

THE IMPLEMENTATION OF USING QUIZIZZ AND G-FORM DURING THE COVID-19 PANDEMIC BASED ON STUDENTS' ATTITUDE

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Abstract:

This study aims to evaluate the effectiveness of Quizizz and G-Form media based on students' attitudes in learning mathematics. This study used an experimental method with a two-way analysis of variance (ANOVA) technique and Tukey's test. The population is SMAN 3 Sidoarjo grade XI aged 15-17 years as many as 130 students, while the sample is 64 students. Data collection was carried out using test and questionnaire techniques. The results showed that: (a) the mathematics learning outcomes of students who used the G-Form media were higher than those taught using the Quizizz media, (b) there is an interaction between learning media and learning attitudes towards students' mathematics learning outcomes, (c) for students who have positive learning attitudes, there is no significant difference in mathematics learning outcomes of students using G-Form and Quizizz media, and (d) for students who have negative learning attitudes, there are differences in the mathematics learning outcomes of students taught by the G-Form and Quizizz media. We suggest exploring deeper into this media using material that is more authentic to students.

Keywords: G-Form, Learning Attitude, Learning Media, Quizizz

IMPLEMENTASI PENGGUNAAN QUIZIZZ DAN G-FORM PADA MASA PANDEMI COVID-19 BERDASARKAN SIKAP SISWA

Abstrak:

Penelitian ini bertujuan untuk mengevaluasi keefektifan media Quizizz dan G-Form berdasarkan sikap siswa dalam pembelajaran matematika. Penelitian ini menggunakan metode eksperimen, dengan teknik analisis varians (ANOVA) dua arah dan uji Tukey. Populasinya adalah SMAN 3 Sidoarjo kelas XI yang berusia 15-17 tahun sebanyak 130 siswa, sedangkan sampelnya 64 siswa. Pengumpulan data dilakukan dengan teknik tes dan angket. Hasil penelitian menunjukkan bahwa: (a) hasil belajar matematika siswa yang menggunakan media G-Form lebih tinggi daripada siswa yang diajar menggunakan media Quizizz, (b) terdapat interaksi antara media pembelajaran dan sikap belajar terhadap hasil belajar matematika siswa, (c) untuk siswa yang memiliki sikap belajar positif, hasil belajar matematika siswa yang menggunakan media G-Form dan Quizizz tidak terdapat perbedaan yang signifikan, (d) untuk siswa yang memiliki

sikap belajar negatif, terdapat perbedaan hasil belajar matematika siswa yang menggunakan media G-Form dan aplikasi Quizizz. Kami menyarankan untuk menggali lebih dalam media ini menggunakan materi yang lebih autentik bagi siswa.

Kata Kunci: G-Form, Media Pembelajaran, Sikap Belajar, Quizizz

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INTRODUCTION

At the beginning of 2020, the world was shocked by the new virus outbreak, namely the new coronavirus (Sars-CoV-2), and the disease is called coronavirus disease 2019 (Covid-19). It has been confirmed that 65 countries have contracted this one virus. This pandemic has had an impact on various sectors, one of which is the education sector. Many countries have made policies to close their schools, including Indonesia. The solution to this problem is online learning. Online learning has also caused controversy in the community. The dispute arose due to the crisis that occurred during this pandemic. However, in big cities, several schools have been able to keep up with this development, so learning methods are not an obstacle for them. Even so, this learning is still considered ineffective. Carlsson revealed that online learning at home would reduce student achievement levels (Syah, 2020). He said that online learning should be balanced with direct learning in schools. This will maintain the condition of students to stay focused on learning (Jonsson, Waling, Olafsdottir, Lagstrom, Wergedahl, Olsson, Fossgard, Holthe, Talvia, Gunnarsdottir, & Hornell, 2017).

Learning evaluation is an essential component that needs attention. Evaluation can encourage students to be more active in learning continuously, encourage them to improve the learning process quality further, and encourage schools to improve student learning facilities and quality (Connell, 1988). In this connection, the optimization of the evaluation system has two meanings: first is an evaluation system that provides optimal information. The second is the benefits achieved from the evaluation. The main advantage of evaluation is to improve the quality of learning, and there will be an increase in the quality of education. It shows that the learning program's success is always seen from the learning outcomes achieved.

The low quality of the learning process like this is due to, among others, (a) The low ability of students (Zakarneh, Al-Ramahi, & Mahmoud, 2020); (b) The quality of the subject matter does not match the age level of the child (Azevedo, Harley, Trevors, Duffy, Feyzi-Behnagh, Bouchet, & Landis, 2013); (c) The amount of learning material is too large so that it does not match the time allotted; (d) The components of the teaching and learning process are not in accordance with the goals set by the teacher (Schoenfeld, 1992). In addition, decision-making is also essential to understand students and know to what extent they can assist with student deficiencies. The evaluation also aims to improve and develop teaching programs. Thus, the purpose of the evaluation is to improve learning methods, make improvements and enrichment for students, and place students in learning situations that are more appropriate to their level of ability.

There are two kinds of applications that can be used to assess students, Quizizz and G-Form. Quizizz is a web tool for creating interactive quiz games for classroom learning (Mei, Ju, & Adam, 2018). Salsabila, Habiba, Amanah, Istiqomah, and Difany (2020) states that the benefits of Quizizz media are, (1) The use of applications is efficient because it uses smartphones in the learning process; (2) Students understand the questions independently; (3) Activeness, both asking about the material as well as evaluating and recording the material; (4) Students' accuracy in questions and time management; and (5) Calm in doing questions or quizzes. Thus, it can be concluded that the Quizizz application media is very effectively used in the learning process.

Google Form (G-Form) is a service from Google that allows us to create evaluations with online form features customized according to our needs. Among other things, G-Form makes it easier for us to design and collect data simultaneously. So, G-Form will save data in our google drive automatically. This data can certainly not be lost and damaged. How to create a google form is also very easy. The difference between G-Form and Quizizz lies in the features provided. Quizizz has exciting features and themes so that students do not get bored. However, the weakness of Quizizz is that it does not have a feature to review the work. Besides, this application cannot control students when they open a new tab.

Meanwhile, G-Form provides a feature to review the work that has been done to be corrected. It can minimize errors when working. However, the theme on google form looks simple and boring. Both of these applications have their

strengths and weaknesses. Therefore, in this study, we will see the effectiveness of the two applications.

Ardiansyah (2020) stated that the study results showed an increase in interest and learning outcomes in mathematics from the initial conditions taught by the lecture and PowerPoint methods. The conclusion is that Google Form learning media can increase students' interest and learning outcomes in grade X MM in mathematics subjects.

Mei, Ju, & Adam (2018) shows how Quizizz can be effective when given to students. It is because Quizizz is an application that can make students interested in running it. Meanwhile, google form is a general application that is rarely used for student evaluation. In this study, the researcher wanted to see the implementation of these two media on students' attitudes.

On the other side of the teacher's mastery of the material (competence) can also affect student learning outcomes because if the material presented is not mastered by the teacher, students will not understand what he is teaching. Mastery of material for teachers is very decisive, especially in the teaching and learning process that involves subject teachers (Baharin, Aji, Yussof, & Saukani, 2019). Likewise, teachers' professionalism has a relationship with student learning outcomes; the point is that professional teachers, one of whose characteristics are mastering learning material, have a vital role in student success so that the goals to be achieved can be realized.

Teaching and learning activities indeed involve the teacher and students. The two of them have a good relationship so that teaching and learning activities can run smoothly (Hosnan, 2014; Indrilla, 2018). As a source of information, the teacher is tasked with selecting and implementing learning strategies following the teaching subjects. Various choices of learning strategies help adjust classroom conditions faced by teachers. Meanwhile, students act as recipients of the information who serve as consumers of subject matter with the teacher's learning strategies.

The teacher plays an essential role in improving the learning outcomes obtained by students, a teacher who can formulate and plan how effective and efficient learning media are to meet the minimum completeness criteria to improve the quality of education. Creating a lesson that can develop learning outcomes as much as possible is the teacher's duty and obligation. A strategy is needed to design learning activities that can stimulate more effective and efficient learning. The teacher must provide opportunities for students to experience or do it themselves, follow the process, observe an object, analyze,

prove, and draw the conclusions about an object. Teachers must create learning that simultaneously changes the old pattern from teacher-centered to student-centered (Agustina, Suraida, Alfian, & Syefrinando, 2018; Kariadi & Suprpto, 2018; Kirom, 2017).

Attitudes towards mathematics cannot be separated from one's belief in something because this belief will shape one's attitude towards something. Beliefs are divided into four main processes (Bandura, 1994), namely: (a) cognitive processes, (b) the motivational process, (c) the effective process, and (d) the selection process. Students who have a positive attitude in learning mathematics indeed have good mathematics learning outcomes. On the other hand, students who have negative attitudes towards mathematics will also get low mathematics learning outcomes (Bandura, 2006). Thus, support from teachers is needed to increase students' interest so that they can produce maximum mathematics learning outcomes. So, this study aims to evaluate the effectiveness of Quizizz and G-Form media based on students' attitudes in learning mathematics. The limitation of this research is that the media used are only Quizizz and G-Form, conducted online so that researchers cannot observe directly, and the material used is only trigonometry.

METHODS

This research was conducted at SMAN 3 Sidoarjo. The subjects were randomly selected to 130 high school grade XI students aged 15-17 years. The survey only focused on the trigonometric subject. The sample consisted of 30 male and 34 female students who had studied this material with different math skills. They were divided into two groups.

The first group will use Quizizz, and the other use Google Form. Students' attitude questionnaire adapted from Shahsavar (2012), online games with the name Quizizz (<https://quizizz.com/admin>), and google form (<https://docs.google.com/forms>) are implemented as online game-based learning instruments for this research.

The questionnaire was developed from 4 sub-variables to obtain 45 statement items consisting of positive and negative statements. The test given to students consisted of 20 questions at cognitive levels C3, C4, and C5. Indicators of students' attitude questionnaire and test indicators can be seen in table 1 and table 2.

Table 1. Indicators of Questionnaire

No	Sub Variable	Indicators	Number	
			Positive	Negative
1	Attitudes towards the objectives and content of mathematics courses	Understand and believe in the importance of the purpose and content of mathematics	2, 6, 16, 27, 31, 32, 36, 44.	3, 4, 5, 40, 42.
		Willingness to learn and apply mathematical material	19, 22, 33.	17, 20, 29.
2	Attitudes towards learning mathematics	Seriousness in learning mathematics.	1, 21, 23, 37, 38, 39, 41.	24, 25, 30, 35, 43
		Enjoys reading or studying mathematics books.	34.	26
3	Attitudes towards mathematics teacher	How mathematics teachers teach	7, 8, 13, 14, 15.	9, 18
		Teacher-student interaction	10, 11, 12.	
4	Attitude towards deepening mathematics subjects	Efforts to deepen mathematics subjects	45	28

Table 2. Indicators of The Problems

No	Basic Competence	Material	Cognitive Level	Question Number
1	Explain and determine the solution of trigonometric equations	Trigonometric equations	C4	8, 10, 12, 9, 11, 13
2	Modeling and solving problems related to trigonometric equations	Trigonometric equations	C5	14
			C4	15
3	Differentiate the use of the sum and difference of sine and cosine of trigonometric equations	The formula for the sum and difference of 2 angles	C3	1, 3
		The formula for the sum and difference of sine and cosine	C3	2, 20
		The formula for the sum and difference of 2 angles	C4	4
		The formula for the sum and difference of sine and cosine	C3	5
		Mid-angle formula	C4	6, 7
		Sine and cosine multiplication formula	C3, C5	17, 18, 19
4	Solve problems related to the formula for the sum and difference of sine and cosine	Trigonometric formulas	C4	16

In this research, data were collected by using a test and questionnaire technique. The test was completed using Quizizz and G-Form, while a questionnaire was given to the sample. The research method was arranged in steps: (a) The researcher gave questions to 2 groups of students. The first group uses Quizizz, and the other uses G-Form. One mathematician and one mathematics teacher have validated the questions, (b) The researcher needs to

ensure everything is joined by the password provided. Students need to complete 20 questions, (c) The researcher gave the questionnaire to the selected subjects, (d) The researcher corrects the students' work, (e) Data analysis. To analyze the results of student work by using SPSS, the analysis carried out includes descriptive data summary, normality test, homogeneity test between groups, hypothesis testing, and further testing.

RESULTS AND DISCUSSION

The details of the data to be explained refer to: (a) data on student mathematics learning outcomes using G-Form learning media, (b) data on student mathematics learning outcomes by using Quizizz learning media, (c) data on student mathematics learning outcomes with a positive attitude, (d) data on student mathematics learning outcomes with negative attitudes, (e) data on mathematics learning outcomes by using G-Form learning media with a positive attitude, (f) data on student mathematics learning outcomes using Quizizz learning media with a positive attitude, (g) data on student mathematics learning outcomes using G-Form learning media with negative attitudes, (h) data on student mathematics learning outcomes using Quizizz learning media with negative attitudes.

Table 3 shows the data obtained during the study. The detail of the data group to be explained refers to the number of samples used, the mean value of the instrument, and the standard deviation to determine whether the sample data can represent the entire population.

Tabel 3. Descriptive Data Summary

Evaluation of Learning Media (A)			
The Attitude of Students (B)	G-Form (A ₁)	Quizizz (A ₂)	Total
Positive (B ₁)	$n = 16$	$n = 16$	$n = 32$
	$\bar{x} = 60,75$	$\bar{x} = 59,56$	$\bar{x} = 60,16$
	$s = 20,687$	$s = 21,872$	$s = 20,950$
Negative (B ₂)	$n = 16$	$n = 16$	$n = 32$
	$\bar{x} = 82,81$	$\bar{x} = 57,06$	$\bar{x} = 69,94$
	$s = 14,488$	$s = 15,533$	$s = 19,734$
Sum	$n = 32$	$n = 32$	$n = 64$
	$\bar{x} = 71,78$	$\bar{x} = 58,31$	$\bar{x} = 65,05$
	$s = 20,838$	$s = 18,704$	$s = 20,782$

Testing Requirements Analysis

Hypothesis testing in this study was carried out using a two-way analysis of variance (ANOVA). Therefore, before conducting further analysis, the ANOVA requirements test is first carried out, including normality and homogeneity tests.

1. Normality Test

Before testing the hypothesis, based on the data collected from the results of this study, the data were first tested for normality. This normality test was carried out using SPSS, namely by Kolmogorov Smirnov, with a significant level of $\alpha = 0.05$, and the number of respondents was 64 people. The hypothesis of normality testing is as follows:

Ho : Data is normally distributed

Ha : Data is not normally distributed

Test criteria using probability values (Sig)

Accept Ho: If the probability value is > 0.05 , it means that the data is normally distributed.

Reject Ho: If the probability value < 0.05 , which means the data is not normally distributed.

Tabel 4. Calculation of Data Normality with SPSS
One-Sample Kolmogorov-Smirnov Test

		G-Form Negative	G-Form Positive	Quizizz Negative	Quizizz Positive
N		16	16	16	16
Normal Parameters ^a	Mean	60.75	63.75	59.56	67.06
	Std. Deviation	20.687	20.138	21.872	25.795
Most Extreme Differences	Absolute	.104	.126	.132	.216
	Positive	.098	.078	.075	.101
Kolmogorov-Smirnov Z			-.104	-.126	-.132
Asymp. Sig. (2-tailed)			.942	.416	.784

a. Test distribution is Normal.

Because all the probability values of each aspect > 0.05 , it means that the data are normally distributed.

2. Homogeneity Test Between Groups A1B1, A2B1, A1B2 and A2B2

Tabel 5. Levene's Test of Equality of Error Variances^a
Dependent Variable: Learning outcomes

F	df1	df2	Sig.
1.780	3	60	.161

Based on the data shown in table 5, the sig. value is obtained = 0.166. Because $\text{sig} > 0.05 = \alpha$, then H_0 is accepted. In other words, the data from the four study sample groups came from a homogeneous population.

3. Hypothesis Testing

Tabel 6. Tests of Between-Subjects Effects
Dependent Variable: Learning outcomes

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	6846.547 ^a	3	2282.182	6.725	.001
Intercept	270790.141	1	270790.141	797.916	.000
Students_Attitude	1530.766	1	1530.766	4.511	.038
Learning_Media	2902.516	1	2902.516	8.553	.005
Students_Attitude * Learning_Media	2413.266	1	2413.266	7.111	.010
Error	20362.312	60	339.372		
Total	297999.000	64			
Corrected Total	27208.859	63			

a. R Squared = .252 (Adjusted R Squared = .214)

The results of the research hypothesis test in table 6 are further interpreted as follows:

a. Discussion of the first hypothesis

The research hypothesis, which states that there are differences in student learning outcomes using G-Form learning media and Quizizz learning media, is accepted. It means that the treatment using learning media, especially G-Form learning media, is superior to giving Quizizz learning media treatment during teaching and learning activities.

Overall, measuring student learning outcomes using G-Form learning media and using Quizizz learning media gave different results.

b. Discussion of the second hypothesis

The study found an interaction between learning media and students' attitudes in their influence on student learning outcomes. It shows that it is learning media that the teacher needs to pay attention to and the psychological factors of students who need to be paid attention. One of these factors is the students' attitude factor.

Students' attitudes are influenced by various internal and external factors, such as the teacher's ability to teach, the teacher's ability to approach students, and other factors. So overall, both learning media and student attitudes affect the achievement of student mathematics learning outcomes.

c. Discussion of the third hypothesis

There was no significant difference between students' mathematics learning outcomes using G-Form media and Quizizz media in students who had a positive attitude. It is also shown in the average score of mathematics learning outcomes obtained using the G-Form media = 60.75, which is almost the same as the use of Quizizz media = 59.56.

Thus, those with positive attitudes are equally effective in using online learning media during pandemic covid-19 using G-Form media and Quizizz media.

4. Further Testing

There is a significant difference between student learning outcomes using G-form media and Quizizz media in students with negative attitudes. For those with negative attitudes, learning using G-Form media is more effective than Quizizz media.

According to Salsabila, Habiba, Amanah, Istiqomah, & Difany (2020) and Ardiansyah (2020), both Quizizz and G-Form can improve student learning outcomes. However, in this study, students with a negative attitude towards mathematics significantly differ in student learning outcomes. It indicates that the use of Quizizz in this study is able to improve student learning outcomes for both positive and negative attitudes of students. In other cases, the use of Quizizz and G-Form has the same student learning outcomes for students who have positive attitudes towards mathematics.

CONCLUSION

Based on the research results and discussion, it can be concluded that there is an effect of student attitudes on student mathematics learning outcomes.

The attitudes shown by students are negative attitudes and positive attitudes towards mathematics. In addition, there is a significant effect of learning media on the results of students' mathematics evaluation. This influence is an indication of the influence of attitudes and learning media on learning outcomes.

G-Form is considered more effective than Quizizz media for students who have negative attitudes towards mathematics. These results can be concluded that using the G-Form in trigonometric subjects is more effective in evaluating learning outcomes. Students who have negative attitudes or take longer to work on the questions need steps to look back at their work. However, there is no difference in student learning outcomes using G-Form learning media and Quizizz learning media on positive attitudes. Most students who have positive attitudes towards mathematics are already proficient even though they use two different media.

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