THE USE OF DUOLINGO TO BOOST STUDENTS' VOCABULARY MASTERY AT SEVENTH GRADE ON CLASS AN-NISA OF SMP MUHAMMADIYAH AT-TANWIR METRO

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Abstract: This study examines the effectiveness of Duolingo in boosting students' vocabulary mastery in the seventh grade of class an-nisa at SMP Muhammadiyah At-tanwir Metro. Using Classroom Action Research (CAR) with two cycles, data were collected through tests and observations. Results show a significant improvement: the percentage of students meeting the passing score increased from 17% (pre-test) to 34% (post-test I) and 100% (post-test II). Additionally, students' engagement and motivation in learning English also increased, as observed through their participation and enthusiasm during lessons. Based on the findings, it is recommended that English teachers integrate Duolingo as a supplementary tool to enhance vocabulary learning. Future research could explore its impact on other language skills, such as speaking and listening, to provide a more comprehensive understanding of its effectiveness in English learning.

Keywords: *Duolingo, vocabulary mastery, Classroom Action Research (CAR), English learning*

INTRODUCTION

Vocabulary is an essential component of language that learners need to acquire when learning a language. Learners or students who want to speak English fluently need a sufficient amount of vocabulary, otherwise, they will face difficulties in speaking, reading, listening, and writing. According to J.C. Alderson and Lyle F. Bachman as cited in (Paramita, 2018) vocabulary consist of a set of lexemes, including single words, compound words, and idioms. In addition, (Soliha, 2020) stated that "Vocabulary is a core component of language proficiency and provides much of the basis for how learners speak, listen, read and write. Without extensive vocabulary and strategies for acquiring new vocabulary, students often reach their potential and may be advised to take advantage of language learning opportunities around them such as listening to music, listening to native speakers, using language in different contexts, reading or watching television or movies".

Related to the meaning of vocabulary, which is the basis of a student being able to speak, listen, read, and write, then the learning goals of the students in the seventh grade contained in the companion book for even semester (Bachtiar, Kusumaning Ayu and Dwi Arini, 2022) are expected to identify how to ask for and give information related to the daily activities or routines appropriately. Because of it, the seventh grade's students should be able to improve their vocabulary mastery skills so that they can more easily understand the material's learning.

In reality, the students had difficulty in memorizing and understanding the words, which affected their ability to speak English well. Some of the difficulty factors are the difference between the written word and the pronunciation in English which is often due to the lack of similarities between the sounds in English and Bahasa. Another causes students got difficulty in memorizing and understanding the words are sounds-spelling mismatches and some of similar word but have the difference meaning. All of the problems above affect to the limited diction of students so that they got difficulties on understanding the meaning and applying the vocabulary they learnt. The readers can see the result of the pre-survey data through the table below:

Table 1. Pre Survey Data of Students' Vocabulary Mastery at Seventh grade on Class An-Nisa of SMP Muhammadiyah At-tanwir Metro

No	Category	Score Interval	Students Frequency	Percentage
1	Excellent	90-100	6	21%
2	Very good	80-89	7	24%
3	Good	70-79	8	28%
4	Fair	60-69	3	10%
5	Fail	Fewer-59	5	17%
	Total		29	100%

Source: Pre-survey on Class An-nisa at SMP Muhammadiyah At-tanwir Metro (December 6th, 2023)

Based on the result of students' pre-survey above, researcher get point that it needs to be improved to solve the problems. The result showed that there were 13 students (got score ≥80) who passed the pre-survey while there were 16 students (got score <80) who failed to meet the passing grade of criteria for achieving learning objectives. To overcome this problem, it is recommended that teachers use various teaching techniques and media to make to make English learning more enjoyable, especially in mastering vocabulary. Using media can make learning more engaging and enjoyable. Media is often used as additional support in teaching, and there are many options available, including text, audio, video, and visual formats.

Duolingo is an application that can be used to teach vocabulary. It offers a variety of educational activities, including listening, reading, writing, vocabulary, and grammar exercises, with an option for speaking practice. Munday as cited in (Budiarti, 2020) stated Duolingo is a user-friendly and valuable application with great potential, although its primary lessons do not focus on communicative competence, students still find it enjoyable to use because of its mobile accessibility, gamified elements, and wide variety of tasks. Moreover, this app also has certain drawbacks, such as

requires internet access and limiting Duolingo's class for teachers to web access only, as it is not available in the app's menu.

In addition, according to (Patel, 2019) some strengthness of Duolingo are a freemium language-learning platform that includes both a website and a mobile app, along with a digital language proficiency assessment. The lessons cover various topics such as basic learning, common phrases, food, animals, plurals, possession, and other frequently used words in everyday life). Except Duolingo has strength, it has the weakness too such as Duolingo's translations are not entirely like those of a native speaker. The voice of the speakers resembles Google Translate, making the pronunciation sound flat and less natural.

Here, the researcher just focuses on the use of Duolingo to boost students' vocabulary mastery. The researcher aims to explore "The Use of Duolingo to Boost Students' Vocabulary Mastery at the seventh Grade on Class An-nisa' of SMP Muhammadiyah At-tanwir Metro in the academic year 2023/2024".

LITERATURE REVIEW

A word or vocabulary, in most linguistics analyses, is described as a set of properties, or features, each word is the combination of its meaning, register, association, collocation, grammatical behaviour, written form (spelling), spoken form (pronunciation) and frequency. To master a word is not only to learn its meaning but also to learn seven other aspects. All these properties are called word knowledge (Alqahtani, 2016).

Vocabulary can be defined as "the words we must know to communicate effectively, words in speaking (expressive vocabulary) and words in listening (receptive vocabulary)" (Bintz, 2011). In addition, vocabulary is part of English component that play an importance role in mastering all English skills including listening, reading, speaking, and writing. Vocabulary is all the words that people use and known, the word that people used when they are talk to others, and a table of word contains meaning for learning foreign language (Pitaloka, Theresia and Palupi K2, 2021).

Mastering vocabulary is essential in language learning. A rich vocabulary enhances a person's language skills, making communication more effective. Vocabulary mastery is generally categorized into two types, those are receptive vocabulary (words we understand when listening or reading) and productive vocabulary (words we can actively use in speaking and writing). Receptive mastery is the process of understanding what is said by others, receptiveness is defined as passive mastery. Productive mastery is the process of communicating ideas, thoughts, feelings through linguistic forms. Mastery of vocabulary in activities and daily life has a very large role because one's thoughts can only be clearly understood by others if expressed using vocabulary. So the person's language capacity is a reflection of the ability to classify and indicate the meaning of certain words (Tampubolon, Sinamo and Saragih, 2022).

Based on the explanation above, the reasearcher concludes that learning vocabulary is crucial, as it enables students to listen, speak, read, and write in English. To communicate effectively in a language, students must acquire an adequate vocabulary. A strong vocabulary allows them to understand what others say and express themselves clearly in communication. In addition, they can also express their opinions or ideas and can communicate with others well.

The researcher has reviewed and analysed three previous studies related to this research. The first previous research was conducted from Sultan R. Alfuhaid (Alfuhaid, 2021) with under title *"The Utilisation of Duolingo to Enhance the Speaking Proficiency of EFL Secondary School Students in Saudi Ar abia".* The aim of this research was to investigate the effectiveness of using Duolingo in EFL classrooms to enhance the participants' speaking proficiency. The results of this study indicate that integrating Duolingo into the learning process has a significant positive impact on improving participants' speaking proficiency and overall language skills.

The second previous research was from Ragil Quanita Putri and Dewi Syafitri (Putri and Syafitri, 2022) with under title *"Crossword puzzle game to improve students' vocabulary mastery".* The goals of this study were to find out whether crossword puzzle games are effective in increasing students' vocabulary or not. The result of the data analysis showed that using puzzle games is an effective way to enhance students' vocabulary.

The final previous research was from Afita Dewi Prastiwi and Kinanti Resmi Hayati (Prastiwi and Hayati, 2021) under title *"The Effectiveness of Android Game as A Teaching Media to Improve English Vocabulary among Marine Engineering Students".* The aim of the study to evaluate the effectiveness of an Android game as a teaching tool for improving English vocabulary. The results indicate that Android games help to improve the English vocabulary of marine engineering students.

This study is limited to analysing how Duolingo, as a learning medium, can enhance students' vocabulary mastery. Based on the previously identified issues in English teaching and learning, this research focuses on two main questions. First, can the use of Duolingo improve the vocabulary mastery of seventh-grade students in class An-Nisa? If so, to what extent? Second, how does the use of Duolingo affect students' learning motivation in class An-Nisa at SMP Muhammadiyah At-Tanwir Metro? Corresponding to the problem formulation, this research aims to determine whether Duolingo can enhance the vocabulary mastery of students in class An-Nisa and to describe the impact of using Duolingo on their learning motivation.

The findings of this research are expected to provide several benefits. For English teachers, this study may serve as an alternative technique for enhancing vocabulary and as a valuable resource for improving the quality of English teaching. For students, it can help address challenges in learning English, particularly in vocabulary acquisition, while also motivating them to engage more actively and enjoy their English lessons. Additionally, for other researchers, the results of this study can be useful for those interested in exploring similar topics in different contexts, as well as highlighting the effectiveness of digital applications like Duolingo in enhancing vocabulary mastery.

METHOD

The researcher conducted this research at the students of class an-nisa of the seventh grade at SMP Muhammadiyah At-tanwir Metro which located at Jl. Proklamasi No.1 Mulyosari 16a, Metro Barat. The researcher chooses the students of class an-nisa that consist of 29 students. This research has been done with classroom action research in even semester of junior high school students. Based on the data on students' cognitive scores, determination of the subject in this research was selected using purposive sampling technique. In relation to this issue, considerations were made as many students had not yet achieved the passing grade (minimum score) in vocabulary mastery.

Koshy Lastly describes action research as a constructive inquiry in which the researcher develops an understanding of specific issues through a cycle of planning, acting, evaluating, refining, and learning from experience. It is an ongoing learning process where the researcher not only gains insights but also shares newly acquired knowledge with others who may benefit from it (Clark *et al.*, 2020). CAR is a method used to identify the most effective teaching strategies in a specific classroom setting, allowing educators to enhance students learning and overall academic performance (Oktaviani, Mandasari and Maharani, 2020). In addition, classroom action research is a systematic approach that aims as a means for teachers to overcome problems that exist in the classroom so that teachers can effectively improve the quality of teaching in the classroom (Hafiz and Anisa, 2022).

The data in this research includes both quantitative and qualitative data. The quantitative data consists of students' scores collected from pre-tests and post-tests, while the qualitative data provides a description of the learning process based on observations. The research instruments used are as follows. First, tests are used as a method to assess students' ability, knowledge, or performance in a specific domain. Second, observation is employed to gain deeper insights into students' responses. In this study, students' behaviour and activities were observed during English class, with a particular focus on the development of their vocabulary mastery through the use of the Duolingo application.

The researcher applies the data analysis process based on the approach proposed by Miles and Huberman, as cited in Sugiyono's book. They stated that qualitative data analysis is conducted interactively and continuously until the process is complete. In addition to qualitative analysis, this research also employs simple statistical methods for data observation.

FINDINGS AND DISCUSSION

Findings

Classroom Action Research (CAR) was carried out in the seventh grade on class an-nisa of SMP Muhammadiyah At-tanwir Metro that consist of 29 students. This research aims to determine whether *Duolingo* can boost students' vocabulary mastery for class an-nisa or not and to describe the impact of learning motivation in class an-nisa when *Duolingo* is used. These were the results of research conducted by researcher at SMP Muhammadiyah At-tanwir Metro:

1. When learning in class, if the teacher only explains using *lecturing method or telling method,* students only pay attention for a short time and the class becomes less active. Students were less active because students feel bored and less interested in learning. There were some students who divert their attention by talking to their classmates, playing alone and feeling sleepy which makes the learning atmosphere not conducive. After explaining the material, the teacher provides students with the opportunity to ask questions about any material they have not understood. However, the students were silent and did not respond.

2. Before conducting the teaching and learning activities using the Duolingo application, the researcher administrated a pre-test. It was held on Thursday, 16th of May 2024 and followed by 27 students because two students were sick. The researcher gave 30 multiple choice items and allocated 40 minutes for students to complete it. However, most students took around 50 minutes, exceeding the expected time. This delay likely occurred because they found the questions challenging.

Here is the list of pre-test scores:

Table 2. Pre-test Score

No	Students' Name	Score	Criteria for Achieving Learning Objectives	Completed	Not Completed
1	Adira Yaraliva	-	80		√
2	Afnan Danah Imtinan	83	80	√	
3	Akhtari Alma Asafita	56	80		√
4	Ananda Zahra Pratiwi	56	80		√
5	Artika Salsabila	56	80		√
6	Aunes Nabila	56	80		√
7	Clairene Gazelle Ganie	43	80		√
8	Dinda Nurul Fauziah	66	80		√
9	Dwi Novita Putri	86	80	√	
10	Fany Fazrina R.	80	80	√	
11	Fara Hilmia Azra	56	80		√
12	Ferlya Zhafirah Azka	63	80		√

No	Name				
13	Firda Sari	43	80		√
14	Haura Husna Yusfa	53	80		√
15	Jasmine Madinah Mukhtar	60	80		√
16	Keyla Rahmadhani Putri	80	80	√	
17	Khansa Aleesya Azahra	53	80		√
18	Khezia Mazaya Khoirunnisa	-	80		√
19	Na'ila Rikhadatul Aisyah	66	80		√
20	Natasya Saqila Azzahra	40	80		√
21	Naura Elfariz Zahra Nugroho	60	80		√
22	Nayla Shafa Choirunnisa	86	80	√	
23	Nazwa Mutiara Darmawan	60	80		√
24	Qaulani Lathifa Putri	46	80		√
25	Syakila Naura	76	80		√
26	Tsabitah Alya Zahirah	40	80		√
27	Winda Asyifa	76	80		√
28	Z. Karima Naila Ramadhani	66	80		√
29	Zalfa Qurratu'ainin	60	80		√
	TOTAL	1.666			
	AVERAGE	62			
	LEARNING COMPLETENESS			17%	83%

Based on the data above, the researcher can calculate the students' level of completion.

Students who completed: 5 students

Students who have not yet completed: 24 students

Percentage:

Completed : $\sum \frac{5}{29}$ x 100% = 17%

Not yet completed : $\sum \frac{24}{29}$ x 100% = 83%

Discussion

Can the use of Duolingo improve the vocabulary mastery of seventh grade students in class an-nisa?

If so, to what extent?

There were found some improvements on students' vocabulary mastery and their attitude toward the lesson. At beginning, the students were reluctant and not too interested when asked in English. Actually, their disinterest in English was because they think English was difficult, they felt difficult to express what they want to say. Then they started learning simple words through the Duolingo application, followed by more complex words. In addition, the students were also more attentive to the researcher's instructions. Their interest on the Duolingo application was one of the factors that made them more pleased during the lesson.

Duolingo application can help the students to understand the vocabulary easily. They were more fun when doing tasks using applications such as an educational game. Duolingo application can solve the problem of students. It can provide vocabulary inforcement related to the material that given by the researcher.

Table 3 is the findings of accumulation score of pre-test and post-test in using Duolingo to enhance students' vocabulary mastery at SMP Muhammadiyah At-tanwir Metro.

Table 3. Accumulation Score of Pre-test and Post-test

No	Students' Name	Pre-test	Cycle I	Cycle II
			Post-test	Post-test
1	Adira Yaraliva	-	90	100
2	Afnan Danah Imtinan	83	86	100
3	Akhtari Alma Asafita	56	46	83
4	Ananda Zahra Pratiwi	56	66	80
5	Artika Salsabila	56	90	100
6	Aunes Nabila	56	86	96
7	Clairene Gazelle Ganie	43	63	90
8	Dinda Nurul Fauziah	66	53	80

9	Dwi Novita Putri	86	76	90
10	Fany Fazrina R.	80	80	100
11	Fara Hilmia Azra	56	73	86
12	Ferlya Zhafirah Azka	63	83	93
13	Firda Sari	43	43	80
14	Haura Husna Yusfa	53	66	83
15	Jasmine Madinah Mukhtar	60	70	100
16	Keyla Rahmadhani Putri	80	50	83
17	Khansa Aleesya Azahra	53	66	86
18	Khezia Mazaya Khoirunnisa	-	100	100
19	Na'ila Rikhadatul Aisyah	66	53	80
20	Natasya Saqila Azzahra	40	60	96
21	Naura Elfariz Zahra Nugroho	60	53	93
22	Nayla Shafa Choirunnisa	86	60	100
23	Nazwa Mutiara Darmawan	60	50	86
24	Qaulani Lathifa Putri	46	80	96
25	Syakila Naura	76	83	100
26	Tsabitah Alya Zahirah	40	80	96
27	Winda Asyifa	76	76	93
28	Z. Karima Naila Ramadhani	66	70	83

| 29 | Zalfa Qurratu'ainin | 60 | 63 | 86 |
| | **AVERAGE** | **64** | **69** | **91** |

From the results of the data above, the use of Duolingo application has been proven to be successful in boosting students' vocabulary mastery in class an-nisa at SMP Muhammadiyah At-tanwir Metro.

The improvement of students' vocabulary mastery could see in the learning process. When researcher asked about certain vocabulary that they have learned, they did not need to think long to answer it. Supporting to the statement, the result of post-test I indicated the improvement up to 17%. Taken from the pre-test the students who successfully achieved a passing grade only 5 students, but in the post-test I was 10 students and in the post-test II was 29 students. They can solve all problems and difficulties so that students can understand the learning material that provided by the teacher. At the time of the evaluation, students had shown better score than the previous cycle, namely the lowest score was 43 which had not yet reached the target of completion, so the score of 80 obtained was satisfactory and could be said to be successfull.

Table 4. Comparison of Percentage Analysis of Students Learning Completeness in Cycle I and Cycle II

No	Action	Average of Score	Completeness of Learning	
			Completed	**Not Yet Completed**
1	Cycle I	69	34%	66%
2	Cycle II	91	100%	0%

From the table above, the percentage analysis of student learning outcomes in the cycle I and II, with average of score, and completion students learning is equal to the level of success, which means high. So, this research was not continued in the next cycle.

**Table 5. Recapitulation of Pre-test, Post-tes I and Post-test II**

No	Description	Test		
		Pre-test	**Post-test I**	**Post-test II**
1	Lowest Score	40	43	80
2	Highest Score	86	100	100
3	Class Average	62	69	91

4	Criteria for Achieving Learning Objectives/KKTP	80	80	80
5	Students who Achieved the KKTP Score	5	10	29
6	Students who did not Achieve the KKTP Score	24	19	-
7	Percentage of Students who Achieved KKTP	17%	34%	100%

Based on table 5, it can be seen that there is an increase in results study. The lowest score of the pre-test increased in cycle I to 43 and cycle II to 80. The highest score in pre-test was 100, as well as the highest score in cycle I and cycle II. The percentage of students who achieved KKTP in the pre-test is 17%, in cycle I it increased to 34% and then to 100% in cycle II.

When depicted as a chart, the improvement of students' learning results at class an-nisa using Duolingo application was as follows:

Chart 1. The result of Pre-test, Post-test I and Post-test II
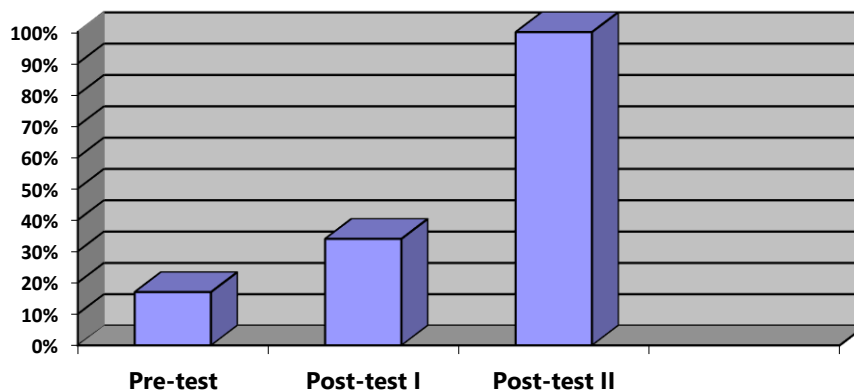
From the results of observations regarding student activities while participating in learning activities using Duolingo application, this indicates an improvement in student engagement and participation during the learning process. According to the scale determined by the researcher, it increased in each cycle.

How does the use of Duolingo give impact to students' learning motivation in class an-nisa at SMP Muhammadiyah At-tanwir Metro?

Based on the actions that have been given, the results of the analysis carried out by collaborator as observer during the learning process are obtained. In the first meeting of the second cycle, the students were more enthusiastic than in previous meetings. They actively engaged in every activity and showed greater interest in the lesson. They paid closer attention, answered the researcher's questions, and participated more in the learning process. The class became more attractive and fun.

In the second meeting, the classroom environment was more controlled. The previously talkative students were no longer disruptive, and all students remained focused on completing their tasks.

Table 6. The result of observing the action in cycle I

RATED ASPECTS	SCORE
Students' readiness to receive learning material	
Getting to class on time	4
Preparing study equipment	4
Do not do other work that will interfere with the learning process	3
Students' enthusiasm in learning participation	
Listen to the information presented by the teacher	3
No talking to other friends except when discussing learning material	3
Giving responses to what is conveyed by the teacher	2
Asking things that are not understood related to the learning material	2
Doing the practice questions given	4
Showing good enthusiasm and focusing on what is instructed by the teacher	3
Students' participation in closing learning activity	
Writing down the conclusions of the material	2
Total	**30**
Average	**3 (good)**

Based on the results of students observation from observer in cycle I, several observation aspects in the table above include: student readiness to receive learning material, student enthusiasm in participating in learning and student participation in closing learning activities. The average score of observation was 3, this score is in the good category, meaning that students have followed the learning process well.

Table 7. The result of observing the action in cycle II

RATED ASPECTS	SCORE
Students' readiness to receive learning material	
Getting to class on time	4
Preparing study equipment	4
Do not do other work that will interfere with the learning process	4
Students' enthusiasm in learning participation	
Listen to the information presented by the teacher	4
No talking to other friends except when discussing learning material	3
Giving responses to what is conveyed by the teacher	3
Asking things that are not understood related to the learning material	2
Doing the practice questions given	4
Showing good enthusiasm and focusing on what is instructed by the teacher	4
Students' participation in closing learning activity	
Writing down the conclusions of the material	3
Total	**35**
Average	**3,5 (good)**

Based on the results of students observation from observer in cycle II, the average score of observation was 3,5. This score is in the good category, meaning that students have followed the learning process well and there has even been improvement.

CONCLUSION AND SUGGESTION

Conclusions

On the basis of the research findings, it can be concluded that the students' vocabulary mastery of pronouns, adjectives, and verbs in the classroom improved after using the Duolingo application. This is supported by the significant increase in results from the pre-test (17%) to post-test I (34%) and post-test II (100%). Based on the observations, the Duolingo application enhanced the students' motivation to learn English. After the completion of the action research, students developed a closer relationship with the researcher. This positive connection contributed to their increased enjoyment of English lessons, as they were introduced to a new and engaging learning method that had not been previously used by their classroom teacher.

Suggestions

Based on the conclusions presented, it is recommended that the Duolingo application be regularly incorporated into English language instruction, particularly for students at the elementary and junior high school levels. Its interactive and engaging features can help foster greater student motivation and interest in learning English. Teachers are also encouraged to cultivate a positive and supportive learning environment by employing a variety of teaching strategies that keep classroom activities dynamic and enjoyable. This approach not only sustains student engagement but also enhances the overall learning experience. Furthermore, future research on the use of Duolingo in English language teaching is highly encouraged. Such studies could provide deeper insights into its effectiveness across diverse learning contexts and among students with varying levels of language proficiency.

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