Game-Based Learning To Improve The Vocabulary Mastery In EFL Class

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Abstract— **This is a classroom action research that aims to improve the quality of the learning process by motivating students, creating a more enjoyable learning environment, and increasing mastery of English vocabulary using a Game-Based Learning approach. This research design is based on the model developed by Kemis and McTaggart (1998), and it was implemented in two cycles, each of which had four stages: planning, implementing, observing, and reflecting. Data were gathered through observation, interviews, and documentation on a performance evaluation sheet (study result test) and an observation sheet. Furthermore, data were descriptively analyzed using Miles and Huberman's interactive analysis model, and the steps were data reduction, data displaying, and conclusion drawing/verification. The findings of this study show that before using this method, students' vocabulary mastery was very low. In cycle 1, after using the Game method to learn vocabulary, the results for each indicator improved significantly. The percentage of students passing the first test rose to 56% and continue increasing to 88% in cycle 2. Therefore, it is concluded that the Game-Based Learning method can improve the quality of the vocabulary learning process and students' vocabulary mastery.**

Keywords : *Game-Based Learning, Vocabulary*

I. INTRODUCTION

One of the fundamental and crucial components for mastering a language is vocabulary since it is the primary component in sentence construction. The more vocabulary someone knows, the simpler it will be to express themselves verbally and in writing. Similarly, learning English as a foreign language in our country requires vocabulary mastery so that communication can flow smoothly.

Learning vocabulary is the most important aspect of learning English because vocabulary serves as the foundation for building sentences[1]. Actually, there are other elements in the formation of a language that are no less important to learn, such as Grammar, but vocabulary mastery remains the most important because having mastered it can be an important provision to master language skills such as reading, writing, listening, and speaking. Can you imagine reading or pronouncing an English sentence if you don't understand any of the words?

In their writings, Basri, Ridla, and Wahed (2014) emphasized the importance of vocabulary in mastering a foreign language because a lack of vocabulary mastery prevents students from communicating effectively in the target language (English)[2]. Furthermore, Hatch and Brown (in Nugroho, 2012) added that mastering vocabulary allowed people to express themselves and understand other basic competencies [3].

Vocabulary is the fundamental component of a language that is used to identify things like objects, qualities, and verbs in order to explain the meaning of what is being conveyed [4]. According to Khasanah, Chamdani, and Susiani (in Fitriyani and Nulanda, 2107), vocabulary is a crucial but often ignored part of the activities when learning English. Students may encounter obstacles if they do not have a sufficient vocabulary [5].

Based on preliminary research on first semester Business Administration Department students at Kupang State Polytechnic who took the General English course, several difficulties or impediments in learning were discovered due to a lack of vocabulary mastery. For example, the reading segment took longer than expected due to a lack of student knowledge of the words meaning in the reading book. Most students struggled to grasp the audio they were listening to in the listening phase as well. Similarly, students tended to be inactive in speaking activities, unable to express their opinions. Communication between the teacher and the students, or amongst fellow students in the class, did not flow smoothly simply because they had to pause for a moment to think about words in English, and some could not communicate at all due to their restricted vocabulary. In the writing part, the same thing happened. Even though it was only for a short writing, several students found it difficult to express their views in written form since they didn't know what words to use.

Furthermore, the author discovered various issues with vocabulary mastering, such as difficulties understanding word meanings, difficulty recalling or memorizing words, difficulty pronouncing words correctly, and difficulty using words appropriately. These issues had an indirect impact on learning achievement. Due to a lack of vocabulary mastery, the results achieved were poor.

The author regarded the applied learning model as one of the factors influencing the challenges mentioned above.

There was no set time for students to study vocabulary and the approach employed was the traditional way in which the lecturer lectured, students checked up the definition of a word in the dictionary, tried to memorize it, or used it once or twice and then forgot it.

Seeing these phenomena, it is regarded vital to make modifications; hence, the author attempted to provide a fun and stimulating vocabulary learning model for students via a Game-Based Learning approach. Trybus (2015) defines Gaming-Based Learning as "borrowing certain game elements and implementing them in real-life settings to engage users"[6]. This strategy not only develops games for students to play, but it also creates learning activities that may gradually introduce concepts and guide users toward the ultimate purpose. This concept has become more popular in higher education as a means of involving students in learning [7]. Therefore, the purpose of this research is to illustrate how the Game-Based Learning method is used to learn English vocabulary and what the results are.

II. THEORETICAL REVIEW

A. Game Based Learning

According to Torrente (in Pratiwi & Musfiroh, 2014), game-based learning is the use of games with a serious goal (i.e. educational purposes) as a tool that greatly aids the learning process [9]. Game-based learning is an educational method in which users can adopt a game to meet the needs of cognitive curiosity and learning motivation [10].

According to McGonical (Hidayat, 2018), games have four main educational features: (1) goals or results that participants will obtain from their activities in the game; (2) rules, which are restrictions on how players can achieve their goals in the game; (3) feedback system, which shows participants how close they are to the goals they want to achieve in the game; and (4) voluntary participation, in which everyone participates in a game voluntarily, with the awareness that they accept the stated goals, rules, and feedback system [12].

There are various advantages of using games in education: 1) Involve and motivate all pupils in their learning. 2) Develop pupils' abilities, such as literacy and numeracy. 3) As a means of overcoming cognitive challenges. 4) Acting out specific roles or professions before attempting them in real life. 5) Enabling pupils to create multimedia or game-based content [13]. Furthermore, Rahayu, Priyatna, and Banita (2020) discovered that incorporating games in learning can reduce stress in the learning environment, invite students to be fully engaged in learning, improve the learning process, build self-creativity, achieve goals unconsciously, achieve meaning in learning through learning experience, and focus the learner as a subject [14].

Seeing the features and benefits of game-based learning led to the selection of this strategy to be implemented in this study. Teacher can use this strategy to deliver instructional games that can make the learning process more enjoyable. Furthermore, as information and communication technology develop, teachers can use web application-based educational games. When selecting a game, the teacher can customize it to the topic to be presented. Games for vocabulary acquisition include crossword puzzles, scrabble, boggle, anagrams, word jumbles, and guess the word.

B. Vocabulary

According to Torrente (in Pratiwi & Musfiroh, 2014), game-based learning is the use of games with a serious goal (i.e. educational purposes) as a tool that greatly aids the learning process [9]. Game-based learning is an educational method in which users can adopt a game to meet the needs of cognitive curiosity and learning motivation [10].

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III. RESEARCH METHOD

This is a classroom action research project that attempts to improve the quality of the learning process by motivating students, creating a more enjoyable learning environment, and enhancing knowledge of English vocabulary using a Game-Based Learning approach. This study design is based on the model proposed by Kemis and McTaggart (1998), and it was implemented in three cycles, each of which had four stages: planning, implementing, observing, and reflecting. Data were gathered by observation, interviews, and documentation on a

performance evaluation sheet (study result test) and an observation sheet. Furthermore, data were descriptively analyzed using Miles and Huberman's interactive analysis paradigm, with the steps consisting data reduction, data display, and conclusion drawing/verification. The research subjects were first semester students from the Company Management Study Program, Department of Business Administration, Kupang State Polytechnic. They were chosen as the data source using the purposive technique.

In Classroom Action Research, a cycle is deemed to be successful or unsuccessful based on the achievement of predefined targets, which serve as indicators/criteria for success. If the results are the same as expected, the cycle has been successful; if they are not, the strategy must be altered for use in the following cycle. Similarly, in the second cycle, and so on, success is judged by comparing the achievements/impacts that have been achieved with the success criteria that have been targeted, rather than comparing performance before cycle 1 or results in cycle 1.

The goal of this classroom action research is to improve students' mastery of English Vocabulary. As a result, before carrying out the activity, the research subjects were given a pre-test and then a post-test to decide the results of the action. The following indicators are used to assess student vocabulary mastery: Students can appropriately pronounce words; Students can appropriately explain the meaning of words; and Students can correctly use words in sentences based on their context.

The obtained learning outcomes data are classified using the following standard classification technique:

Table 1. The classification of students' achievement

Score Range	Classification
0 – 34	Poor
34 – 54	Less
55 – 64	Fair
65 – 84	Good
85 – 100	Excellent

Finally, to evaluate the success of this strategy, the data was analyzed using the formula for the average percentage score: P = f/n x100%

Information:
P   : Percentage
f   : Number of students classified by Grade Level
n   : Total number of students

This study's accomplishment is defined as 85 percent of participants receiving a score of 65 or above.

IV. RESULTS AND DISCUSSION

4.1 The application of the Game-Based Learning method to learn English vocabulary

This Classroom Action Research was conducted in two cycles. The research subjects were 25 first semester students in the General English class. The author was assisted in conducting this research by a two-person research team.

The students were given a pre-test prior to using the Game-Based Learning method to teach vocabulary, and the results were unsatisfactory. Table 2 shows the data from the students' vocabulary pre-test results:

Table 2. Pre-Test Vocabulary Results

Students' code	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Total Score
1	17.5	20	22.5	20	80
2	10	7.5	10	5	33
3	15	12.5	12.5	12.5	53
4	12.5	15	12.5	12.5	53
5	15	12.5	12.5	12.5	53
6	20	20	22.5	20	83
7	20	20	10	10	60
8	15	10	12.5	12.5	50
9	20	15	22.5	17.5	75
10	10	7.5	5	7.5	30
11	15	10	12.5	12.5	50
12	15	10	12.5	12.5	50
13	15	17.5	20	10	63
14	15	15	17.5	20	68
15	12.5	12.5	10	10	45
16	17.5	12.5	12.5	12.5	55
17	12.5	12.5	15	12.5	53
18	12.5	12.5	15	12.5	53
19	22.5	20	22.5	20	85
20	12.5	12.5	15	12.5	53
21	12.5	7.5	7.5	5	33
22	25	22.5	22.5	22.5	93
23	15	10	12.5	12.5	50
24	20	17.5	12.5	12.5	63
25	15	10	12.5	12.5	50
SUM	392.5	342.5	362.5	330	1428
AVERAGE	15.7	13.7	14.5	13.2	57.1

According to table 2, the class average score for all vocabulary assessment indicators only reached 57.1, and the pre-test assessment shows that nearly 80% of students in the class received results below the minimum standard score of 65. More information can be found in Table 3 and Fig. 1 below:

Table 3. Percentage of Vocabulary Pre-Test Results

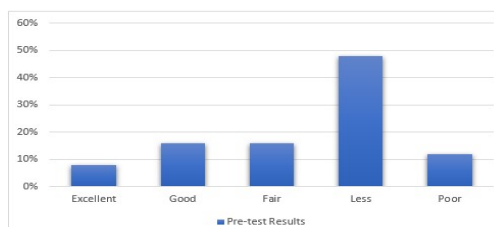| No.	Score Range	Number of Students	Percentage	Classification
1	85 – 100	2	8%	Excellent
2	65 – 84	4	16%	Good
3	55 – 64	4	16%	Fair
4	35 -54	12	48%	Less
5	0 – 34	3	12%	Poor
	Total	25		

Fig.1 Percentage of Vocabulary Pre-Test Results

As shown by Table 3 and Fig.1, the vocabulary mastery of first semester General English class students is still low. Only 24% of students passed the test, with 8% being in the "Excellent" category and 16% being in the "Good" category. While the rest are distributed into the following categories, the majority are students who belong into the "Less" category by up to 48% and 12% fall into the "Poor" category.

4.1.1 Implementation of Game-Based Learning Method in Cycle 1

Based on the results of the initial observations and the results of the pre-test in this class, the researcher then made a plan for the implementation of cycle 1. The researcher determined the theme and type of game to be played, prepared the necessary tools and materials, organized the steps of the game and its rules, and determined the learning process objectives, which refer to the four indicators to be achieved through the application of this game method, namely:

Table 4. Vocabulary Learning Indicators

No	Indicators
1	Pronunciation : Students are able to pronounce words correctly
2	Spelling : Students are able to spell words correctly
3	Meaning : Students are able to explain the meaning of words correctly
4	Grammar : Students can correctly use words they have just learned in context in sentences.

The first theme for cycle 1 was Daily Life, with Food as the first sub theme. The Line was the first game chosen for play. In this game, students were divided into small groups of no more than five people. Because this class has 25 students, they were divided into 5 small groups. Two groups were chosen to compete against each other in the first round. The stages of this game were as follows: First, students from each group, Groups A and B, were asked to form a line facing the board. Next, the referee (teacher) drew a line on the board to separate them. The referee explained the game's rules and scoring, where students had to be able to pronounce and write words correctly, with each word related to the theme receiving a score of 3, non-related words receiving a score of 2, and misspellings receiving a score of -1. The first student in line said a word and then wrote it on the board. He then handed the pen to the next student and returned to his group's back row. The second student must try to say and write a new word using the last letter of the previous word spoken and written by the first student. For example, if the first student says and writes "French Fries," the second student will continue by mentioning and writing a new word beginning with the letter "S" from "French Fries." He might have written "Steak" or "Sausage," for example. Count the points earned at the end of the game to determine who won.

After the completion of the game, students' words spoken and written were reviewed. If there were spelling and pronunciation errors, the teacher encouraged students to try to improve by giving an example of how to pronounce the word correctly and encouraging them to use it in sentences. Using this game, the teacher could also teach about the various types of words related to the theme, such as nouns, adjectives, and verbs. Aside from this game, the teacher also played other games like Guess the Picture / Pictionary and crossword puzzles to teach the meaning of a word using pictures or flashcards.

The teacher also used games like "Pick Me Up" to teach students how to use the vocabulary they have learned. In this game, the teacher has written various vocabulary related to the theme on small folded papers. The teacher got a box ready to hold all of the papers. Students were divided into groups, and the teacher selected the first two groups to compete in this game. The teacher explained how to play this game, which requires each group member taking turns taking a paper from a box and quickly using the word written on the

paper in the correct sentence. This game had a timer, so whoever answered quickly and correctly won. After the game was finished, the teacher provided immediate feedback.

The teacher can use more than one game to teach vocabulary in a theme. The researcher and team observed the learning process and results as the students played the game. After these games had been played, reviewed, and feedback on the students' performance had been given, a test was given as an evaluation. The following tables and figure show the results obtained by students following the implementation of Cycle 1:

Table 5. Evaluation Results of the Four Indicators in Cycle 1 (Test 1)

Students' code	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Total Score
1	22.5	20	22.5	20	85
2	15	15	15	10	55
3	20	17.5	17.5	15	70
4	20	17.5	20	15	73
5	20	15	15	12.5	63
6	22.5	20	22.5	20	85
7	20	17.5	17.5	17.5	73
8	20	17.5	12.5	10	60
9	22.5	20	22.5	20	85
10	15	15	10	12.5	53
11	20	15	15	12.5	63
12	20	12.5	12.5	12.5	58
13	22.5	22.5	20	17.5	83
14	22.5	20	22.5	20	85
15	15	12.5	12.5	10	50
16	22.5	20	20	20	83
17	12.5	12.5	15	12.5	53
18	25	25	15	15	80
19	22.5	22.5	20	20	85
20	22.5	20	15	17.5	75
21	15	12.5	10	12.5	50
22	22.5	22.5	20	20	85
23	17.5	15	15	15	63
24	22.5	22.5	20	17.5	83
25	12.5	15	15	10	53
SUM	492.5	445	422.5	385	1745
AVERAGE	19.7	17.8	16.9	15.4	69.8

The results of the evaluation of the four indicators in cycle 1 are shown in table 5, where the class average score for vocabulary mastery at the pre-test only reached 57.1 but increased to 69.8 after the Game-Based Learning method was applied. At the time of the pre-test, two indicators had the lowest average results: indicator 2 (Spelling) and indicator 4 (Grammar), where students could pronounce words correctly but frequently made spelling mistakes. When it comes to using the words they've learned in sentences, students frequently make errors, whether they're related to word formation/sentence structure or other simple things like plural and singular forms. This issue, however, could be resolved by using the Game-Based Learning method in cycle 1. Table 5 shows that the average value for indicators 2 and 4 has increased significantly. Despite an increase in the class average score, the percentage of students who achieved the standard score was still below the target. More information can be found in Table 6 and Fig. 2 below:

Table 6. Student Vocabulary Evaluation Results After Cycle 1 (Test 1)

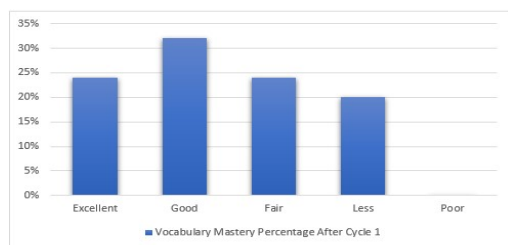| No.	Score Range	Number of Students	Percentage	Classification
1	85 – 100	6	24%	Excellent
2	65 – 84	8	32%	Good
3	55 – 64	6	24%	Fair
4	35 -54	5	20%	Less
5	0 – 34	-	-	Poor
	Total	25		

Fig.2 Vocabulary Mastery Percentage After Cycle 1

According to the results of cycle 1, the percentage of students who successfully complete the test or achieve the standard score is 56%, with the highest percentage is 32% in the "Good" category. When compared to the previous pre-test results, this number has almost doubled. Furthermore, 24% of the students belong into the Excellent category. The increase in this category was quite significant, as only 8% of all students previously made it into the category. Although this overall result has not yet met the goal, progress has been made. Students' vocabulary mastery has improved significantly. Following the implementation of the Game-Based Learning method in cycle 1, it appears that there are no more students classified as "Poor". When this method was first used, especially in the first game of the first round, the class atmosphere remained tense because students were unfamiliar with it. However, as the next round and other games approached, the atmosphere in the class began to relax. Because the percentage of students who achieved the minimum standard score had not yet reached the target, planning and implementing actions were continued in cycle 2.

4.1.2 Implementation of Game-Based Learning Method in Cycle 2

Before beginning cycle 2, the teacher went over the vocabulary that had been studied in the previous cycle. This review was completed quickly and efficiently, and because it used the Game method and a ball, it was labelled Vocabulary Game with a Ball. This game began with the teacher saying the sentence "I know 5 words for...", such as "I know 5 words for Food," and then the teacher quickly and randomly threw the ball into the hands of 5 students. Students who caught the ball from the teacher must say one word related to Food right away.

Cycle 2's theme was Business People, with a sub-theme titled Job. Cycle 2 included several games for teaching vocabulary, including The Line or Board Race, Pictionary, Guess the Word, Crosswords, and Word Jumble. The last two games were played manually in the classroom using paper media and online using the Quizziz application. The steps remain the same as in the previous cycle, with the teacher introducing the game to be played, explaining the steps and rules of the game, as well as the goals to be achieved. An evaluation was carried out following the implementation of the action. The following tables and figure show the results obtained by students after applying cycle 2:

Table 7. Evaluation Results of the Four Indicators in Cycle 2 (Test 2)

Students' code	Indicator 1	Indicator 2	Indicator 3	Indicator 4	Total Score
1	25	25	22.5	22.5	95
2	17.5	15	15	15	63
3	20	20	20	17.5	78
4	22.5	20	20	17.5	80
5	22.5	22.5	20	17.5	83
6	25	22.5	22.5	22.5	93
7	22.5	20	20	20	83
8	22.5	22.5	17.5	15	78
9	22.5	22.5	22.5	22.5	90
10	22.5	20	17.5	17.5	78
11	22.5	17.5	17.5	15	73
12	22.5	17.5	17.5	17.5	75
13	22.5	22.5	20	20	85
14	22.5	22.5	22.5	20	88
15	17.5	15	15	15	63
16	22.5	22.5	20	20	85
17	17.5	17.5	17.5	15	68
18	25	25	20	17.5	88
19	25	25	25	22.5	98
20	20	22.5	20	20	83
21	15	12.5	12.5	12.5	53
22	25	25	22.5	22.5	95
23	22.5	20	20	20	83
24	22.5	22.5	20	20	85
25	17.5	17.5	17.5	17.5	70
SUM	542.5	515	485	462.5	2005
AVERAGE	21.7	20.6	19.4	18.5	80.2

Table 7 demonstrates that students' vocabulary mastery is improving. The average score for all indicators increased from 69.8 in cycle 1 to 80.2 after cycle 2. Of course, the average value for each indicator rises. For example, indicators 2 (Spelling) and 4 (Grammar), which had unsatisfactory results at first, now appear to be improving. In particular, indicator 2 (Spelling), which was only 13.7 at the time of the pre-test, increased to 17.8 in cycle 1 and continued to rise after cycle 2 to 20.6. The researchers used the game "Listen and Repeat" to study spelling in specific. Students were still divided into groups in this game. Starting with the first member of the group, he took a piece of paper in a box, silently read the written word, and spelled the word whispered into the ear of his fellow group members, and so on. The person who was the last to whisper was in charge of spelling the word whispered aloud and writing it on the board. This game necessitates collaboration.

According to the observations, the students were very enthusiastic regarding participating in each game. Every student was unconsciously already actively involved and enthusiastic in learning. The classroom atmosphere became more fun, students' creativity was stimulated, and students were fully engaged in learning, resulting in satisfactory results after cycle 2. Table 8 and fig. 3 show the results of the evaluation of students' vocabulary mastery after cycle 2.

Table 8. Vocabulary Evaluation Results After Cycle 2

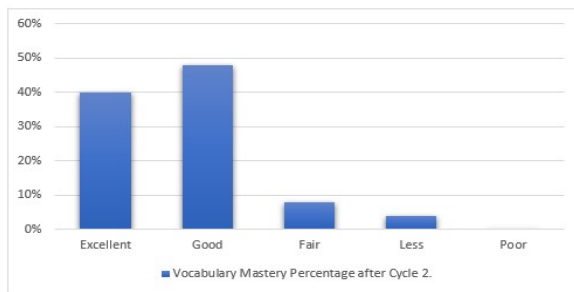| No.	Score Range	Number of Students	Percentage	Classification
1	85 – 100	10	40%	Excellent
2	65 – 84	12	48%	Good
3	55 – 64	2	8%	Fair
4	35 -54	1	4%	Less
5	0 – 34	-	-	Poor
	Total	25		

Fig. 3 Vocabulary Mastery Percentage after Cycle 2

Table 8 and Fig. 3 show that when the Game method is used in the learning process, the percentage of students' vocabulary mastery increases. The target set can be achieved where 88% of students are able to reach the standard score of 65 and above. Figure 3 shows that the highest percentage is in the Good category, with 48% of students, followed by 40% in the Excellent category. The remaining 8% fall into the Fair category, while 4% fall into the Less category.

The success indicator of this research is when 85% of students get a score of 65 and above, so it can be concluded that classroom action research using the Game-Based Learning method can improve the quality of the vocabulary learning process and can increase students' vocabulary mastery.

V. CONCLUSION

This paper discusses the application of the Game-Based Learning method in the EFL class to improve students' vocabulary mastery. The application of this method is done in two cycles. The findings of this study show that before using this method, students' vocabulary mastery was very low. Only 24% of all students passed the pre-test. In cycle 1, after using the Game method to learn vocabulary, the results for each indicator improved significantly. The percentage of students passing the first test rose to 56%. Although there has been a significant increase, it has not yet reached the success indicator of 85%. As a result, the study progressed to cycle 2, and the results of the cycle 2 evaluation revealed that the percentage of students' vocabulary mastery increased to 88%. The author claims that the Game-Based Learning method can improve the quality of the vocabulary learning process and students' vocabulary mastery.

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