The Effectiveness of Kahoot Game in Improving Students' Vocabulary Mastery

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ABSTRACT

The objective of this research is to find out if the use of Kahoot Game can improve students' vocabulary mastery of SMA Negeri 8 Palu. This research used quasi-experimental design that consisted of two groups; experimental and control group. The samples of this research was the eleventh grade students of SMA Negeri 8 Palu; IPA 2 with 27 students as the experimental group and IPA 3 with 25 students as the control group that selected by using purposive sampling. The data was collected by administering test consisted of a pre-test and post-test that conducted at first and last meetings. Then the treatment was only given to the experimental group. The result of experimental group's pre-test is 39.44, while control group is 34.6. The result of experimental group's post-test is 77.03, while control group is 61.2. By applying 0.05 level of significance, the researcher found that the value of the t-counted (3.31) is higher than the t-table (1.677). In conclusion, the use of Kahoot Game in teaching vocabulary is effective to improve students' vocabulary mastery of SMA Negeri 8 Palu. Based on these results, it implies that Kahoot Game can be applied by teachers in teaching and learning process as one of effective strategy to improve students' vocabulary mastery.

Keywords: *Improve, Vocabolary, Kahoot Game*

INTRODUCTION

Vocabulary is one of the foundational language components, and it refers to successful communication because a limited of words will cause misunderstanding and confusion. Therefore, vocabulary is necessary to encourage student's language skills, especially those

with limited words. Without vocabulary, language means nothing. The students will not be able to say and express anything. However, they do not only know about new words, but they use those words in learning English. The mastery of a decent vocabulary is critical for successful second language use because, without a comprehensive vocabulary, we will be incapable of using the structures and objectives we may have learned for understandable conversations.

Based on the 2013 curriculum, vocabulary must be taught and learned in Senior High School. SMA Negeri 8 Palu uses the 2013 curriculum as guidance in the teaching and learning process. Curriculum 2013 emphasizes greatly in building student's characters, developing relevant skills based on student's interests and needs, and developing a thematic approach that benefits student's cognitive abilities (Putra, 2014). It means that vocabulary should be integrated with the process of learning, which is based on the school curriculum. In other words, any sort of strategies used to attain the aim of vocabulary mastery should be provided properly by all language teachers.

However, in reality, many students still have difficulties learning the language, especially in learning vocabulary. The students still have difficulties learning new vocabulary items since the teaching technique is not effective. The traditional method is usually used by looking for difficult words and finding the meaning in the dictionary, and students are supposed to memorize the words. They were lazy to memorize the unfamiliar words that they heard or read in the text. They had difficulties understanding or comprehending the meanings of unfamiliar words and memorizing new words.

Based on the preliminary research on September 20th 2022, the researchers interviewed the teacher of the eleventh-grade students of SMA Negeri 8 Palu. The teacher said that some students still have many problems in mastering English words. The teacher stated that the students lack the vocabulary to improve their speaking or writing tasks. And then, some of the students were not able to identify the meaning of the word. The teacher stated that the students do not understand the meaning of the word when the teacher teaches them in class. Some of the students are not able to use and produce the word in the task of speaking and writing. Some of the students do not have good memorizing skill, and the students sometimes forget some words that the teacher have given.

From the phenomena above, the researchers found that some students in the eleventh grade of SMA Negeri 8 Palu got difficulties in English because the students lacked the vocabulary, and they were not interested in learning English because the teacher's technique was not effective in making highinterest in learning vocabulary. The researchers realized that the students needed new media to improve their vocabulary mastery. It is also supported in this new era when technological advancement grows rapidly. This is caused by the effects of globalization that change the human life pattern from the traditional era into the digital era.

Nowadays, teenagers are very familiar with technology. According Almanar (2019) stated that technology is becoming a part of their life. Applications that are installed on

their phones connect them to their study, work, and social networking. However, the utilization of technology in the teaching and learning process is still less where a smartphone is mostly seen as a means of communication or entertainment, despite its potential to aid students in developing their skills and learning a new vocabulary of a foreign language, especially English. According to Chen, Tseng, and Hsiao (2018), technology is being increasingly integrated as a part of teaching in view of enhancing student's engagement and motivation.

So, the researchers tried to find a new media to improve the student's vocabulary mastery. One of the well-known software or site that uses a game tolearn a foreign language is the Kahoot application. With its game-based learning platform, Kahoot can help students to increase their vocabulary mastery. According to Almanar (2019), Kahoot had a significant effect on the student's vocabulary mastery, and Kahoot gave the students experiences of integrated language learning in student's vocabulary mastery. It means using the Kahoot application to improve student's vocabulary mastery is an appropriate solution to solve the student's problems.

Based on the problems above, this research aims to find out the influence of using the Kahoot application to improve the student's vocabulary mastery. Therefore, the researchers is interested in carrying out the research entitled: "The Effectiveness of Using Kahoot Game in Improving Vocabulary Mastery at The Grade Eleventh Students of SMA Negeri 8 Palu".

LITERATURE REVIEW

The first study was conducted by Putri (2019) about "The effectiveness of using Kahoot Game to improve student's vocabulary comprehension". The aim of her research is to test the effects of applying the Kahoot Game application in enhancing the vocabulary understanding of students in the seventh grade at SMP Negeri 15 Semarang during the academic year 2019/20120. The data analysis revealed a significant difference between the two groups. The experimental group's pre-test and post-test mean scores grew more (from 74.45 to 86.81) than the control group's (from 72.10 to 81.04). It indicates that the accomplishment of students who were taught using the Kahoot Game application differs substantially from that of students who were taught using traditional methods of teaching vocabulary for seventh-grade students at SMPN 15 Semarang during the academic year 2019/2020.

The second study was conducted by Quiroz, Gutierrez, Rocha, Valenzuela, and Vilches (2021). The title is " Improving English vocabulary learning through Kahoot: a quasi-experimental high school experience". Utilizing a quasi-experimental post-test approach, this study explores the benefits of using Kahoot to increase English vocabulary learning in an EFL environment. The study included an experimental and a control group from two ninth-grade courses. Both groups were given a pre-and post-test, and their results were compared tosee whether there was any difference. The interventions in each group lasted four weeks and consisted of two lessons each week. This study's conclusions are similar to what previous studies have found. Kahoot may be utilized to achieve significant differences in scores when compared to traditional learning techniques.

The last study was conducted by Rizky (2022) about "The use of Kahoot game on student's vocabulary knowledge." The purpose of this research is to find out whether the Kahoot Game effect vocabulary skills in class VIII students MTs Nur Falah Parung. This research involved 30 students of class IX Mts Nur Falaah Parung as a research sample. The research method is a quantitative method with a quasi-experimental design. To collect data, this research used pre-test and post-test. The subject of this research is divided into two, namely the experimental group and the control group. The author has compared student's vocabulary skills before and after being given treatment. The t-test formula is used to analyze the narrative speaking skill urge student. The results showed that the statistical calculations on degrees of the significance of the p-value (0.025) are lower than sig $\alpha = 0.05$ (5%). These findings showed no statistically significant difference in the post-test results between the experimental group and the control group. In other words, influence using Kahoot Games on student's narrative speaking skills have a significant influence. The purpose of this research is to find out whether the Kahoot Game effect vocabulary skills in class VIII students MTs Nur Falah Parung. This research involved 30 students of class IX Mts Nur Falaah Parung as a research sample. The research method is a quantitative method with a quasi-experimental design. To collect data, this research used pre-test and post-test. The subject of this research is divided into two, namely the experimental group and the control group. The author has compared student's vocabulary skills before and after being given treatment. The t-test formula is used to analyze the narrative speaking skill urge student. The results showed that the statistical calculations on degrees of the significance of the p-value (0.025) are lower than sig $\alpha = 0.05$ (5%). These findings showed no statistically significant difference in the post-test results between the experimental group and the control group. In other words, influence using Kahoot Games on student's narrative speaking skills have a significant influence.

After reviewing the three studies mentioned above, it can be seen that this study also used a quasi-experimental design similar to the previous research design applied in the three previous studies. However, this research and the three previous studies have different levels of education and also the scope of the material taught. The scope of material for the three previous studies is about general only nouns. Meanwhile, in this study, the researcher focused on general vocabulary, which includes nouns, verb and adjectives. The three previous studies only conducted research in the junior high school, while this research was conducted in the senior high school environment. In short, the researcher wanted to prove if the use of Kahoot Game can be successfully carried out at every level of education, namely SMP, SMA, and university.

METHOD

In this research, the researchers used a Quasi-experimental design. There were two classes involved: experimental and control class. The experimental class was given a pre-test, treatment, and post-test. Meanwhile, the control class was given pre-test and post-test without treatment. These two groups were given the same pre-test and post-test. The design of this research design, as proposed by Sugiyono (2019):

Experimental group:
Control group:

$$O_1 \ X \ O_2$$

$$O_3 \quad O_4$$
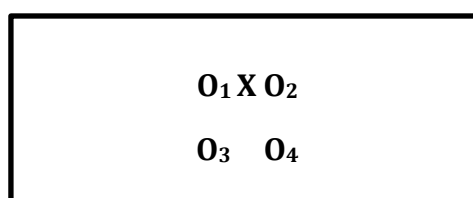
Where:
O_1O_3 = Pre-test
X = Treatment
O_2O_4 = Post Test

After giving a pre-test at the first meeting to the two groups, the researchers gave treatment using Kahoot Game to the experimental group, while the control group was not given any treatment. In short, the control group received only conventional teaching strategies. Then the researchers conducted a post-test at the last meeting to see the impact of the treatment.

The population of this research was the eleventh-grade students of SMA Negeri 8 Palu in the academic year 2022/2023. It is divided into four classes, XI IPA 1 with 27 students, XI IPA 2 with 27 students, XI IPA 3 with 25 students, and XI IPS with 19 students. The total population is 98 students, as seen in the table below:

Table 1: Population and sample

Classes	Number of Students
XI IPA 1	27
XI IPA 2	27
XI IPA 3	25
XI IPS	19
TOTAL	98

The researchers used purposive sampling teahnique to take a sample of this research. According to Arikunto (2010), Purposive sampling is the process of selecting a sample by taking a subject that is not based on the level or area but it is taken based on the specific purpose. Purposive sampling is an acceptable kind of sampling for special situations. It uses the judgment of an expert in selecting cases, or it selects cases with a specific purpose in mind. Purposive sampling is used most often when a difficult-to-reach population needs to be measured. Researchers took samples from classes based on information from the school and teachers, where it is known that their students in that class have the same problem, namely problems in English vocabulary. Therefore, the researchers used a purposive sampling technique.

Test is an instrument used to collect data for this research. The purpose of this test was to get accurate data. Pre-test was used to collect the data about student's vocabulary mastery before they were taught by using the Kahoot application. In the research, the researcher was used these types of tests. They were multiple choice, matching test, and completion tests. Posttest was used to collect data about student's vocabulary mastery after they were taught by using the Kahoot application. In this test, the researcher was used multiple choices, matching tests, and completion test types based on the indicators of vocabulary tests on the Kahoot application.

Table 1: Kinds of Test

Part	Types of Test	Items	Score	Maximum score
A	Multiple Choices	10	1	10
B	Matching Test	5	1	5
C	Completion Test	5	1	5
	Total score	**20**		**20**

Table 2: Scoring of Test

Description	Score
If the answer is correct	1
If the answer is incorrect	0
No answer	0

Adapted from: Kurikulum 2013 (K-13)

Table 3: Level of Categorization

No.	Criteria	Score
1.	Excellent	90-100
2.	Good	80-89
3.	Fair	70-79
4.	Failed	0-69

(Adapted from SMA Negeri 8 Palu)

Related to the implementation of the test, the researchers also adapted the level of categorization from the school. The table above serves to see whether the students' score exceeds the passing grade or not. It can be seen that the passing grade of SMA Negeri 8 Palu is 70, which means that if students get a score of 69 or below, they can be categorized as failed.

FINDINGS AND DISCUSSION

FINDINGS

In this research, the researchers applied two kinds of test, those are pretest and posttest. The test purpose is to compare the vocabulary mastery of the both test.The treatment is done in six meetings.

Regarding the pre-test, it was carried out on February 15rd 2023. Based on the table below, there were 27 students in the class. The total of the students' score was 1065.00 while for the students' mean score in pre-test was = 39.44

Table 5: The Students' score in Pre-test (Experimental Group)

No.	Initial Names	Maximum Score	Raw Score	Standard Score	Criteria
1.	MAF	20	3	15.00	Failed
2.	MS	20	11	55.00	Failed
3.	DIR	20	5	25.00	Failed
4.	BY	20	8	40.00	Failed
5.	DP	20	9	45.00	Failed
6.	INA	20	9	45.00	Failed
7.	RDS	20	9	45.00	Failed
8.	AN	20	8	40.00	Failed
9.	NST	20	9	45.00	Failed
10.	HR	20	14	70.00	Fair
11.	FD	20	15	75.00	Fair
12.	FK	20	15	75.00	Fair
13.	FR	20	13	65.00	Failed
14.	NR	20	9	45.00	Failed
15.	MD	20	5	25.00	Failed
16.	RA	20	4	20.00	Failed
17.	DA	20	6	30.00	Failed
18.	ASW	20	7	35.00	Failed
19.	FL	20	5	25.00	Failed
20.	AN	20	11	55.00	Failed
21.	MF	20	9	45.00	Failed
22.	FF	20	3	15.00	Failed
23.	HK	20	2	10.00	Failed
24.	KA	20	6	30.00	Failed
25.	MH	20	6	30.00	Failed
26.	RP	20	7	35.00	Failed
27.	YS	20	5	25.00	Failed
Total				1065.00	
Mean Score Pre-test				39.44	

Based on the table, it can be seen that the highest score is 75.00. and the lowest score is 10.00. Referring to the passing grade score of the school, 3 students passed the pre-test and 24 students failed it. After getting the students' individual scores of experimental group, the researcher calculated the mean score by using formula purposed by Arikunto (2013) and it is:

$$M = \frac{\sum x}{N}$$

$$= \frac{1065.00}{27}$$

$$= 39.44$$

Table 6: The Students' score in Pre-test (Control Group)

No.	Initial Names	Maximum Score	Raw Score	Standard Score	Criteria
1.	AGS	20	5	25.00	Failed
2.	PTR	20	12	60.00	Failed
3.	ARJ	20	6	30.00	Failed
4.	DIN	20	7	35.00	Failed
5.	SDS	20	7	35.00	Failed
6.	AFN	20	8	40.00	Failed
7.	ALY	20	10	50.00	Failed
8.	BNG	20	8	40.00	Failed
9.	HRS	20	4	20.00	Failed
10.	SYN	20	7	35.00	Failed
11.	EF	20	6	30.00	Failed
12.	FL	20	8	40.00	Failed
13.	SD	20	1	05.00	Failed
14.	NH	20	10	50.00	Failed
15.	CT	20	7	35.00	Failed
16.	YN	20	11	55.00	Failed
17.	AL	20	6	30.00	Failed
18.	RS	20	8	40.00	Failed
19.	NPS	20	10	50.00	Failed
20.	BSR	20	5	25.00	Failed
21.	AR	20	4	20.00	Failed
22.	ASK	20	4	20.00	Failed
23.	APR	20	4	20.00	Failed
24.	AF	20	7	35.00	Failed
25.	CSR	20	8	40.00	Failed
Total				865.00	
Mean Score Pre-test				34.6	

Based on the table, it can be seen that the highest score is 60.00 and the lowest score is 05.00. Referring to the passing grade of the school, there were 25 students failed the test.

After getting the students' individual scores of control group, the researcher calculated the mean score by using the same formula as previous and it is:

$$M = \frac{\sum x}{N}$$

$$= \frac{865.00}{25}$$

$$= 34.6$$

Table 7: The students's Score in Post-test (Experimental Group)

No.	Initial Names	Maximum Score	Raw Score	Standard Score	Criteria
1.	MAF	20	13	65.00	Failed
2.	MS	20	15	75.00	Fair
3.	DIR	20	14	70.00	Fair
4.	BY	20	14	70.00	Fair
5.	DP	20	16	80.00	Good
6.	INA	20	17	85.00	Good
7.	RDS	20	16	80.00	Good
8.	AN	20	14	70.00	Fair
9.	NST	20	17	85.00	Good
10.	HR	20	19	95.00	Excellent
11.	FD	20	17	85.00	Good
12.	FK	20	18	90.00	Excellent
13.	FR	20	19	95.00	Excellent
14.	NR	20	15	75.00	Fair
15.	MD	20	16	80.00	Good
16.	RA	20	11	55.00	Failed
17.	DA	20	17	85.00	Good
18.	ASW	20	12	60.00	Failed
19.	FL	20	11	55.00	Failed
20.	AN	20	18	90.00	Excellent
21.	MF	20	16	80.00	Good
22.	FF	20	17	85.00	Good
23.	HK	20	15	70.00	Fair
24.	KA	20	12	60.00	Failed
25.	MH	20	13	65.00	Failed
26.	RP	20	18	90.00	Excellent
27.	YS	20	17	85.00	Good
Total				2080.00	
Mean Score Post-test				77.03	

Based on the table, it can be seen that the highest score is 95.00 and the lowest score is 55.00. Referring to the passing grade of the school, 21 students passed the post-test and 6 students failed it. The results showed 6 students achieved fair criteria, 8 students achieved good criteria and 4 students achieved excellent criteria. After getting the students' individual scores of experimental group, the researcher calculated the mean score by using formula purposed by Arikunto (2013) and it is:

$$M = \frac{\sum x}{N}$$
$$= \frac{2080.00}{27}$$
$$= 77.03$$

Table 8: The students's Score in Post-test (Contrul Group)

No.	Initial Names	Maximum Score	Raw Score	Standard Score	Criteria
1.	AGS	20	11	55.00	Failed
2.	PTR	20	14	70.00	Fair
3.	ARJ	20	10	50.00	Failed
4.	DIN	20	9	45.00	Failed
5.	SDS	20	15	75.00	Fair
6.	AFN	20	12	60.00	Failed
7.	ALY	20	15	75.00	Fair
8.	BNG	20	11	55.00	Failed
9.	HRS	20	10	50.00	Failed
10.	SYN	20	11	55.00	Failed
11.	EF	20	11	55.00	Failed
12.	FL	20	12	60.00	Failed
13.	SD	20	9	45.00	Failed
14.	NH	20	12	60.00	Failed
15.	CT	20	14	70.00	Fair
16.	YN	20	16	80.00	Good
17.	AL	20	13	65.00	Failed
18.	RS	20	14	70.00	Fair
19.	NPS	20	15	75.00	Fair
20.	BSR	20	11	55.00	Failed
21.	AR	20	17	85.00	Good
22.	ASK	20	10	50.00	Failed
23.	APR	20	12	60.00	Failed
24.	AF	20	9	45.00	Failed
25.	CSR	20	13	65.00	Failed
Total				1530.00	
Mean Score Post-test				61.2	

Based on the table, it can be seen that the highest score is 85.00 and the lowest score is 45.00. Referring to the passing grade of the school, 8 students passed the post-test and 17 students failed it. The results showed 6 students achieved fair criteria, 2 students achieved good criteria. After getting the students' individual scores of control group, the researcher calculated the mean score by using the same formula as previous and it is:

$$M = \frac{\sum x}{N}$$
$$= \frac{1530.00}{25}$$
$$= 61.2$$

DISCUSSION

The purpose of this research is to improve students' vocabulary mastery by using Kahoot Game. After distributing the test, implementing the treatment to the experimental group, calculating and finding the data both of group, the purpose of this research is indicated achieved.

Furthermore, when conducting pre-test and referring to the passing grade of the school, in the experimental group; 3 students passed and 24 failed, while in the control group, none of the students passed the test. In addition, in the experimental group, 3 students achieved fair criteria, while in the control group, none of the students passed the test all the results failed. It indicates that for the pre-test, the number of students in the experimental group was more successful in achieving the passing grade than students in the control group.

However, the post-test showed a significant change. In the experimental group, 21 students passed and 6 failed, while in the control group, 8 students passed and 17 failed. In addition, in the experimental group, 6 students achieved the fair criteria, 8 students achieved the good criteria, and 4 students achieved the excellent criteria, while in the control group, only 6 students achieved the fair criteria. It showed that in post-test, the number of students in the experimental group is more successful in achieving the passing grade than students in the control group.

The researchers indicates that it is occurred because the effect of the treatment. In the early of implementation of the Kahoot Game, the researchers found that students tended to feel confused in determining which words were included in adjective. This is evidenced from the results of students' work in the first meeting until the fourth meeting; they made more mistake in the adjective part and most correct in the noun part. This is because they often use nouns and verbs more than adjectives. Moreover, this is the first time they have heard that adjectives are classified into descriptive adjectives.

However, the intensity of implementation of Kahoot Game at the fifth and sixth meetings showed that students have a significant change in their ability to determine verbs. The results of their showed that they managed to find many common nouns, action verbs, and adjective words. They also know how to use these words in a sentence. Therefore, this proves that the treatment carried out by the researchers in the experimental group is success in making students accustomed to using nouns, verb and adjectives so that their vocabulary mastery could be said increase compared to when they have not received treatment.

The results of this study show that Kahoot helps students to get involved and encourages interaction in the classroom for both students and teachers. The finding corroborates the studies of Putri (2019), Quiroz, Gutierrez, Rocha, Valenzuela, and Vilches (2021), Risky 2022). Students are motivated to pay attention to the vocabulary test that they want to do well at Kahoot. This helps students to be involved in the tests that the teacher has given. Kahoot! also stimulates competition in classrooms where students are encouraged to see their names on the leader board and thus it leads them to be more considerate during the vocabulary test. The effect of increasing attention and competition is consistent with Wang's (2015) findings, where students demonstrate more attention and motivation for using game-based student response. Furthermore, teachers must also strike a balance between testing students on new content to maintain their attention and maximizing the effectiveness of Kahoot as a learning tool.

Furthermore, in the implementation of the Kahoot Game, there are several weaknesses found by the researchers; namely, that this strategy takes a long time to use, so the researchers must prepare a structured arrangement of activities so that learning can run according to the estimated time. In addition, Putri (2019) stated that during the research using this strategy, she had difficulty in getting students' focus on specific information in the text because this strategy emphasizes only the important vocabulary found in the text. Basically, the researchers also got the same problem, so the researchers had to explain the specific information in the text separately so that the students understood it.

Even though there are some weaknesses in its use, the Kahoot game has proven to be successful in improving students' vocabulary mastery. The indication of the result are supported by previous studies; Risky (2022) claims that the learning process using a Kahoot game could significantly improve the vocabulary mastery of junior high school students. Furthermore, Putri (2019) also exposes that the use of a Kahoot game can improve vocabulary mastery of junior high school students. Those clarify that the use of a Kahoot game is effective in improving students' vocabulary mastery at various levels of education, namely SMP, SMA, and University.

CONCLUSION

Kahoot Game is effective to improve students' vocabulary mastery at SMA Negeri 8 Palu. It can be seen from the results of the data analysis that the mean score of the post-test for the experimental group (77.03) is higher than the mean score of the post-test for the control group (61.2). The mean score of the post-test for the experimental group also had a significant change from the mean score of the pre-test (39.44). In addition, it can also be proven by looking at the t-count value (3.31), which is higher than the t-table value (1.677). It means that the researcher's hypothesis in this study is accepted

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