The Effect of Using Kahoot! Application on Junior High School Students' Vocabulary Achievement in Jember

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Abstract

The purpose of this research was testing whether or not Kahoot! Application has a significant effect on students' vocabulary achievement. Thus, a quasi-experimental research design was applied. This research conducted this study on September – October 2023 and involved 68 students as the sample participants. They were divided into two groups, experimental and control groups. Those classes did vocabulary exercise that given by the researcher. Each exercise asked the students to find the English meaning of certain words. The different of those groups was the treatment. In experimental group, Kahoot! Application was used as the treatment, while the control group did the vocabulary exercises by using regular paper. After did the treatment for three times, each groups had a post- test in the form of multiple-choice. Based on the post-test result, the experimental group got a mean score of 94.65 and 90.26 for the control group. Then, the researcher used SPSS to analyze the data by employing an independent sample t-test to make a valid conclusion. The result showed that the value of Sig. 2-tailed was 0.04, which was lower than 0.05. It could be stated that there was a significant difference between the experimental and the control groups. Therefore, the Kahoot! Application can be used as teaching media for learn vocabulary.

Keywords: Kahoot! Application; Vocabulary Achievement; Gamification

Introduction

The English language has several skills. They are speaking, reading, writing and listening. In order to master these skills, learners should know the vocabulary in English and its meaning. Nation (2011) explains that vocabulary plays an important role in mastering these four English skills. Developing techniques and disciplines in learning vocabulary will make learners successful in mastering English (Dubiner, 2017). If learners do not have enough

vocabulary knowledge, they may not achieve the desired results in their language learning (Ahmed et al., 2022).

Teachers can use different media to teach vocabulary. However, learners have different characteristics and learning styles. Inappropriate media can make learners bored and unfocused while learning. Therefore, teachers should choose appropriate media to make learners enjoy learning. The use of gamification can be a successful solution to solve these problems and turn the perceived boring learning process into a fun and enjoyable one (Kingsley & Grabner-Hagen, 2018). Gamification has been used in education to bring game mechanics into the classroom to increase motivation for both teaching and learning (Lee & Hammer, 2011; De-Marcos, Garcia-Cabot & Garcia-Lopez, 2015). According to Brigham (2015), gamification is seen as the use of game elements in a non-game context to increase motivation and engagement in learning. Kapp (2012) in Pamies-Vila et al. (2022) also suggested that gamification uses game-based methods to engage people, motivate, promote learning and solve problems. Kahoot! is one of the applications that can help students learn vocabulary in an engaging and fun way.

Kahoot! is an online application game with multiple choice quizzes that can be accessed through a web browser. This application has exciting features and visuals that students will enjoy. They can focus on the lesson and improve their task behavior by using Kahoot!. Dellos (2015) stated that learners felt very enthusiastic about learning by using Kahoot!, and this application makes it easy for learners to learn independently and creatively.

A study by Mansur and Fadhilawati (2019) showed that Kahoot! as a medium in teaching and learning vocabulary, especially in "introducing oneself" (asking and giving information related to identity), could improve the vocabulary performance of tenth grade students at Islamic Senior High School (Madrasah) in Kota Blitar. Quiroz et al. (2021) investigated the use of the ICT Kahoot! with English vocabulary learning to determine whether there was a difference in scores comparing the pre-test and post-test of two Grade 9 students. The results of the experimental treatment indicated an improvement in English vocabulary knowledge using the Kahoot! app. The same result was obtained by Medina and Hurtado (2017) in their study on the use of the online platform Kahoot! as a tool for teaching and learning vocabulary among undergraduate students from different faculties. In addition, this study also

looked at the student satisfaction survey, which showed that students enjoyed playing Kahoot! and found it easy to use.

Based on the theories and these findings, it can be concluded that Kahoot! is a useful medium for students to learn vocabulary. In addition, these previous research did not focus on investigating the effectiveness of using Kahoot! for teaching vocabulary in junior high school. Therefore, in order to fill this gap, the research investigated the effect of using Kahoot! on students' vocabulary achievement in junior high school.

Method

This research was conducted on 7th grade students of junior high school in Jember, East Java. The curriculum used in this school was curriculum 2013. The researcher did the research on September, 11th 2023 until October, 19th 2023. The table below shows the detail of the research schedule.

Table 1. Research Schedules

Time	Week	Schedules
September	Week 1	Administering the homogeneity test
	Week 2	The first treatment of the experimental group and control group
	Week 3	The second treatment of the experimental group and control group
	Week 4	The third treatment of the experimental group and control group
October	Week 1	Administering the try-out test
	Week 2	Administering the post-test

The researcher used a quasi-experimental research design to find out whether the used of the Kahoot Application affected the vocabulary achievement of grade 7th students (Maciejewski, 2018). They were two classes to be compered, experimental and control classes. In choosing those classes, the

researcher conducted a homogeneity test. Then, the result was analyzed by using Analysis of Variance (ANOVA).

Table 2. The result of

ANOVA

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	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6473.341	6	1078.890	6.028	.000
Within Groups	41701.555	233	178.977		
Total	48174.896	239			

ANOVA

The result of ANOVA analysis above showed that the F value was 6.028 with the value of the variance .000. As the value of the variance was less than 0.05, it means that the population was heterogeneous. Therefore, the researcher chose two classes that had the closest mean score to be the experimental and control groups. Those classes were VII D as the experimental group and VII C as the control group. Those groups had three times treatment. The experimental research used Kahoot! Application in learning vocabulary, while the control group used common way. Before created and given the post-test to the groups, the researcher did the try-out test first to check the validity and reliability of the questions.

Tryout Test

The researcher gave the try-out test to the class that did not belong to the experimental group and the control group. The purpose of the try-out test was to know the validity, reliability, and level of difficulty of the test. The try-out test consisted of 50 items with four options. The time allocated was 60 minutes. According to Hughes (2003), a test is valid if it measures what is supposed to measure. The researcher established content validity based on the curriculum 2013, where the students intended to be able to classify the kind of vocabulary namely nouns, verbs, adjectives, and adverbs integrated with the language skills in the basic competence.

The researcher used Split-Half technique by using Product Moment Correlation and continued by using Spearman-Brown Formula to know the reliability of the test. From the calculation, the reliability coefficient was 0,46. To gain the reliability of the test, the value was put into Spearman-Brown Formula. The result of the reliability coefficient of the whole test was 0,63 and it

categorized reliable based on Dedeli et al (2014) stated that < 0.6 categorized as low, 0.6 – 0.8 moderate and > 0.8 is good. In order to make a good test item, it should be neither too easy nor too difficult (Arikunto, 2006:140). Therefore, the difficulty index of the test should be known.

Table 3. Difficulties Level of Items

Criteria	Total Item	Item's Number
Easy	14	1, 3, 4, 8, 9, 14, 16, 34, 35, 37, 39, 46, 48, 49
Medium	32	2, 5, 7, 10, 11, 12, 13, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 38, 40, 41, 42, 43, 44, 45
Difficult	4	6, 36, 47, 50

The researcher made a post-test by inserting the items that categorized as medium and decided only use 30 items to be included in a post-test. Thus, there are two numbers that cleared by the researcher which was number 11 and 23.

Treatment Procedures

Kahoot! allows the teacher to create quizzes that students can answer and submit using a tablet, smartphone, or computer. The application displays the correct answer and score on the final screen. According to Mansur and Fadhilawati (2019), there are some steps in teaching vocabulary using Kahoot! application. They are as follows:

1. The teacher explains the material based on the learning objectives.
2. The teacher gives the quiz to the students
3. Students are instructed to open the Kahoot! application on their smartphone or laptop.
4. Teacher displays the pre-prepared quiz on the projector screen
5. Students enter the PIN displayed on the screen and are then guided through the quiz by the teacher
6. At the end of the quiz, the teacher discusses the material that is still difficult for the students and tells them to practice the vocabulary again at home.

Using Kahoot! involves a few steps for teachers and students. According to Al-Manar (2019), there are a few steps for teachers to use Kahoot!:

1. Teacher creates a Kahoot! from the web or an application on a smartphone.
2. Select which feature to use for teaching-learning
3. Create a question and the right and wrong answer
4. When the question is ready, click Finish
5. A link will appear for students to take the quiz.
6. Share the link

Steps for students to take Kahoot! Quizzes:

1. Click on the link already shared by the teacher
2. Students do not need to create an account first, so just type in a name
3. Then the quiz starts
4. Once the quiz has been completed, the score will automatically appear.

Findings

This section presents the research findings and discussions. These following points contain some explanation about the result of post-test and independent sample t-test.

Post Test and Independent Sample T-Test

Post-test was conducted by the researcher after the treatment. The questions provided in a post-test are taken from the try-out test by considering validity, reliability, and level of difficulties. The students need to answer 30 questions in 40 minutes. The post-test conducted by the teacher in different day, because of the junior high school did not allowed researcher to move the control group on the same day with the experimental group for doing the post test. After those groups already did the post-test, the researcher analyzed the result by using SPSS with an independent sample t-test that could be seen in the table below.

Table 4. The Output of the Post Test

Group Statistics

Kelas	N	Mean	Std. Deviation	Std. Error Mean

Post Test Score 7C	34	90.26	9.824	1.685
7D	34	94.65	11.004	1.887

From the table above, N column indicated the total number of the students who did the test. The experimental group and the control group consisted of 34 students. The post-test mean score of the experimental group was 94,65, while the mean score of control group was 90,26. So the mean score of the experimental group was higher than the mean score of control group. The following is the results of the vocabulary achievement post-test analyzed by using t-test formula with SPSS.

Table 5. The Output of Independent Sample T-test of Vocabulary Achievement Scores

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
						Significance					
						One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference		
		F	Sig.	t	df					Lower	Upper
Nilai Post Test	Equal variances assumed	.000	.987	-1.732	66	.044	.088	-4.382	2.530	-9.433	.668
	Equal variances not assumed			-1.732	65.168	.044	.088	-4.382	2.530	-9.434	.670

The analysis of the vocabulary achievement post-test by using t-test formula was to know the significant effect of using Kahoot! Application on the seventh-grade students' vocabulary achievement. As we can see in the table above, the significant value (2 tailed) was 0,04. As it was lower than 0,05, it could be stated that there was a significant difference between the experimental and the control groups.

Discussion

This quasi-experimental research was conducted to know whether there was a significant effect of using Kahoot! Application on the seventh-grade students' vocabulary achievement. The result of the data analysis proved that the use of Kahoot! Application affected significantly the seventh-grade students' vocabulary achievement. The value of significance (2-tailed) was 0,04, which means that was less than 0,05. Thus, it proved that there was a mean difference between the experimental and the control groups. During the

teaching and learning process, the experimental group had higher participation than control group. The researcher found that there was a different ambience between the experimental and control group. The experimental group attracted in learning vocabulary by using Kahoot! Application, thus they were focused and become more motivated to learn and doing the vocabulary exercise. While the control group said that they were bored and seemed unmotivated to participate in vocabulary learning process and doing the vocabulary exercise.

From the analysis it showed that the experimental group which was taught vocabulary by using Kahoot! Application got better scores on their vocabulary tests than the control group which was taught vocabulary without using Kahoot! Application. It could be seen from the mean score of the vocabulary post-test which showed that the experimental group got higher mean score than the control group (94,65>90,26). It means that there was a significant effect of using Kahoot! Application on the seventh-grade students' vocabulary achievement.

The same materials were given to the experimental class and the control class in this research. The difference between the experimental group and the control group was the treatment given. The experimental group was taught by using Kahoot! Application, while the control group was taught using the common medium. The experimental group showed more interest in learning than the control group during the learning process because of using Kahoot! Application as a medium. This situation was in line with Dellos (2015) that students can learn vocabulary in an engaging way with Kahoot! Application. Azizah and Jamaludin (2018) in Min et al (2022) explained that enjoyment in using Kahoot! Application has attracted students' interest to master vocabulary which indirectly increases students' motivation in learning.

Teaching vocabulary by using Kahoot! Application had been suggested by some experts because it provided various interesting features. Students could learn vocabulary by using quizzes game in Kahoot! Application. It allowed teacher to conduct quizzes and discussions with different feature such as videos, images, and documents (Mansur and fadhilawati, 2019). The music that was played when the vocabulary quizzes began was also creating a positive environment for students as stated by Hadijah et al (2020) that the effects of music audio in Kahoot! application engages students' participation. Kahoot! Application gives new fun and enjoyable experience for students in learning vocabulary by using their handphone or laptop.

Based on the explanation above, it could be concluded that the use of Kahoot! Application in teaching vocabulary was effective as the mean score of the experimental group was higher than the control group. In addition, the statistical value of this research proved that there was a significant effect of using Kahoot! Application on the Junior High School Students' Vocabulary Achievement in Jember.

Conclusion

This study was conducted to know whether if the use of Kahoot! Application had a significant effect on students' vocabulary achievement. The researcher collected the data from two classes, they were experimental and control group. After three times of treatments, the experimental group achieved a mean score of 94.65 and the control group achieved a mean score of 90.26. Then, the researcher analyzed the data by using an independent sample t-test. The result showed that the significant value (2-tailed) was 0.04 (0.04< 0.05). It indicated that there was a significant difference between the experimental group and the control group.

Based on the results of the data analysis and discussion, it could be concluded that the use of Kahoot! Application had a significant effect on the students' vocabulary achievement. The result showed that the students who were taught vocabulary by using Kahoot! Application in the experimental group got better achievement than the students in the control group who were not taught by using Kahoot! Application.

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