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Implementation of Education Game-Based Learning Media Kahoot! In Agribisnis at the University of Bangka Belitung

Iski Zaliman*, Fransiskus Panca Juniawan, Risnina Wafiqoh, Agustina Heryati, Dwi Yana Ayu Andini, Dwi Yuni Syfania, Umar Faruq Vista
Information Technology, University of Bangka Belitung
*e-mail Corresponding : iski.zaliman@ubb.ac.id

Abstract: The functions and advantages of using technology-based learning can create a more effective learning atmosphere for students and students who are considered slow in their learning process, this study uses a quantitative approach through experimental methods, with experimental research designs using quasi-experimental designs and control classes. design group, the conclusion of this study has the first stage is data analysis using the N-gain test, so proceed to the normality and homogeneity tests it can be concluded that the results of the data that have been converted into N-gain scores, so that one of the classes is not normally distributed, therefore the U-Mann Whitney non-parametric test can be determined. After the U-Mann Whitney test, a significance value of 0.000 was obtained. Conclusions can be drawn with the implementation of kahoot! educational game-based learning media. can improve student learning outcomes.

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Introduction

Education is a process of changing knowledge, improving skills, improving attitudes and behavior of humans or groups that are trying to educate the life of the nation and humans by carrying out learning and teaching process activities as well as guidance on training learning (Sudrajat, 2011). Among the current developments in science and technology (science technology) which are increasingly growing rapidly can affect all kinds of aspects of human life, but not least in the field of Education (Ramdhani et al., n.d.) . In the era of globalization and the era of the industrial revolution 4.0 which is currently happening, it makes demands for higher education institutions to be able to adapt to the existence of a technological development, one of which is to make the learning process more conducive and enjoyable, both lecturers and teachers have a very important role in the development of learning technology. , this is due to the importance of developing the latest innovations, or ideas and ideas in utilizing technology in learning (Lase, 2019).

The functions and advantages of using technology-based learning can create a more effective learning atmosphere for students and students who are considered slow in their learning process, and can stimulate students by doing practice questions by integrating

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adjustments of speed and accuracy in learning according to the abilities of students. (Dosen et al., n.d.)..

Utilization of learning media technology can facilitate the student learning process for both lecturers and students in conveying, managing information and being able to get a very different learning experience (Adam et al., 2015). In understanding learning and acquiring learning skills students can be given encouragement and motivation so they can produce renewable ideas, students also need to be taught to analyze the material being taught, be able to apply what students have learned, and be able to evaluate material that has been obtained in during lectures (Masni, n.d.) This makes it a challenge to be achieved by providing opportunities or opportunities for students to be more actively involved in online interactive learning activities (Akbar & Noviani, n.d.).

According to (Aulia Safrizal, 2012) learning media is "physical media that is useful in order to be able to convey directly according to certain topics or quizzes, in this learning media there are slides, books, videos, films, and the like. Learning media can also be interpreted as a form or something that can convey what we learn from the subject matter, learning media is also considered a form of valid message from internet sources according to what we access, therefore there is the formation of a learning environment that is active and conducive in which students can receive material from lecturers so that it can be used as a more efficient and conducive learning process
according to Rayanda Asyar (Kuntarto & Asyhar, 2016). Other experts also argue, for example presented by (Wicaksono & Wakid, 2016), where learning media is a tool or assistance regarding what can be utilized from the sender of the message so that a goal can be achieved in the learning media. However, in the opinion of (Zulfa et al., 2020) , learning media can be interpreted as a process in which there is a delivery and can distribute messages to sources that have implemented plans aimed at creating a conducive teaching and learning process environment for both recipients and lecturers so that they can implement the learning process. teach efficiently and effectively.

Educational games are one of the learning media that has a process which aims to support the teaching and learning process
in every lecture class. An educational game can also be said to be a game whose goal is to stimulate or provoke interest from students, in general these educational games are carried out by learning while playing according to (Wahono, 2018). According to (Putri & Muzakki, 2019), the Kahoot! learning media application It is an application-based online teaching and learning media application in which there are questions and also this learning media application is free (open source) so that it can be used in learning process activities, the aim is to evaluate the process of student learning outcomes. The Kahoot app! This can also be useful for repeating previously learned lessons aimed at stimulating students so that students can discuss with their friends.

Technology applications to the website are now widely available and can facilitate the student learning process interactively and actively, with this technology application it provides an opportunity for students to relearn information and be able to practice knowledge, as well as student skills in the learning process by enjoying games(Hartanti et al., n.d.). In general, games that are motivational and fun, some literature argues that learning is a game method so that students are involved in digital technology, providing greater opportunities and desires in the subsequent learning process, meaning that the desire of students in the learning process using this game approach can improve the learning process.

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learning compared to conventional learning (Wafiqoh et al., 2022). the statement expressed is that learning with a game approach is a medium that can help students to solve problems, make assessments in the learning process, and to improve critical thinking (Sutirna & dan Suntoko, n.d.) . Game education (educational game) is a game that is used in the learning process, in the game there are elements of values and elements of education.

One of the interactive learning media is Kahoot which can be implemented in order to make the teaching and learning process more enjoyable and not boring for both lecturers and students, because the Kahoot technology application is designed for student and lecturer learning style approaches to engage in active role-participation relationships with students. classmates competitively in the learning process that students have learned during lectures (Eka Mustikawati, n.d.). This kahoot application has capabilities and advantages with its application form in the form of online quizzes, starting from student competition in answering quizzes and the results of the quiz can be directly seen by students which have components such as quiz scores, rankings, and the overall results of the quiz. So that this kahoot application can be used as motivation for student learning to get scores and rankings, and this kahoot application can also be used on laptops, tablets, computers and Android (Daryanes & Ririen, 2020) . The kahoot application has several features, such as surveys, quizzes, and games. In the quiz-shaped game feature, there are options for making quiz questions that can be used by lecturers, while students can answer this quiz game using their personal smartphones. The unique answer options will appear on student smartphones with colors and pictures of shapes such as boxes and squares so that students are free to choose the answer options given by the lecturer (Damayanti & Dewi, 2021).

The results of the author's observations during the teaching and learning process found several facts such as the lack of student interest in solving questions in the form of Microsoft Office theory. This is motivated because students think too abstractly when the material is given by the lecturer. From the results of this observation, the author tries to use an interactive quiz game, the kahoot! Present in the use of learning media so that students can immediately see and get the results of interactive quizzes. With the presence of the kahoot application interactive quiz learning media! The author hopes to get an increase in the results of the learning and teaching process for lecturers and students.

Research Method

In this study, a quantitative approach was used through the experimental method, with an experimental research design using a quasi-experimental design and a class control group design. In this study there were two classes to be sampled, the first sample was class A as an experimental class using interactive based quizzes using Kahoot!, while the second sample was class B as a control class with the application of power point based learning which is usually used by lecturers.

Data collection techniques in research that will be carried out using test techniques in the form of test questions that are given and will be done on the pretest and posttest, but these test questions have gone through the process of the previous validity test stages involving empirical validity and experts by utilizing the Pearson product moment. After that, the reliability was also tested with the help of Cronbach's alpha.

The data generated from this study were analyzed first through the prerequisite test stage so that it could be continued at the hypothesis testing stage. However, the data that has been obtained is calculated beforehand by calculating the N-Gain score in the experimental

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class and the control class so that the prerequisite testing can be continued. The results of the N-gain scores from class A and class C that have been obtained will be forwarded to be tested for normality with the Kolmogorov Smirnov test approach with the help of IBM SPSS, then the test carried out is homogeneity testing through the Levene test approach using IBM SPSS tools. From the data generated there are classes that are not normal and homogeneous, so the hypothesis testing carried out in this study is the U-Mann Whitney test.

Result and Discussion

1. Test the N-Gain

At this stage the research was carried out to find out whether there was an increase or not an increase in learning outcomes after applying the application of learning through an educational game approach, namely Kahoot! students in Class A and Class C.

Table 1. Results of the Class A N-Gain Score

Nama Inisial	Nilai Pretest	Nilai Posttest	Skor N-Gain (100%)
AB	50	90	80
AP	20	60	50
AA	40	75	58
ADR	40	80	67
AL	65	85	57
DA	50	90	80
DFR	50	70	40
DNR	40	85	75
END	40	80	67
FA	40	80	67
HA	40	70	50
I	35	70	54
KR	35	75	62
MDP	40	75	58
MF	60	90	75
NAO	60	85	63
N	30	75	64
PA	20	80	75
RA	50	85	70
RAA	60	85	63
R	40	80	67
SRK	0	80	80
SP	30	60	43
SN	45	85	73
S	40	65	42
UGP	40	85	75
WP	30	60	43

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Table 2. The results of the Class C N-Gain Score

Nama Inisial	Nilai Pretest	Nilai Posttest	Skor N-Gain (100%)
AF	40	37	-5
AH	20	19	-1
A	25	24	-1
A	50	52	4
CS	25	23	-3
DR	15	13	-2
DR	20	23	4
EA	30	27	-4
E	25	22	-4
HL	40	37	-5
KL	30	28	-3
MA	20	18	-3
MM	20	22	3
MP	40	42	3
MAR	40	37	-5
NS	20	17	-4
PS	35	32	-5
R	15	17	2
RTT	20	19	-1
SJ	20	19	-1
SL	20	17	-4
SAD	20	17	-4
S	30	27	-4
TBS	30	32	3
TS	20	22	3
TOA	30	32	3
WZ	30	29	-1
ZF	30	27	-4

In the first table there are n-gain scores in class A (experimental class) and there are also in the second table the n-gain scores in class B (control class).

From the results of the n-gain score that has been obtained in class A (experimental class) and class C (control class) will be used at the hypothesis testing stage, but before carrying out the hypothesis stage the n-gain score obtained will be used in normality testing and then homogeneity testing in order to be able to choose the hypothesis test to be used.

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2. Normality Test (Kolmogorof Smirnov Test)

Based on the n-gain values generated in class A and class C, class A and class C n-gain values will be used in the next test, namely the normality test. This normality test is one of the prerequisite tests for parametric tests. The normality test utilizes IBM SPSS tools or software through the Kolmogorof Smirnof test approach. Data on the results of the normality test and the n-gain scores of class A and class C students in utilizing SPSS tools are attached in table 3 below.

Table 3. Results of the normality test using the Kolmogorof Smirnof test approach using SPSS tools

Tests of Normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Kategori	Statistic	df	Sig.	Statistic	df	Sig.
Nilai	Kelas_A	.112	27	.200*	.937	27	.103
	Kelas_C	.193	28	.009	.850	28	.001

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

In table 3 we can see that there are normality test results with the help of the IBM SPSS tools using the Colmogorof Smirnof approach. In testing normality with the help of SPSS tools, it can be seen that the criteria for drawing conclusions are as follows:

1) If Sig > 0.05 then the distribution of data is normally distributed
2) If Sig < 0.05 then the distribution of data is not normal

Table 4. Drawing conclusions

Class A	Because the Sig value for class A (0.103) > 0.05 the results of the distribution of data Gain Score (%) class A are normally distributed
Class C	Because the Sig value for class C (0.001) < 0.05, the results of the data distribution of the Gain Score (%) for class C are not normally distributed

Based on the sig value data obtained in the experimental class 0.103 while the control class got a sig value of 0.001.

In tables 3 and 4 we can see that class A (experimental class) is normally distributed, this is because the experimental class gets a sig value of 0.103, where this sig value is greater than 0.05. Whereas in class C (control class) the distribution is not normal, this is because class C gets a sig value of 0.001 which means less than 0.05.

3. Homogeneity test (Levene test)

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The research conducted was a research whose nature was to measure in order to be able to see the difference between class A and class C given a different treatment. Class A is an experimental class given treatment that uses an educational game learning approach in the form of Quiz Kahoot!, but for class C there is a different treatment in the form of a learning approach method that is often used by lecturers, namely using power point slides. This makes research to compare student learning outcomes from class A and class C. one that can compare these learning outcomes by conducting a homogeneity test with the Levene test using IBM's SPSS tools. The results of the Levene test can be seen in table 5. Using SPSS tools.

Table 5. Results of homogeneity testing through the Levene test using SPSS tools

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
Nilai	Based on Mean	29.352	1	53	.000
	Based on Median	27.062	1	53	.000
	Based on Median and with adjusted df	27.062	1	30.283	.000
	Based on trimmed mean	28.785	1	53	.000

In testing homogeneity with the help of SPSS tools, it can be seen that the criteria for drawing conclusions are as follows:

Criteria for drawing conclusions:
1. If Sig > 0.05 then the data is homogeneous
2. If Sig < 0.05 then the data is not homogeneous

Conclusion:
Because the value of Sig (0.000) < 0.05 we can conclude that the data is not homogeneous

1. Hypothesis Test
In this study, the steps to determine the conclusion that was carried out were hypothesis testing. We can see the hypothesis in this study in table 6 which includes the following:

Table 6. Hypothesis Test (Mann Whitney U-Test)

Ha Ho	:	There was no increase in student learning outcomes after the implementation of learning media based on educational games Kahoot!
a	:	There was an increase in student learning outcomes after the implementation of

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Ha educational game-based learning media Kahoot!

In this study the hypothesis testing used was the U-Mann Whitney test with the help of IBM's SPSS tools. The application of the U-Mann Whitney test is useful because the data obtained in class A (Experimental class) is normally distributed and class C (control class) is not normally distributed, so the test used is non-parametric hypothesis testing. On the hypothesis test data with the help of IBM SPSS tools using the U-Mann Whitney test approach can be seen in table 7.

Table 7 . results of hypothesis testing on the u-mann whitney test using SPSS

Test Statistics[a]	
	Nilai
Mann-Whitney U	.000
Wilcoxon W	406.000
Z	-6.380
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Kategori

It can be concluded from Table 4 that the results of the hypothesis testing using the help of IBM SPSS tools with the U-Mann Whitney test approach show that the sig value b that appears is 0.000. In the U-Mann Whitney test with the help of SPSS tools, there are several characteristics of drawing conclusions which we can see in the criteria below

Criteria for drawing conclusions:
1. If Sig < 0.05 then Ho is rejected and Ha is accepted
2. If Sig > 0.05 then Ho is accepted and Ha is rejected

With the value data that has been obtained, conclusions can be drawn:
Because Sig (0.000) < 0.05 then Ho is rejected and Ha is accepted. The conclusion is that there is an increase in student learning outcomes after the implementation of learning media based on educational games Kahoot!.

Implementation of educational game-based learning media Kahoot! can be used by lecturers in the application of teaching and learning in improving student learning outcomes. Therefore this research is a form of implementing learning while playing Quiz to improve student learning outcomes, and it can be suggested that in the development of educational games this can be purchased in premium form in order to get a learning style that suits your needs and for further research so that you can modify learning styles with games educative in accordance with the needs of teaching materials owned by lecturers/teachers.

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Conclusion

At the conclusion of this study, the first stage is data analysis using the N-gain test, so that it proceeds to the normality and homogeneity tests. It can be concluded that the results of the data have been converted into N-gain scores, so that one of the classes is not normally distributed, because it can be determined by the non-parametric U-Mann Whitney test. After the U-Mann Whitney test, a significance value of 0.000 was obtained. Conclusions can be drawn with the implementation of kahoot! educational game-based learning media. can improve student learning outcomes.

Recommendation

For further research, you can develop or implement educational games in the form of learning and playing so that learning material that is difficult for students to understand can be fun learning.

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