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## COMPARATIVE STUDY OF THE USE OF WHATSAPP GROUP AND GOOGLE CLASSROOM LEARNING MEDIA TOWARDS LEARNING OUTCOMES FOR IPS CLASS IX SEMESTER 1 SMP NEGERI 1 GABUS

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### **Abstract**

*This comparative study research aims to analyze the improvement of learning outcomes and analyze the effectiveness of the use of WhatsApp Group and Google Classroom Learning Media on learning outcomes during a pandemic emergency in class IX of SMP N 1 Gabus, Grobogan Regency. The quantitative approach includes: 1) analyzing the improvement of learning outcomes; 2) analyze the effectiveness of the media. The trial was carried out on 64 students, 32 students in class IX A used WhatsApp Group and class IX B had 32 students using Google Classroom. Data were collected by observation and documentation. The data on the effectiveness of the learning media were analyzed by means of gain, normality, and t-test at a significance level of 0.05. The results of the comparative study for class IX A. Based on the calculation of N-gain, the results of the pre-test and post-test results for class IX A were 0.67 in the moderate category. Regarding the results of calculations in class IX B, there is an increase in N-gain with a score of 0.70 in the high category with an average pre-test score of 84 and post-test scores of 91. The significance value is  $0.000 \leq 0.05$ , which means there is a significant difference between the average posttest learning outcomes between Class IX A (WhatsApp Group) and Class IX B (Google Classroom). This shows that the post-test average for Class IX B (Google Classroom) is higher than the post-test average for Class IX A (WhatsApp Group) and thus H1 is accepted.*

**Keywords**– Learning Media; WhatsApp Groups; Google Classroom; Learning Outcomes

## **1. Introduction**

Technology has a very important role, especially 21st century learning, so a teacher is required to use technology. The communication media used during the Pandemic for class IX A both by teachers and students is the WhatsApp Group application, namely instant messaging for smartphones. WhatsApp media has several advantages. The advantages of WhatsApp Media are that it is easy to use, practical, quickly saves internet data, and can be accessed only with mobile phones, has various features that can be used to support communication, such as the New Group, New Broadcast, WhatsApp Web, Starred Messages and Settings with internet service assistance. The choice of group menus is used as a place for discussing teachers with students and students with their friends in solving problems, for example the teacher sends several questions that must be solved according to the material that has been given, discusses, delivers material by the teacher, for example in the implementation of learning the teacher can convey material by sending teaching videos, in the form of photos or voice recordings, or using a private chat menu. The use of WhatsApp is very helpful in communicating activities in distance learning in the midst of current conditions. In addition to the advantages, WhatsApp media also has disadvantages. As for some of the drawbacks, namely, the limitations of internet packages or internet quotas that serve as a liaison in online learning, a weak network makes it difficult to download the material delivered by the teacher, the large number of incoming messages results in slow cell phones, lots of parents also complain about some of the problems faced by students in learning. At home, there are too many assignments given to students.

Like WhatsApp, Google Classroom is a communication medium used during the Pandemic for class IX B both by teachers and students. Classroom allows teachers to manage and assess the progress of their students while staying connected from anywhere. Because it is web-based, this platform is automatically integrated with other Google Suite for Education services such as Gmail, Google Docs, Google forms and Google Calendar.

Students can receive and submit assignments directly in Classroom, as well as teachers. This service can greatly reduce paper usage and simplify the learning process, especially if it is done remotely. Advantages of Google Classroom Easy to manage assigned tasks, namely Google Classroom provides assignments or materials in various forms ranging from documents, writings, photos, images, and many more files that can be managed, All files enter our Google Drive, Easy to review assignments before sending , Google Classroom also provides a feature for teachers that makes assignments very easy and interesting. So that students don't get bored while doing assignments in Google Classroom. It's very easy to see announcements from the teacher, it's easy in terms of discussion. Because Google Classroom provides discussion space in the comments column so that we can discuss and are free to send files for discussion

The disadvantages of Google Classroom experienced by class IX B include an unattractive appearance for students, when Google Drive is full of files it cannot be sent, based on the advantages and disadvantages of the platform between WhatsApp Group (class IX A) and Google Classroom (class IX B). so the author wants to do research related to the use of learning media whether it has a difference to student learning outcomes in the material of the Potential of the Asian Continent. This study aims to describe the differences between the use of these platforms in learning.

## **2. Method**

The research was conducted at SMP Negeri 1 Gabus, Gabus District, Grobogan Regency. The research was conducted in the odd semester in the 2021/2022 school year, the implementation time from June to October for approximately 5 months. The population in this study were all 32 students in class IX A and 32 students in IX B. The sample in this study was set to be 100% of the entire population, namely from the number of students 64 people, so that the sample was 64 students.

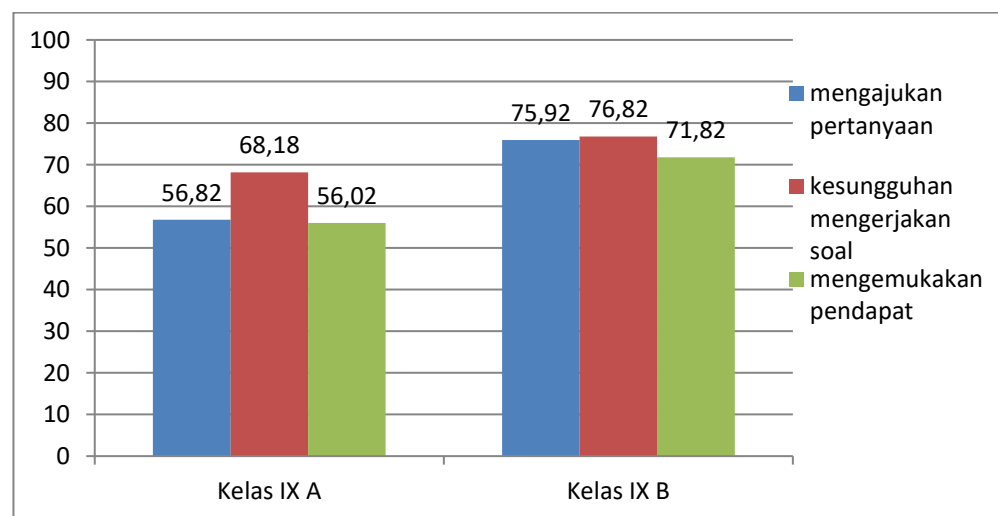
In this study, two data collection tools were needed, namely observation sheets used to observe student and teacher activities during online learning, and

journal questionnaires to clarify the results of observations by observers and respondents. The data analysis technique used was descriptive and quantitative analysis. Descriptive analysis is used to process data from observations during the online learning process, while quantitative analysis is used to process learning outcomes data to determine the improvement of student skills.

The subjects in the study were two class groups consisting of a class group using WhatsApp Group and a class group using the Google Classroom application. The determination of the class was not chosen randomly but based on the average value of learning outcomes in the previous semester. The effectiveness test was carried out using the N-gain test.

### 3. Result and Discussion

#### *Analysis of Student Learning in the use of WhatsApp Group and Google Classroom in learning*



**Figure 1.** Percentage of Student Learning Independence

The results of research on the affective aspects of student activity in class groups using WhatsApp Group (class IXA) in asking questions have a low percentage result of 56.82%, seriousness in working on questions of 68.18%. As well as the ability of students to express opinions by 56.02%. As for the class group using Google Classroom (class IXB) the percentage value for the ability to

ask questions is 75.92%, the ability to answer questions is 76.82% and the ability to express opinions is 71.82%. This shows that the results of affective student learning independence for class groups using the Google Classroom application (class IXB) are higher than for class groups using WhatsApp Group (class IX A).

There are three stages in this study that will be discussed, namely before learning, during learning and after learning. In the first stage, where before learning was carried out, students both in the WhatsApp Group application class group and the Google Classroom class group were given a test.

The results of the pre-test for class IX A have the highest score of 95 and the lowest score of 70 and for the average value of 83. Meanwhile for class IX B it is known that the highest average score for the pre-test is 95 and the lowest score is for class IX B is 70 and the average value is 84.2. This shows that there is a difference between class IX A and class IX B, where the pre-test scores for class IX B are higher than IX A.

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There is an increase from the first lesson to the fourth lesson. For class IX A the average gain is 83 at the first meeting, at the second meeting the average is 85, at the third meeting the average is 87, at the 4th meeting the average is 90. In class IX B at the first meeting the average gain is 84.2 , the second meeting the average acquisition of 85.5 , the third meeting the average acquisition of 87.7 , the 4th meeting the average acquisition of 90.5.

The use of the Google Classroom application today no longer sounds foreign. This is because students, especially IX B, are already familiar with studying the features in Gadgets, including the application. Even though they are new to Google Classroom and students are not familiar with using it in everyday life, so they have to learn more about how to operate the web-based learning

media, in fact Google Classroom is easily accepted by students because this platform is easy to learn and use. This is different from the use of the WhatsApp application in class IX A. This application is familiar, students can easily see material or video shows that the teacher sends in class groups or private WhatsApp. From the show, students commented on each other and discussed in groups or private WhatsApp with their teachers, but still not all students were active, sometimes some students just listened. This shows that student participation is less active. Although basically the teacher provides the widest opportunity for students to convey ideas and ideas and seek additional information to support learning from various media, both for students with WhatsApp Group application class groups and students with Google Classroom class groups, the enthusiasm given by students is different. . The Google Classroom class group tends to be active with the comments and ideas given compared to the WhatsApp Group application class group.

The obstacles experienced by the WhatsApp Group class (class IX A) include running out of quota and the large number of student assignments sent via the WhatsApp application, causing the memory on the cellphone to fill up quickly, as a result it is slow to work. Students are less focused because there are some materials/tasks that have been missed so they have to scroll up again to see the missed materials/tasks. While the obstacles that occur for students in the Google Classroom class (class IX B) in addition to running out of quota, one of which is that there are some students having difficulty downloading applications in Google Classroom, because the student's cellphone has small ram and internal storage so students sometimes borrow other people's cellphones. Moreover, the instructions given online, some of them are still adapting to online learning, so that independent learning activities also experience problems. But over time, students get used to it.

As a note for the future, learning is not only done in class. But the use of social media such as the WhatsApp Group application and the development of websites in the field of education such as Google Classroom are appropriate to be used as learning media. This is very good for the future, real and virtual blended

learning will certainly be able to improve the learning experience by students after the pandemic emergency period ends. So that in the future, it is hoped that there will be a better formula in managing learning media, both in terms of teaching materials and the right model in combination learning like this. Determining interesting topics in online learning must also be designed in such a way that there is good feedback between teachers and students. This shows that learning can be very interesting and communicative. This means that teachers are able to provide learning facilities both in the classroom and outside the classroom, both during class hours and outside class hours, both formally and informally.

***Results of Test Analysis of the effectiveness of using WhatsApp Group and Google Classroom in learning***

*Normality test*

**Table 1.** Normality Test of Class IX A Learning Outcomes (WhatsApp Group)

		One-Sample Kolmogorov-Smirnov Test			
		PB 1	PB 2	PB 3	PB 4
N		32	32	32	32
Normal		82.6563	84.6875	87.1875	89.5313
Parameters <sup>a,b</sup>		10.15877	8.79310	6.83179	4.97727
Most	Absolute	,202	,256	,329	,467
Extreme	Positive	,148	,194	,221	,308
Differences	Negative	-,202	-,256	-,329	-,467
Kolmogorov-Smirnov Z		1,277	1,229	1,079	1,950
Asymp. Sig. (2-tailed)		,077	,097	,134	,067

a. Test distribution is Normal. b. Calculated from data.

**Table 2.** Normality Test for Class IX B Learning Outcomes (Google Classroom)

<b>One-Sample Kolmogorov-Smirnov Test</b>				
	PB 1	PB 2	PB 3	PB 4
N	31	31	31	31
Normal	84.1935	85.4839	87.7419	90.8065
Parameters <sup>a,b</sup>	9.13754	7.89038	5.60338	4.84713
Most Extreme	.180	.185	.268	.355
Differences				
Positive	,184	,174	,157	,184
Negative	-,115	-,144	-,141	-,181
Kolmogorov-Smirnov Z	1,275	1,208	1,090	1,277
Asymp. Sig. (2-tailed)	,077	,108	,186	,077

a. Test distribution is Normal. b. Calculated from data.

### *Improving Student Learning Outcomes (Gain Test)*

**Table 3.** Recapitulation of pre-test and posttest results for Class IX A (WhatsApp Group) and Class IX B (Google Classroom)

No	Variable	score	
		IX A	IX B
<b>Pretest</b>			
1	Average	83	84
2	The highest score	95	100
3	Lowest Value	70	85
<b>Posttest</b>			
1	Average	90	91
2	The highest score	100	100
3	Lowest Value	75	85
<b>Normalized Gain</b>		<b>0,67 (medium)</b>	<b>0,70 (high)</b>

### *Differences in the Improvement of Student Learning Outcomes (T Test)*

**Table 4.** Results of post-test t-test control and experimental classes

		<i>T-test for Equity of Means</i>		
		T	df	Sig. (2-tailed)
Pre-test	<i>Equal Variances Assumed</i>	18.156	61	0,000

Research on the affective aspect of student activity in class groups using WhatsApp Group (class IX A) in asking questions has a low percentage result of 56.82%, seriousness in working on questions of 68.18%. As well as the ability of



students to express opinions by 56.02%. As for the class group using Google Classroom (class IX B) the percentage value for the ability to ask questions is 75.92%, the ability to answer questions is 76.82% and the ability to express opinions is 71.82%. This shows that the results of affective student learning independence for class groups using the Google Classroom application (grade IX A) are higher than for class groups using WhatsApp Group (grade IX B).

There is an increase from the first lesson to the fourth lesson. For class IX A the average gain is 83 at the first meeting, at the second meeting the average is 85, at the third meeting the average is 87, at the 4th meeting the average is 90. In class IX B at the first meeting the average gain is 84.2, the second meeting the average acquisition of 85.5, the third meeting the average acquisition of 87.7, the 4th meeting the average acquisition of 90.5.

The results of the analysis of the effectiveness test in the discussion in class IXA learning 1 obtained a sig value. 0.77. The significance is 0.05, if the data exceeds 0.05 then it can be called normally distributed data. The calculation results show that the sig value is  $0.77 > 0.05$ . These results can be concluded that the data for Class IX A learning 1 is normally distributed. Furthermore, for the acquisition of learning 2 it reaches  $0.97 > 0.05$  which is normally distributed. In learning 3, it was obtained  $0.134 > 0.05$ , which means that it is normally distributed. Furthermore, in learning 4 the results of the calculation reached the value of sig.  $0.67 > 0.05$  so the data is also normally distributed. It can be concluded that the scores on learning 1, 2, 3, and 4 for class IX A obtained data that were normally distributed.

Class IX B in learning 1 in calculating students' reading interest by performing a normality test obtained sig, 0.77. The significance is 0.05. So  $0.77 > 0.05$  means that the data is normally distributed. Furthermore, the results of the control group in learning 2 obtained a sig value. 0.108. So that the sig value is known.  $0.108 > 0.05$  can be concluded that the distribution is normal. In addition, it is also known that the value of sig. The control class in learning 3 reached 0.186. It can be concluded that the value of sig.  $0.186 > 0.05$  means that it is normally distributed. While in learning 4, the data is also normally distributed

with a sig value.  $0.077 > 0.05$ . It can be concluded that the learning outcomes 1, 2, 3, and 4 for class IX B obtained data that were normally distributed.

The average pre-test WhatsApp Group and Google Classroom in learning for knowledge assessment is 83. After learning, there is an increase in the post-test score with an average of 90. Based on the N-gain calculation, there is an increase in the pre-test and post-test results. -test class IX A is 0.67 in the medium category. Regarding the results of calculations in the experimental class, there was an increase in N-gain with a score of 0.70 in the high category with an average pre-test score of 84 and a post-test score of 91. So it can be concluded that the use of WhatsApp Group in class IX A and Google Classroom in class IX B effectively used in learning, especially social studies subjects.

#### **4. Conclusion**

The use of WhatsApp Groups in class IX A and Google Classroom in class IX B can be recommended for use in learning because they really help teachers in teaching and learning activities, students are also easier in collecting the assignments given. Although previously there were students' obstacles in using the WhatsApp Group and Google Classroom platforms, over time students began to get used to and make it easier to complete assignments.

Student learning outcomes increased after using the WhatsApp Group and Google Classroom learning media platforms. For class IX A the average gain is 83 at the first meeting, at the second meeting the average is 85, at the third meeting the average is 87, at the 4th meeting the average is 90. In class IX B at the first meeting the average gain is 84.2 , the second meeting the average acquisition of 85.5 , the third meeting the average acquisition of 87.7 , the 4th meeting the average acquisition of 90.5.

Learning that uses the WhatsApp Group and Google Classroom learning media platforms in class IX A and class IX B can be concluded to be effective for use in social studies learning to assist teachers in completing teaching and learning activities. There was an increase in the results of the pre-test and post-test for class IX A of 0.67 in the medium category. Regarding the results of

calculations in the experimental class, namely class IX B, there was an increase in N-gain with a score of 0.70 in the high category with an average pre-test score of 84 and post-test scores of 91.

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