



The Impact of Kahoot Application on Students' EFL Learning Achievement

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Abstract

This study aims to determine the impact of the game-based learning application Kahoot on the academic performance of students at Junior High School in Sorong during their English as a Foreign Language (EFL) classes. This research employs a quantitative, pre-experimental, one-group research design. The population for this study consists of students with Class VIII K, totalling 30 students as the sample. The study utilizes pre-tests and post-tests as research instruments. Data collection techniques include administering pre-tests and gathering post-test results. Data analysis was conducted using SPSS. The results obtained from the SPSS tests demonstrate that the T-test indicates the acceptance of H1 and the rejection of H0. The analysis shows a significant improvement, with the average score increasing from 54.67 to 80.5, reflecting an improvement of 28.66%. The study included descriptive statistics, normality tests (with results of 0.189 and 0.120, indicating normal distribution), homogeneity tests, and T-tests. The T-test confirmed the acceptance of hypothesis H1, with a significance value greater than 0.05, indicating a statistically significant impact of game-based learning interventions on students' academic performance. Thus, the findings of this study suggest that the use of game-based learning applications positively affects academic students' performance.

Keywords: *EFL Students; Game-based Learning; Impact; Kahoot; Achievement*

Introduction

A current of Digital Era, makes it very easy for us in learning activities, both it makes it easier for educators and students. In learning in the digital era, educators are facilitated by the existence of various applications and software that support and help achieve learning objectives. Likewise, with assessment or assessment of students, various applications can be used by educators to help evaluate student learning outcomes. In reality education at the elementary school level is still found in the assessment system with media that has not utilized the growing technology [1]. The developments that occur in this digital era should be applied optimally. Technology can also be utilized in several aspects of education. Such as technology that can be utilized as a medium or tool in the academic development of students.

Game-based learning (GBL) is a game designed specifically for educational purposes as a supporting learning media, as it is perceived to be more engaging than traditional teaching and learning method. Game based learning is proven to be able to improve student achievement and support the process education. So that the right learning media is needed to stimulate students' learning abilities. In addition, game base learning can provide new and fun learning experiences and ways for students. So that the teaching and learning process of students is not always monotonous about learning alone.

Kahoot is a game-based learning platform designed to increase student engagement in the learning process. Using Kahoot, teachers can create interactive quizzes, discussions or surveys that allow students to actively participate through their electronic devices such as mobile phones, tablets or computers. The app provides a fun learning experience by combining elements of competition, games and immediate feedback. In the context of foreign language learning, such as English as a Foreign Language (EFL), the use of Kahoot offers many benefits. One of them is increasing students' motivation to learn by creating a collaborative and competitive learning environment. Kahoot can also help students improve their understanding of the material through hands-on practice and experiential learning. According to [2], game-based learning such as Kahoot is able to increase student participation, accelerate material understanding, and create a more enjoyable learning atmosphere. Another study by [3], stated that Kahoot can significantly improve students' motivation and academic performance through an interactive and competitive approach.

Kahoot is an online media platform that assesses students' knowledge using course content or applications as its primary tool. According to [4], Kahoot is a free, game-based platform that millions of people worldwide use every day to explore, create, play, and share learning games. To summarise, the Kahoot game can be a pleasant way to learn English in the classroom. Kahoot is a free game-based learning platform for every subject, language, device, and age group. It is intended to make learning enjoyable, but it isn't just for the classroom. It is a platform that allows teachers and students to communicate 18 by changing the classroom into a game show with the teacher as the host. Kahoot allows teachers to create game-based tests, debates, and surveys. [5]. According to [6] currently, there

are 3 types of Kahoot, they are quiz, discussion, and survey. How to use the kahoot application is 1) accessing kahoot, 2) creating an account, 3) creating a quiz, 4) starting a game, 5) running the game, 6) analyzing the result.

The term "learning achievement" combines the terms "achievement" and "learning," each of which has a distinct meaning. In Indonesian great dictionary, achievements are results that have been achieved (from what has been done, done, and so on). While learning, can be interpreted as a person's process of increasing knowledge to carry out his life. For this reason, there are two expert understandings that are relevant to this definition. According to [7] learning achievement cannot be separated by learning itself. Learning is a process carried out by a person to obtain a new change in behaviour as a whole, as a result of his own experience in interaction with his environment. Thus, learning is the process of forming learning achievement, maximum learning will produce high achievement. Furthermore, [8] implies that learning is primarily a person's intentional attempt to meet their requirements, whereas learning achievement is the outcome attained by a person after engaging in learning activities.

Impact in the context of learning refers to activities or student actions that are consistently carried out in their daily lives. According to [9], impact is defined as a strong influence exerted by an individual or a group in carrying out their tasks or roles. This significant and powerful influence eventually leads to changes, whether in a positive or negative direction. Positive impact in the context of student learning refers to changes in the development and mindset of students that improve progressively through consistent learning activities and methods, contributing to enhancing their academic abilities. And then, negative impact in this context refers to detrimental changes in the development and mindset of students, resulting from continuous learning activities and methods that do not align with their understanding and cognitive abilities, ultimately leading to a decline in their learning outcomes. Impact can be interpreted as an influence or effect, in any the decisions made by a person usually have an impact individually, both positive and negative impacts. As for Understanding positive and negative impacts. Positive impact is an influence caused by an action that has good consequences for a person or the environment. Negative impact is the influence caused by an action that has bad or bad consequences for a person or the environment.

Research Methodology

This study employs quantitative approaches to test theories by investigating the relationships between variables. The research design is pre-experimental, with one group pre-testing and post-testing. The selection of this research design is based on the sample in this research is only one class and is taken according to predetermined criteria. In addition, the success of this study is also determined by the scores obtained by respondents during the pre-test and post-test [10]. The variables used were independent (X) and dependent (Y) variables. because this study is entitled "The impact of Game-based learning on students learning achievement in EFL classroom at SMP Negeri 6 Kota

Sorong." Impact is the independent variable in this case, and student learning achievement is the dependent variable.

The population in this study were 8th grade students of SMP Negeri 6 Kota Sorong. One class will be used as a research sample out of the population of eleven classes. with a total of 30 students as the sample to be studied. With this, the sampling technique used. According to [11], quantitative sampling techniques can be divided into two types, namely probability sampling, and nonprobability sampling. And for the sampling technique used in this research is, nonprobability sampling technique. The researchers used pre-test and post-test as instruments. The reason researchers chose this instrument because, The objective of this study is to determine the impact of Kahoot on student learning achievement. Therefore, the use of pre-test and post test instruments is very suitable and supportive, to measure and find out the development of the student learning process.

According to [12], Data analysis techniques are activities that investigate information derived from research instruments such as documents, notes, recordings, and so on in a study. After doing research, and researcher has obtained data. Furthermore, the researchers conducted an analysis of the results of the data that had been obtained. Data analysis is carried out so that all answers from respondents or be managed by researcher in accordance with their research procedures be managed by researcher in accordance with their research procedures.

Findings and Discussion

Findings

The researchers analyzed the data to determine pre-test and post-test findings to assess the impact of using game-based learning applications (Kahoot) on student learning achievements. There are two types of tests conducted in this study, namely pre-test and post-test. Then the test results were statistically analyzed using the SPSS system. After that, the test scores were divided into two categories: pass and fail. The table below displays the data results.

Pre-Test

At the beginning of the research, the author gave a pre-test to measure students' initial ability to understand descriptive text material and simple past tense, according to the material they learned in class. The students' pre-test results will be shown in the following table:

Table 1. Result of Pre-test

NO	INITIAL	PRE TEST	NO	INITIAL	PRE TEST
1	A.C.K	50	16	N.J	70
2	A.A.F	40	17	O.C.T	40
3	A.A.B	55	18	O.J.R	75
4	A.V.D	40	19	R.T.S	45
5	F.R	45	20	R.A.P	60
6	I.S.S	50	21	R.A.R	65
7	J.Z.A	65	22	R.A.S	65
8	L.G.K	55	23	R.M	45
9	L.R	60	24	R.T	55
10	M.B.P	50	25	R.M.K	55
11	M.G.L	50	26	S.K	60
12	M.F.A	45	27	S.F	40
13	M.S	40	28	S.F.K	55
14	M.Z.M	45	29	S.P.A	75
15	N.N.A	60	30	Z.Y.S	55
16	N.J	70		Σ	1640
17	O.C.T	40		MEAN	$X' = 54,67$

In the table above, it can be said that the overall score of the students' pre-test results is 1640, with an average of 54.67. The students who managed to achieve the average score or assessment standard (75) were two students. Meanwhile, there are five students with the lowest score, namely (40). With this, the researcher will continue with the treatment process for four meetings, to see impact and change in grades on students.

Treatment

Before treatment, the average student score was 54.67 or 55% with the lowest standard student score of 40. for that the total average score obtained by students is still far above the standard score that has been determined. the results of the pre-test showed that 93.33%. students had difficulty understanding English language learning in their class and only 6.67% managed to get a standard score. for that the researcher provided a treatment process in 4 meetings to see if the provision of learning methods using game-based learning applications Kahoot had an impact on student learning achievement.

Post-Test

After passing four meetings or can be called treatment, the author gave a post-test as a final assessment of student achievement during five meetings with the researcher, to find out the final results of students' ability to understand descriptive text and simple past tense material, according to the material and treatment they learned in class with the researcher during the research process. The following student post-test results will be provided in the table below:

Table 2. Result of Post-Test

No	Initial	Post Test	Post Test	Post Test	Post Test
1	A.C.K	80	16	NJ	90
2	A.A.F	75	17	O.C.T	75
3	A.A.B	85	18	O.J.R	95
4	A.V.D	75	19	R.T.S	75
5	F.R	75	20	R.A.P	80
6	I.S.S	80	21	R.A.R	80
7	J.Z.A	85	22	R.A.S	85
8	L.G.K	80	23	R.M	75
9	L.R	85	24	R.T	80
10	M.B.P	80	25	R.M.K	85
11	M.G.L	80	26	S.K	80
12	M.F.A	75	27	S.F	75
13	M.S	75	28	S.F.K	80
14	M.Z.M	75	29	S.P.A	95
15	N.N.A	85	30	Z.Y.S	75
16	NJ	90			
				Σ	2415
				Mean	$X^2 = 80,5$

In the table above, it can be said that the overall value of the students' post-test results is an average of 80.5. As for the students who managed to achieve the highest score (90-95) there were three students. While there are sixteen students with scores above the average (80-85). And eleven students who managed to reach the average score (75). With this, researcher Scan see the changes that occur in the results of providing treatment during the research process. It can be seen that all students experience changes in the process and gradual development of their grades to pass the average score limit. With this, the pre-test results show the value obtained of 54.67 and after treatment, the post-test results show a percentage increase of 26% with a result of 80.5 this shows a significant increase.

Gain Score

Table 3. Result of Pre-Test and Post-Test after Treatment

N O	INITIA L	PRE TES T	POS T TES T	GAI N	N O	INITIA L	PRE TES T	POS T TES T	GAI N
1	A.C.K	50	80	30	16	N.J	70	90	20
2	A.A.F	40	75	35	17	O.C.T	40	75	35
3	A.A.B	55	85	30	18	O.J.R	75	95	20
4	A.V.D	40	75	35	19	R.T.S	45	75	30
5	F.R	45	75	30	20	R.A.P	60	80	20
6	I.S.S	50	80	30	21	R.A.R	65	80	15
7	J.Z.A	65	85	20	22	R.A.S	65	85	20
8	L.G.K	55	80	25	23	R.M	45	75	30
9	L.R	60	85	25	24	R.T	55	80	25
10	M.B.P	50	80	30	25	R.M.K	55	85	30
11	M.G.L	50	80	30	26	S.K	60	80	20
12	M.F.A	45	75	30	27	S.F	40	75	35
13	M.S	40	75	35	28	S.F.K	55	80	25
14	M.Z.M	45	75	30	29	S.P.A	75	95	20
15	N.N.A	60	85	25	30	Z.Y.S	55	75	20
		Σ	1640	2415					
		Mean	$\frac{X^1}{7}$ 54,6	$\frac{X^2}{805}$ 80,5					

Based on the result of the data, it can be seen the difference in the overall total student score from the test (ΣX^1) 1640, then the overall total student score from the post-test (ΣX^2) 2415. for that, the overall gain score obtained is 805. as for the lowest gain score (15), and the highest (35). The achievement of the scores obtained by students can be seen from their gain scores, we can see, +15 only 1 student, +20 with eight students, +25 with five students, +30 with eleven students, and +35 with five students. Data analysis is a step by step made by researcher to process data obtained during the research process. For this section, researcher analyze and process their research data using the SPSS version 25 system application, to support and process data to be accurate and valid. The following researcher will describe the results of research using SPSS 25 version. In this process, the researcher creates a table to make it easier for researcher to process and describe the results of the analysis data. for this reason, the following table below can describe the researchers process in processing the data.

Table 4. Result of Descriptive Data

	N	Minimum	Maximum	Mean
Pre-test	30	40	75	53,67
Post-test	30	70	95	82.33

Table 4 presented the statistical data from the pre-test and post-test, which revealed a significant improvement in participants' comprehension or skills. The average pre-test score of the participants was 53.67, which reflects the level of mastery of the material that is still low before carrying out the treatment program. However, after the treatment program was carried out, the average post-test score of the participants increased to 82.33. This increase of 28.66% points indicates that participants managed to understand the material better after the treatment. If calculated, the percentage increase reached around 53.38%, which illustrates that the use of learning-based game applications turns out to have an effectiveness and impact on students' learning. This process involves the processing of data obtained by the researcher based on the results of statistical tests, aimed at determining whether the results are normally distributed and valid. This process entails the analysis of data collected by the researcher based on statistical test results, with the objective of assessing whether the obtained data is normal and valid.

Table 5. Normally Test

Kategori	Kolmogorov-Smimov ^a		
	Statistic	df	Sig.
Pre Test	,133	30	,189
Post Test	,143	30	,120

Normal data is defined as having a significant value greater than 0.05 (Sig>0.05). A significant result of less than 0.05 (Sig<0.05) indicates abnormal data. This is a statistical method for determining whether the variation or variance of several data groups is the same. This test is essential in data analysis, especially when we want to Compare several groups using variance analysis. The following is the researcher explaining the results of the homogeneous test.

Table 6. T-Test

Result	Levene statistic	Df1	Df2	Sig.
based mean	,950	1	58	,334
based median	,861	1	58	,357
based median and adjusted df	,861	1	56,033	,357
based trimmed mean	1,001	1	58	,321

The following is an explanation of the table above. If the significant value or Sig. > 0.05, then it is said that the variance of two or more groups of the data population is said to be homogeneous. The data of 30 students in grade 8 had an average of 82.33 after being given treatment, so there was a significant increase of 28.66% so that it was said to be homogeneous and valid.

Table 7. Homogeneity Test

	Pair Differences							
	Mean	Std. deviation	Std. Error mean	95% confidence interval of the difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pre-test – Post-test	-28,667	3,198	,584	-29,861	-27,427	-49,091	29	,06

The following is an explanation of the dabel above. Because the Sig value (2- tails) is <0.05, H^0 is rejected and H^1 with Sig value (2-tails) 0,06. is accepted. That is, there is a difference between the before and after values. After the researcher analyzed the data using SPSS 25. The data findings obtained based on the four tests above are, the results of the provisional presumption or H^0 were rejected, and H^1 was accepted. With this, researcher can conclude that the use of learning-based game applications using the Kahoot application has an impact on student learning achievement. For this reason, the researcher will discuss it in the explanation of the results of the research That has been obtained from the results of the analysis of research data.

Discussion

This research is focused on analysing and seeing if there is an impact on students towards improving their learning achievement. For this reason, researcher designed the way students learn by using game-based learning applications, Kahoot applications into their teaching and learning process. With the aim that researchers see and answer the research questions that will be the result of the success of this research made. The following researchers present an explanation of the results of the student Pre-test and Post-test, which have been analysed using SPSS version 25 data.

Table 1 shows that the score before the treatment, which at this time students undergo a pre-test process, to find out the initial understanding of the material they will learn during their teaching and learning process and during the process of researchers conducting research. In the pre-test process, there were 28 (93%) students who were in the classification of not passing the assessment standards. And only 2 students (6.67%). And next, in table 2 Post-test process, there is a significant change in student scores. Here are 19 students (63%) who managed to exceed the assessment standards above the average. And there are, 11 students (37%) who are able to reach the average assessment limit. Furthermore, table 3 is the result of the gain score obtained in students, which aims to determine the development and changes in values that occur in students after they undergo treatment during the research process.

Based on the results of data processing through data normality and validity test and the T test, that the data obtained is valid and significant in accordance with the SPSS 25 system, students show a change in value after they get the treatment process. So that the scores produced by students at the time of the post-test, it can be said that all of them have changed. For this reason, it can be said to answer the problems in this study, it can be seen in accordance with the research question is to analyze and find out whether the use of learning-based game applications has an impact on student achievement, it turns out to have an impact. Because, through the results of data processing using SPSS version 25, the results of temporary conjectures or (H_1) are appropriate and valid can be accepted.

This research is supported a research by [13], she stated that there is an influence and impact on learning motivation and the ability to understand students' concepts using kahoot game media. The hypothesis test obtained a SIG value (2-tailed) less than \leq a significant level of 0.05. This shows that there is an influence and impact of the use of kahoot game media on learning motivation and comprehension ability. A research by [14], she found that the average value of the class using the Kahoot! application is 80.8 higher than the average of the class using the lecture method which is 66.5. With t- test with a significant level of 0.05 obtained $t_{count} > t_{table}$ which is $2.1140 > 1.734$. with concluded that using Kahoot! application in learning has a significant effect on the learning outcomes of students. based learning applications (Kahoot), it turns out that it can indeed have an impact on the students' learning achievement.

Conclusion

This can be evidenced by the findings obtained during the research process, where the average pre-test score of the students was 54.67, and the average post-test score after the treatment increased by 28.66% to 80.5. This result indicates that there has been an improvement and a significant impact on students learning achievement. And next, proceed with the data normality test, the results of the normality test of student pre-test and post-test data are 0.189 and 0.120. This shows that the data obtained is normal and valid because the significant results show ($Sig > 0.05$). Furthermore, this process is continued with the homogeneous test, with these results the researcher can obtain the results of student scores significantly increasing. Then, the last process as well as proof that the results of the research data obtained are valid is the result of the T-test. which aims to make a decision based on the results of the temporary conjecture H^1 and H^0 . So the results of this T-test show that H^1 is accepted and H^0 is rejected, with this it can be interpreted that it is true that the use of learning-based game applications can have an impact on student achievement.

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