



Application of Kahoot Educational Game-Based Interactive Quiz Media to Increasing Student Motivation And Learning Outcomes

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Abstract

The aim of this research is to evaluate impact use of quiz media interactive educational game based on Kahoot motivation and achievement Study student before and after implementing the Kahoot game. This research uses method quantitative experimental, with variables being measured through tests, questionnaires, and interviews structured to ensure the data collected nature numeric and can analyzed in a way statistics. This research also applies technique taking sample use cluster random sampling method. Data collection techniques involve use tests and questionnaires. Data analysis was carried out using analysis variance Multivariate using Wilk's Lambda test. Research results using test description of 5 pretests and 5 posttests in class VIII A Mts Mathla'ul Anwar Rawa Selapan show that Kahoot gaming media has a significant impact to enhancement motivation and results Study student. The results of MANOVA analysis show mark significance of 0.000 for Wilk's Lambda test, which is more small from level established significance previously. Hence, hypothesis zero rejected, implies that the use of Kahoot gaming media has a significant impact on motivation and results Study student.

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1 Introduction

Mathematics is a mandatory subject taught to all students, starting from level school base until school intermediate and stage education furthermore. Mathematics learning has the potential to improve concentration students,

because eye this lesson is not only introduce concepts, skills, and thinking strategies, but also teaches helpful patterns students in solving specific problems. The goal is to train students to be able to think in a way critical, logical, and systematic. So far, a lot student

consider that mathematics is hard lesson, so they feel anxious and facing difficulties in learning (Sholihah & Mahmudi, 2015). Mathematics often considered as challenging lesson for most of the students. The difficulty lies in abundance the formula must be keep in mind, as well emphasis on skills calculating what is needed Power remember the strong from the students to memorize it in a way automatically, outside understanding the concept. This becomes something challenge unique for teachers in teaching mathematics in a way that can understood easily by students. Because of this, developments in the world of education currently possible use method learning alternatives aimed at improving understanding and skills students in the subject matter particular (Arrosyad et al., nd).

Indonesia is currently facing various problem complex in the field education that is difficult to understand easily, one of which is the lack of quality education. Students have limited understanding to most of the important concepts in mathematics. A number of students even facing difficulties in studying mathematics, especially in matters concepts, definitions, theorems, and proofs, so in a way overall, them feel bored moment learn math. Even some students fell asleep when the teacher delivers material, and there is none no one is interested in asking regarding this material. Can seen from minimal interest students to ask the teacher about learning material at that time. Students also engage in activities unrelated to lessons and have perceptions that mathematics is the eye difficult and boring lessons. This cause student tend lost motivation, feeling saturation, and in the end lost interest in learning mathematics. From the first observations made by researchers at MTs Mathla'ul Anwar Rawa Selapan, found that in implementation learning in class, teacher only relying on books and blackboards as means teaching main. This situation causes low motivation students in following the learning process, and requires

the teacher to repeat the material several times to ensure understanding student to the material taught.

From observation data, it can be seen that a number of student show lack of enthusiasm and attention when the teacher explains the material in front of the class. Of these various problems, it becomes crucial for a teacher to develop creativity in designing the learning process. One of sign creativity a teacher is the ability to apply approach learning that is appropriate to the subject matter being taught. Approach use The Kahoot game application in learning is the proper method for teachers in teaching eye mathematics lessons to students (Fitriasari, personal communication, November 16, 2023).

Instructional Media involve planning learning and planning activity Study teach. As additional, benefits from learning media is to improve comprehensive understanding of the material more detailed. This information is used to provide more straightforward explanations and improve processes and results Study. The use of learning media is also able to divert attention students, so can arouse enthusiasm for learning which has an impact on the level engagement and achievement learning (Rahmi & Ariawan, 2022). For the sake of facing challenge learning digitally based, hand in hand with development Continuous Technology and Information growing, it's encouraging creation use of innovative, effective and efficient learning media. Motivation plays a role crucial in learning because it is able to push interest study students and make sure smooth learning activities. Motivation learning is an internal factor within oneself encouraging students them to be involved in learning activities, direct the learning process, and ensure achievement desired goal. Therefore, there is a need for digital learning media to be used in business increase performance Study students (Sulistiyawati et al., 2021).

There is various application education that is very suitable for students, especially those

that focus on aspects game. This is very interesting for students, especially When they feel sick and tired. Teachers can utilise application interactive like Kahoot in learning to create atmosphere learn more dynamic and uplifting interest student. A game can be considered as form entertainment. As educators, we need more sensitive to use this game. The use of this interactive game provides profit in making learning more interesting, as well possible flexibility in time and place in the teaching and learning process. Kahoot also has advantages as tool learning, where the classroom atmosphere becomes more entertaining, students are taught to utilize it technology as tool learning, and students can increase Skills motor them in using Kahoot (Wigati, 2019). Kahoot is one of them learning media options interactive which makes the learning process fun and involving students and teachers Because promote participation student in a way competitive in learning. Kahoot is a game interactive that has elements education, where users can make quiz. In mathematics, understanding concept is very important to students (Efendi et al., 2022). Kahoot offers four aspects, namely games, quizzes, discussions and surveys as its features. In the game section, you have the option to create various type question, determine the most correct answer, and set the time given to answer every question. What's interesting is the response will be represented through images and colors, so participants will be asked to choose reflecting colors or images answer them (Wedyawati et al., nd).

From the explanation above, you can abstracted that use of quiz media interactive educational game -based Kahoot influences achievement improvements Study student. Due use of quiz media interactive educational game -based Kahoot is able to improve understanding student to the material that has been taught by providing response in a way instant. Through use of interactive game learning media like Kahoot, you can increase

achievement results study student during the learning process taking place. The students can do more confident and brave disclose opinion they about material that is considered lacking in understanding, so they can strengthen understanding they.

2 Method

This research was conducted at Mts Mathla'ul Anwar Rawa Selapan use approach quantitative and applying method experimental. Focus The main thing is to identify effect from something action or treatment as variable independent to the result becomes variable dependent. Retrieval method The sample applied in this research was cluster random sampling. Samples were taken from one class consisting of 29 students, who then given pretest and posttest.

Research instrument is the means used by researchers to collect valuable data answer research or testing questions hypothesis. This tool involves use of pretest and posttest questions, as well questionnaire (questionnaire), which is adapted to the grid that has been prepared previously. This research aims to compare effectiveness learning before and after implementation Kahoot game as tool help learning.

Validity in this research will be evaluated through validity the contents will be evaluated by experts. The reliability of the research will be measured using Cronbach's Alpha Reliability. The data analysis technique used is analysis variance multivariate (MANOVA), and data processing was carried out using IBM SPSS Statistics 16. Before apply analysis, MANOVA requires a number of critical assumptions that must be noticed, like data normality, uniformity covariance between groups, and uniformity matrix covariance between group.

3 Results and Discussion

Validity Test

Validity test used to evaluate validity details the instrument will given to respondents after the previous consulted with experts. Analysis details instrument results Learning is carried out on students who have levels ability similar to the respondent and has achieved competence basic, so can used to assess validity and reliability instrument. Here are the results from testing the validity of test instruments and questionnaires:

Table 1. Test Results Validity Tests and Questionnaires

No.	Questionnaire		No.	Test	
	V	Category		V	Category
1	0.92	High	1	0.83	High
2	0.83	High	2	0.83	High
3	0.83	High	3	0.92	High
4	0.83	High	4	0.83	High
5	0.60	Medium	5	0.60	Medium
6	0.83	High	1-5	0.82	Tall
7	0.83	High			
8	0.83	High			
9	0.83	High			
10	0.83	High			
1-10	0.82	High			

From Table 1, validation of questionnaires and tests indicated existence questions that have fairly good validity, range from "medium" to "high" categories, according to the Criteria Index Aiken Validity.

Reliability Test

Testing reliability aims to evaluate consistency instrument in a study, measure is instrument the stable or consistent. This reliability test uses coefficient *Cronbach's alpha* as indicator reliability. Instrument tests and questionnaires considered can reliable If coefficient its reliability reaches or exceeds 0.70. This is done using device IBM SPSS version 16 software.

Table 2. Test Results Reliability Test

Test	Cronbach's Alpha	
		,704
Questionnaire	Cronbach's Alpha	
		,813

Based on the given SPSS output, coefficient reliability test is 0.704, and for the questionnaire it is 0.813. These results show that instrument the can considered can dependable or reliable.

Normality test Multivariate

Normality test Multivariate using the correlation test between mark mahalanobis distance with chi square.

Table 3. Normality Test of Pretest and Posttest Data

Pretest		Posttest	
Mahalanobis Distance	qi	Mahalanobis Distance	qi
1	,975 **	1	,856 **
	,000		,000
29	29	29	29
,975 **	1	,856 **	1
,000		,000	
29	29	29	29

Based on correlation test results, value significance (see sig. line (2-tailed)) more minor of the specified alpha. Thus, from second criteria that, you can concluded that sample from population follow Multivariate normal distribution.

Homogeneity Test Variance and Covariance Matrix

Homogeneity test in this study used the box's m test.

Table 4. Homogeneity Test Results Matrix

Box's M	F	df1	df2	Sig.
4,200	1,345	3	5.680E5	,258

From the output, value significance is 0.258, which is greater than the predetermined alpha. Therefore, Ho is accepted.

Hypothesis Testing

In this research, method The data analysis used is analysis Multivariate. Manova is analysis to measure influence in a way simultaneous to motivation and results Study student between before and after intervention using Kahoot game.

The MANOVA test results show mark of 0.000 for the Wilk's Lambda test, which is the value its significance more small from a predetermined alpha previously. Therefore, H_0 is rejected. Based on this finding, can concluded that there is significant impact on motivation and results Study student as consequence from use of Kahoot game media.

Table 6. T-Test Results of Motivation Data and Learning Outcomes

Motivation Posttest - Pretest	t	df	Sig. (2-tailed)
	9,909	28	,000
Learning outcomes Posttest - Pretest	t	df	Sig. (2-tailed)
	14,801	28	,000

4 Discussion

Kahoot is a learning platform interactive used to create and retrieve quiz, poll opinions, and games education other. This is one frequent forms of interactive media used in context education and training. Kahoot serves to centralize attention students on content lessons with attractive, helpful visuals student concentrate on subject matter supported by visual elements. The Kahoot platform is used for a variety of purposes type assessment, incl online quizzes, surveys, and discussions, each with a variety method play. In the game, you have the option to create questions various type and identify the correct and decisive answer the duration of time given to answer question.

Following are the steps for using Kahoot for classroom learning:

1. Teacher must do register and log in to your Kahoot account via the official website <https://kahoot.com>.
2. After entering, teacher can make quizzes or games that are relevant to the learning material you want be delivered.
3. Teacher will accept code access unique (PIN) for the game that has been created.
4. Students are asked to open the website <https://kahoot.it>, enter code access, and determine Name user.
5. After all the students connected, question based choice doubles made by the teacher will displayed on the screen prominent. Students must choose their answer consider Correct as soon as possible.
6. Scores are given to students based on speed and accuracy answer they, create element competition in the learning process.

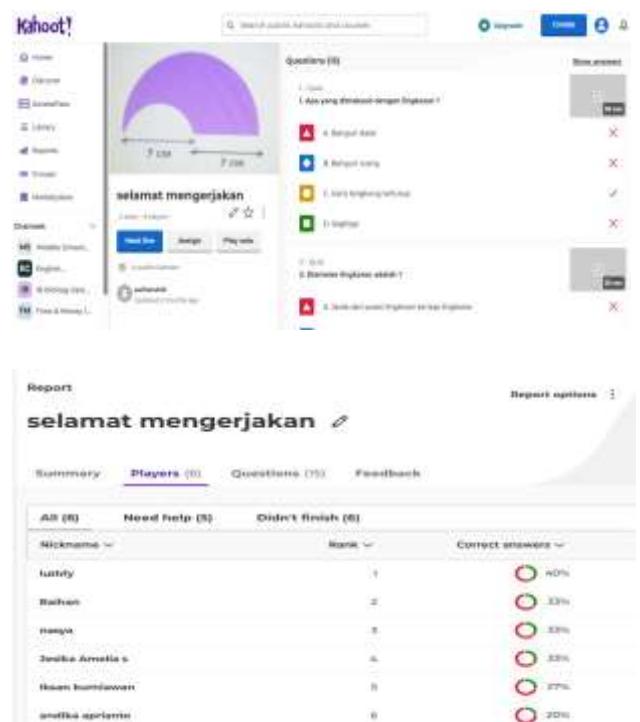


Figure 1. Kahoot Gaming Media

Achievement effectiveness learning evaluated through performance learning and motivation students, focusing on four

aspect: mastery learned behavior (including number of errors), achievement performance, transfer of learning, and retention of material. Characteristic features effective learning covers ability reach objective instructional, giving experience active learning, as well provide facilities that support the learning process. Apart from that, learning effective happen when student can develop understanding the material, having a sense of desire know the high, feel challenged, explored creativity, and active physical, mental, and emotional.

Effectiveness of Kahoot Media in results Study refers to its ability to improve comprehension, retention information, motivation, involvement, and experience Study student in a way whole. This information is used to provide better explanations and improve processes and outcomes Study. During learning, both teachers and student can develop creativity in designing an exciting learning process. Students demonstrate level activeness and high enthusiasm in following quiz via Kahoot, without feel burdened. The goal is to improve Power pull learning and improving motivation students to concentrate.

Based on results analysis Multivariate and testing hypothesis using Wilk's Lambda test, it was concluded that the application of Kahoot gaming media has an impact positive and significant to enhancement motivation and results Study students in class 8A Mts Mathla'ul Anwar Rawa Selapan. The MANOVA test shows results significance of 0,000, which is more small from level significance is set at (0.05), so H_0 is rejected and H_1 is accepted. This shows exists difference in level motivation and results study in that class. Thus, you can concluded that The use of Kahoot game media is effective in increasing motivation and results Study student compared to direct learning models, in accordance with

previous research findings.

Research on the use of the Kahoot game is increasing interested in the field education and psychology because this platform offers experience enjoyable, interactive, and accessible learning adapted to various objective learning. Various studies have revealed effectiveness of Kahoot in increasing achievement academics, motivation learning, participation students, as well experience learning in a way whole. One of frequent aspects The emphasis in research on Kahoot is its impact to motivation Study student. Kahoot is considered capable of improving motivation Study student through experience interactive, competitive and fun learning. Features like Interesting questions, response time limits, and a trusted leaderboard can push involvement student as well as make they more active during learning.

Apart from that, research also shows that Kahoot makes it possible possible variations in learning formats adapted to needs students and learning materials. Teachers can make quizzes with various type question like choice double, distance short, or sequence, which can be make the learning process more exciting and varied. Kahoot is also considered according to preferences student digital generation who are accustomed to technology, so can attract interest students and facilitate more learning effective. Additionally, the use of Kahoot has been explored in various ways context education, from school base until college high, and in various eye lesson. Although many studies have highlighted Kahoot benefits in learning, more research carry on Still necessary to understand more deep about impact to results learning, its integration in the curriculum, and influencing factors its effectiveness. Thus, Kahoot has excellent potential as a tool learning innovative and effective in improving motivation and results Study

student.

5 Conclusion

From the results and discussions before, yes concluded that application of Kahoot as a quiz media interactive educational game - based has an impact significant positive to enhancement motivation and results Study student If compared to method direct learning. This also shows that effectiveness of Kahoot in increasing motivation and results Study student give motivation for educators to adopt technology in the learning process. Approach This innovation proves it benefits in achieving objective more learning effective, where students not only obtain knowledge, but also feeling engaged, motivated, and able apply what are they learn in life daily.

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