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Improving Student Mathematics Learning Results Through Mathematical Learning Aided Media Game Quizizz SMPN 2 Padangsidimpuan

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Abstract Mathematics is a subject to be studied by all students, From elementary school through higher education, all students are required to study mathematics. The objective is to improve students' learning outcomes on mathematics education.Improving students' capacity for logical, critical, analytical, and methodical thought is the goal. Students believe mathematics to be a challenging subject.Many pupils still struggle and are afraid of learning maths today.This could be the result of him disliking mathematics or the boring nature of the course.Consequently, there are educational solutions available to turn mathematics into a fun subject. This study will focus on the educational tool Quizizz, which teachers can utilize to teach arithmetic to their pupils in a more engaging manner.Mathematical learning aims to help students understand concepts or principles of mathematics through the process of internalization, which helps them understand such concepts and principles. Basically, mathematics deals with abstract ideas and structures that are structured systematically and logically through the process of deductive reasoning. As a result, memorizing is an ineffective way to learn mathematics. Instead, a genuine, interesting, effective, and efficient learning tool or medium should be used to teach mathematics so that it can handle student problems. Therefore, the focus of research is how to make the Quizizz application a fun tool for teaching math, so that students and class students can learn anytime and anywhere.

Keywords: Quizizz Game, Mathematics Learning Outcomes

INTRODUCTION

From elementary school to college, mathematics is one of the subjects taught. Since all activities depend on mathematical concepts, mathematics is very important in everyday life. However, some students have difficulties with mathematics because they have difficulty understanding concepts. Learning skills that are less related to students have difficulty learning mathematics. This deficiency is seen in student responses and involvement in mathematics.

Students have attained a certain amount of success in learning mathematics if their accomplishments and learning outcomes rise. Effective mathematics instruction focuses on the cognitive markers that pique students' interest in learning in addition to using certain models and instructional strategies.

In the 4.0 era, the rapid growth of information and communication technology will have an impact on education, especially on the use of media in education. According to Journal of Academics: Journal of Mathematical Education, Volume 06, No. 03, August–November 2022, pp. 3203–3213, learning media can help teachers deliver material better, improve students' ability to think creatively, and increase the amount of time students spend learning.

Simple learning methods made and used are very much needed by today's teachers. Therefore, it is the responsibility of the teacher not only to provide an explanation of the material but also to teach the student how to use technology as a learning tool. Learning media can be used for various kinds of learning in the classroom, one of which is mathematics.Therefore, it is important to use fun and interactive materials in learning mathematics, because these tools help students visualize abstract objects that are difficult to understand, help them understand the subject matter, and possibly enhance the student's learning spirit during the lesson.

Interactive learning media has features that involve students in the use of their media, encouraging students to become more interested in learning. Through the use of interactive media, students can have an opportunity to gain a better understanding of what their teachers are teaching and also to gain additional knowledge of the subject they are studying.

Quizizz is one of the interactive learning media that you can use while studying. It can attract students' interest in learning, help them understand the relationship of mathematics with everyday life, and help them imagine abstract mathematical objects that are difficult to imagine**.**

RESEARCH METHODS

In pre-experimental design, one pre-test and one post-test group. The design of this study is as follows:

Tabel 1. Desain Penelitian

Model Desain Penelitian			
Kelas	*Pre test*	*Treatment*	*Post test*
Eksperimen	O_1	T	O_2

Description:

- O_1 : Early test (*Pre Test)*
- T : Treatment (use of learning media Quizizz)
- O_2 : Final test (*Post Test*)

This research was conducted at the secondary school in 2024/2025. All of the students of the 8th grade of SMPN 2 in Padang concluded that a total of 25 students participated in this study. In this study each member of the population is used as a sample or total sampling technique. This research data is collected using a learning interest lift and a learning outcome test consisting of pre-test and post-test.

Interest queries and learning test results are used in this study. Descriptive and inferential data analysis is also used.The research hypothesis is tested using either a t-test or a pair of samples. The aim of this test is to find out how effective Quizizz is as a learning tool in enhancing interest and learning outcomes in the field of mathematics.

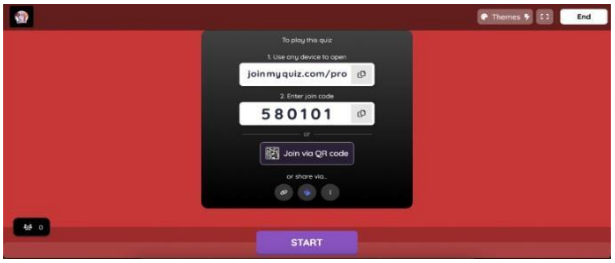
1. H_0 : The use of Quizizz as a learning tool failed to improve students' mathematical skills in the classroom. VIII SMPN 2 Padangsidimpuan.
2. Ha : The use of Quizizz, a learning tool, improves the mathematical skills of students in the eighth grade of SMPN 2 Padangsidimpuan.

RESULTS AND DISCUSSION

1. Steps to Follow Lesson with Quizizz

To use quizz as a learning medium, quizzes are used in lessons. Here are the steps.

a. First, one must disseminate quizizz learning links or allow students to access the internet directly through https://Quizizz.com. After that, enter the source code and start dragging. The following picture shows his appearance.



b. Then students who have participated in learning or quizz games can follow the game easily and ready by answering each given question. Each student who answers the question has a score and a rating that is displayed on the teacher's laptop screen.

c. After the session ends, the people who give the best answers or are shown with scores 1, 2, and 3 for the question or quiz.

Quizizz can not only be used for quizzes, but can also be used to deliver PowerPoint materials live or as assignments, which means you can study the material that has been shared at any time according to the time set by the teacher. In addition, quizzes can be included in a PowerPoint presentation. Sharing quiz links to students is a feature of the application.

1. Data processing using IBM SPSS Statistics software 25

Prerequisite tests show that the data is normal and homogeneous. After that, the analysis continued by testing the hypothesis with a t-test of pairs of samples. To find out how effective quizizz, a learning tool, is in teaching mathematics to students of the eighth grade of SMPN 2. The results of paired t-test samples performed using IBM SPSS statistic 25 are shown in the following table.

Before you start your research, test your instruments first with a validity test. The validity test carried out by experienced teachers found 25 valid and worthy-to-use instrument statements. Both classes provide a valid means of measuring students' learning outcomes in learning mathematics. Results of measurement of students' learning outcomes in relation to the learning that took place in both classes are presented in Table 2.

Tabel 2. Descriptive Statistic

Kelompok	N	*Range*	*Minimum*	*Maximum*	*Mean*	*Std.Deviation*	*Variance*
Eksperimen	30	33	91	123	107	11.3137085	67.599
Kontrol	30	46	68	114	91	16.26345597	128.965

Post-test results from the experimental and control classes show that using Quizizz as an interactive tool is more effective than the control class that does not use Quizizz. This shows that quizizz as the interactive medium has a significant impact.

Next, calculate the data analysis requirements using the Kolmogorov-Smirnov normality test. This is done using the statistical program SPSS 25.0 for Windows, with a significance level of 0.05. Table 3 shows the calculation of the normality test.

Tabel 3. Normality Test *Kolmogorov-Smirnoov*

Test Of Normality				
Minat Belajar Matematika	**Kelas**	***Kolmogorov-Smirnov***		
		Statistic	**Df**	**Sig.**
	Eksperimen	0.138	30	0.230
	Kontrol	0.150	30	0.145

From the table above you can see the Sig value of the second class of the sample used is greater or equal to 0.05 thus indicating a normal distribution. The Levene homogeneity test is performed using a statistical window. The homogenity test calculations listed in Table 4 are shown below at SPSS 25.0, with a significance of 0.05.

Tabel 4. Test Homogenitas variance

Test of homogeneity of variances					
Minat Belajar Matematika	**Based on Mean**	**Levene Statistic**	**df_1**	**Df_2**	**Sig.**
		0.987	1	68	0.360

Sig values are determined from the homogeneity test results above in the

experimental and control classes. 0.360 > 0.05 which means H0 is accepted. In conclusion, the variance of experimental and control classes is the same. (seragam). Calculating analytical requirements can keep testing hypotheses. The hypothesis is tested using the t- test using SPSS Statistics 25.0 for Windows.

t_{hitung}	t_{tabel}	**Keterangan**
8.968	2,011	$t_{hitung} > t_{tabel}$

The t-test calculation results showed 8,968 greater than the table value of 2,011 and also obtained Sig. (Both sides) Less than 0.05, or 0,000. It can be concluded that from, H1 accepted and H0 rejected. These results show the impact of Quizizz as an interactive medium on student learning on learning Mathematics Smp N 2 in conclusion.

Based on the above calculations, the use of Quizizz, an interactive learning medium that has an instructional function, in an experimental classroom, has a greater impact on students' interest in mathematics compared to conventional learning media. This is supported by research (Panggullean & Harhap, 2020) that shows that using Quizizz as an interactive medium in learning activities yields better results than just using it as an interactive medium.

The researchers concluded that during the learning process in the experimental classroom, students' responses to learning interests changed significantly when using Quizizz as a mathematical learning tool. Quizizz is an educational feature that researchers use to study mathematics.

Consists of a presentation slide and a quiz slide that is packed as attractively as possible. The slide presentation of this document will later be displayed on the screen at the time of learning. In addition, students can view the material slides. on their gate phone. In the material information slides, the researcher will display some slides related to the quiz before proceeding to the next slide on the material. Students can use their smart phones to answer quiz questions in person, but the answers are displayed on the classroom screen. Mathematical learning requires more active dialogue between students and teachers, so students will have the excitement and interest in learning mathematics.

This shows that students' learning outcomes towards math lessons are increasing. By facilitating the understanding of the material, displaying interesting colors and images, as well as adding music sounds, students can learn while playing. In addition, students feel more challenged and focused, pay more attention to the material, and listen more to the researchers' explanations on the next material slide.

The results of the study (Mujahidin et al., 2012) show that Quizizz is considered by students as a game with learning material, so students are not too bored and more engaged. Furthermore, the results of this study show

that quizizz has a positive impact on mathematics learning as its use improves student learning outcomes in learning and understanding mathematical concepts, ensuring progress in learning. Supported by research.

The activities are fun, develop the skills of interaction between teachers and students, and encourage students to participate actively in the use of learning media by playing together. The view is that using Quizizz for learning math improves student learning outcomes, makes students more engaged, interactive, and focused in their learning, and improves the quality of mathematical material for best learning success. The expert's opinion is also in line with the research findings identified by introducing the learning media Quizizz in the process.

Learning has a significant influence on students' learning outcomes towards mathematics. With Quizizz, you can stimulate students' learning outputs and enthusiasm to make them happy, help teachers be more attentive when explaining the material, and enhance the sense of readiness to learn.

The limitation of this research is that researchers should do the research as well as possible in accordance with the previous design. However, the live Quizizz application with the functionality of the lesson is somewhat impaired due to the Internet network problems caused by some students. According to the overall results of research and discussions on the theory and relevant research, Quizizz, an interactive media, has proven to improve students' mathematical abilities. Thus, the use of Quizizz as a medium with learning functions is a new discovery that can be used by educators as a variety of teaching learning activities that enable students to have a useful learning experience and create a comfortable learning environment. Students are becoming more interested in their own learning because learning is less focused on teachers. This also affects learning success and improves the skills of teachers and students using technology.

CONCLUSION

The use of quizz as a learning tool in the eighth grade of secondary school has a significant impact on students' mathematical learning outcomes. The results showed that students who received lessons without using quizizz learning media tended to receive only material without paying attention to what was delivered and ignoring procedures.

In addition, one of the efforts made to improve the learning process and increase the interest and learning outcomes of mathematics students of the eighth grade of secondary school is the use of quizz learning media. This makes students challenged to compete with other students for a score or better results.

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