented as follows:

Tabel 8. Students' Frequency and Rate Percentage in Post-test

Duolingo (Cycle 2)				
No	Score	Category	Frequency	Percentage
1	80-100	Very Good	11	73%
2	70-79	Good	4	27%
3	60-69	Satisfactory	0	0%
4	50-59	Enough	0	0%
5	0-45	Bad	0	0%

From the data shown in the table above, it can be concluded that of the 15 students who took the test in the first cycle, 11 students achieved very good category achievement, 4 students achieved good category achievement,   while no students achieved satisfactory,

enough, and bad category.

Diagram 3. Category and Frequency of Students' Score in Cycle II
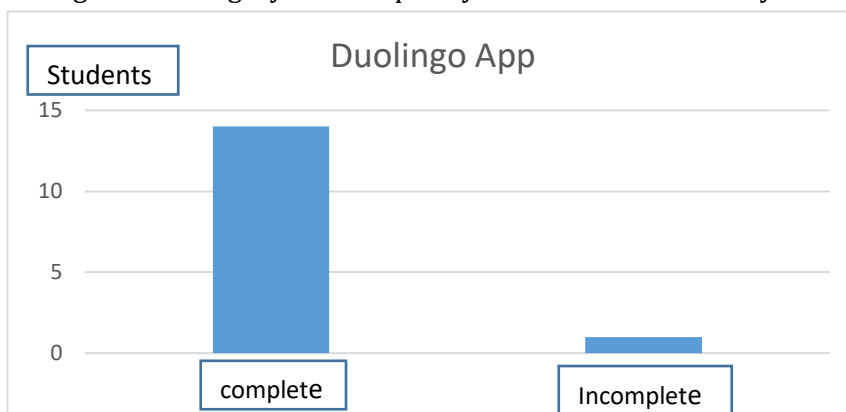
The diagram shows that 14 students got a score above the KKM, while 1 student got a score below the KKM. So, based on the diagram, it can be seen that there are 14 students' learning outcomes that meet the standards, but there is still 1 student who has not reached the KKM score. So, the researcher ended this action until the second cycle.

Tabel 9. The Result of Students' Test in Cycle 2

Cake (Cycle 2)			
No	Student	Score	Where
1	S1	75	Complete
2	S2	90	Complete
3	S3	90	Complete
4	S4	80	Complete
5	S5	75	Complete
6	S6	85	Complete
7	S7	70	Incomplete
8	S8	80	Complete
9	S9	100	Complete
10	S10	75	Complete
11	S11	75	Complete
12	S12	90	Complete
13	S13	85	Complete
14	S14	90	Complete
15	S15	90	Complete
Total		1.250	
Mean		83.3	

Based on the results of the first cycle evaluation, the average score for class students who used Cake application was 83.3, so the average score for students who used the Cake application in learning English vocabulary above shows that there were as many

students who took the first cycle evaluation test. 15 students, 14 students who got a score ≥ 75 and 1 students who got a score below the KKM. If the student learning outcomes in cycle II are grouped into five categories, then the student learning outcomes are presented as follows:

Tabel 10. Students' Frequency and Rate Percentage in Post-test

Cake (Cycle 2)				
No	Score	Category	Frequency	Percentage
1	80-100	Very Good	10	67%
2	70-79	Good	5	33%
3	60-69	Enough	0	0%
4	50-59	Satisfactory	0	0%
5	0-45	Bad	0	0%

From the data shown in the table above, it can be concluded that of the 15 students who took the test in the first cycle, 10 students achieved very good category achievement, 5 students achieved good category achievement,   while no students achieved satisfactory, enough, and bad category.

Diagram 4. Category and Frequency of Students' Score in Cycle II
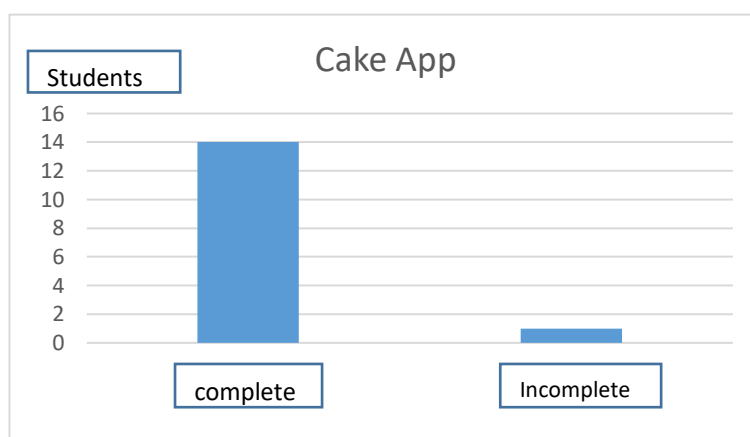
The diagram shows that 14 students got a score above the KKM, while 1 student got a score below the KKM. So, based on the diagram, it can be seen that there are 14 students' learning outcomes that meet the standards, but there is still 1 student who has not reached the KKM score. So, the researcher ended this action until the second cycle

Observation

During learning, researchers also made observations about students' activeness in participating in learning, following are the results of observations in cycle I :

Table 11.   The Result of Observation Students' Activeness in Cycle II

No	Student	Activeness (Duolingo Class)			
		Very Active	Active	Less Active	Not Active

1	S1				
2	S2				
3	S3				
4	S4				
5	S5				
6	S6				
7	S7				
8	S8				
9	S9				
10	S10				
11	S11				
12	S12				
13	S13				
14	S14				
15	S15				

Table 12. The Result of Observation Students' Activeness in Cycle II

No	Student	Activeness (Cake Class)			
		Very Active	Active	Less Active	Not Active
1	S1				
2	S2				
3	S3				
4	S4				
5	S5				
6	S6				
7	S7				
8	S8				
9	S9				
10	S10				
11	S11				
12	S12				
13	S13				
14	S14				
15	S15				

Where:

a. Very Active: students participate actively and responsively in all aspects of activities during the teaching process.

b. Active: Students actively respond to questions and are well engaged in learning.

c. Less Active: students tend to pay attention and give sporadic responses.

d. Not Active: students do not respond well to the material. They look confused, bored, and

sometimes leave the class

An overview of student participation in the second cycle was obtained from observations of 15 students during the learning process in the second cycle using Duolingo. As a result, students who were very active reached an average of around 33%, students who were active around 53%, students who were less active reached around 13%, and there were no students who were not active.

On other hand, the 15 students who were taught using the Cake application during the learning process in cycle I, the results were students who were very active on average reached around 47%, students who were active around 40%, students who were less active reached around 13%, and students who were not enthusiastic reached around 0%.

Reflection

The implementation of English vocabulary learning using aplikasiDuolingodan Cake application has been carried out in accordance with the designs previously prepared. After that, after seeing the observations of classroom learning and the results of students' learning observations, it was known that the using Duolingo and Cake application has improved students' vocabulary.

Discussion

Tabel 13. Category and Frequency of Students' Score in Cycle II

		Cycle 2	
N0	Students	Score Duolingo	Score Cake
1	S1	80	75
2	S2	80	90
3	S3	80	90
4	S4	80	80
5	S5	90	75
6	S6	100	85
7	S7	100	70
8	S8	75	80
9	S9	75	100
10	S10	70	75
11	S11	90	75
12	S12	85	90
13	S13	100	85
14	S14	75	90
15	S15	95	90
Total		1.275	1.250
Mean		85	83.3

This research is classroom action research consisting of two cycles. Each cycle consists of three meetings, where two meetings are used as a learning process and one meeting is used as an evaluation to evaluate student learning outcomes. During the

learning process, observations were made to assess the effectiveness of the Duolingo and Cake applications in increasing students' vocabulary.

The results showed that in the second cycle there was an increase in student scores. The class that took part in learning using the Duolingo application had an average score of 71.3 in the first cycle, while in the second cycle, the average score increased to 85. This shows that the Duolingo application can improve students' vocabulary. Apart from that, classes that took part in learning using the Cake application also experienced an increase. In the first cycle, the class that used the Cake application had an average score of 67.3, which was lower than the average score of the class that used the Duolingo application. However, in the second cycle, the average value increased to 83.3. This shows that the Cake application can also improve students' vocabulary. To answer the third problem formulation in this research, the researcher compared the average scores obtained by the two classes in the second cycle. From the description above, it can be seen that the average score for the class using Duolingo is higher than the class using Cake, namely 85 compared to 83.3.

Thus, using the Duolingo application as part of the learning process improves students' vocabulary since it allows students to acquire vocabulary more quickly and relaxedly without feeling tough. Students will enjoy learning and obtain better achievements if the environment is favorable and agreeable to their senses. This is possible because fun learning allows information to be understood and remembered well; as previously stated, this media is effective in providing learning to students in the classroom.

Conclusion

Based on the description of the research results in the previous chapter, the researcher concluded that the research results showed that teaching vocabulary using Duolingo was more significant in increasing students' vocabulary than the Cake application. This is proven by the average score in the second cycle for the class taught by Duolingo, which were 85. Meanwhile, the class taught with the Cake application had an average score of 83.3. The use of this media seems to help students to learn English vocabulary more easily and pleasantly.

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