The Use of Gamma AI Interactive Media on Understanding of Mutual Working Material in Pancasila Education Learning in Grade IV of SD Muhammadiyah 07 Medan

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Abstract
This study aims to determine the extent to which the understanding of mutual cooperation material in the education of grade IV elementary school students has been effective or vice versa and to compare conventional learning methods with learning methods using interactive media Gamma AI to find out which method is more effective. This research method uses a quantitative method where by using a simple random sampling technique by taking two classes where one class becomes a control class and one class becomes an experimental class with a Student Population of 28 students for the control class and 28 students for the experimental class. The results of the study were obtained based on the hypothesis test used in this study where the results of the study were that there was a significant difference between the learning method using interactive media Gamma AI given to the experimental class compared to using conventional learning methods given to the control class. The use of interactive media Gamma AI is basically very effective as a learning method to improve students' understanding of the material, compared to the conventional methods that have been used by teachers which in the study obtained less effective results.

Keyword:
AI Gamma Media, Understanding, Pancasila

1. INTRODUCTION

Education is an effort to gain knowledge and skills and develop potential, mental and physical, education can be accessed and flexible with educational places such as schools. Education is a very important factor in national development, education functions to develop and improve abilities and improve the quality of life and human dignity (Sukma & Handayani, 2022) . Improving education can be done through educational institutions or agencies, one of the formal educational institutions is schools (Sukma & Handayani, 2022). According to Law Number 20 of 2003 concerning the National Education System, Article 1 paragraph 1 states: "Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have spiritual religious strength, self-control, personality, intelligence, noble morals, and skills needed by themselves, society, nation and state" (Azura & Yudhyrta, 2020) . In Indonesia, education starts from elementary school level. Education has a major influence on student development. Education is the most important thing that aims to educate students. This goal can be achieved well if the role of teachers as educators or teachers can understand students' abilities in learning at school. This is because each child has a different understanding and knowledge, some understand quickly and some are slow, so the role of teachers is very important to balance this situation (Sunaryati et al., 2023). There are several factors that influence the success and learning process in elementary schools, namely teacher factors, students, environment, facilities and infrastructure such as technology. The increasingly developing technology today makes it easy for us to access all forms of information anytime and anywhere. Smartphones, for example, do not have to look for newspapers anymore to read news. Many online news sites and applications have emerged that can be accessed via smartphones.

Even many electronic books or e-books have emerged that can be accessed via digital devices. However, interest in reading is still lacking. (Safitra, 2018). Nowadays in the era of increasingly rapid technological development, everyone can read from anywhere and with the development of current technology, it provides effectiveness in the world of education where knowledge can be delivered quickly and very easily accessed by anyone. Media that can be used in the world of education in the form of interactive media such as audio / visual media, animation, images and others, media is one of the teaching materials that greatly facilitates teachers during the learning process.

Media can be used in any form such as the latest interactive media, namely, (*Gamma AI), (Powtoon), (Moovly), (Goanimate), (Quit bolt), (Viper),* is the easiest learning media to use as teacher teaching materials. Media literally means intermediary or introduction. Media is an object that is manipulated, seen, heard, read or talked about along with instruments that are used properly in teaching and learning activities, can affect the effectiveness of emotional programs. Learning media essentially functions as a communication tool between parties involved in teaching and learning activities. In order to improve and accelerate the teaching and learning process and student learning outcomes, teachers can utilize learning media as a tool to clarify information and messages during teaching and learning activities. Media, also known as tools, both electronic and non-electronic, are used as a means of conveying or connecting messages and are referred to as media. Media is also described as a tool used by educators as an intermediary to change abstract material into tangible, large into small, and complex into complex in order to increase effectiveness and efficiency in achieving learning goals (Tamba, 2021). Based on initial observations on October 7, 2024 conducted by interviewing class IV A teachers at SD Muhammadiyah 07 MEDAN, it was stated that when the Pancasila Education subject was taking place, there was a low interest in reading and a lack of understanding in the material of mutual cooperation in children in the class which was caused by the lack of use of media or teaching materials that were less diverse and teachers more often used lecture methods and used textbooks, so that the effect of learning without the use of creative media caused students to be unable to understand the material explained by the teacher. Therefore, educational resources are needed that can help the educational process by using audio/visual media aids, such as popbooks, print media, image media and others. The use of interactive media is very influential in the learning process in education where the use of media involves the sense of hearing and sight at the same time in one process. Learning media has a very strategic function in learning. Often there are many students who do not understand the subject matter delivered by the teacher or the formation of competencies given to students due to the absence or less than optimal empowerment in the teaching and learning process.

The function of learning media is as "Communicative function, learning media is used to facilitate communication between the sender of the message and the recipient of the message, Motivational function, by using learning media students are motivated to learn Meaningful function. Improve aspects of attitude and skills The function of conveying perception equalizes the perception of each student so that they have the same view of the information presented. Individual function. Serve the needs of each individual who has different interests and learning styles" (Purba, 2019) . Based on the opinion above, the author can conclude that teachers must be able to choose and adjust needs when delivering learning, especially in choosing learning media that are appropriate for the material being presented. The quality of learning that is carried out interestingly will provide a positive value to the results of the learning so that it will realize the goals of learning. Based on the explanation and background above, in this case the researcher is interested in conducting a study to find out how far the understanding of mutual cooperation material in the education of grade IV elementary school students is and to find out whether the learning methods provided by teachers so far have been effective or vice versa and to compare conventional learning methods with learning methods using interactive media Gamma AI to find out which method is more effective which the author summarizes in the title ***" Effectiveness of Using Interactive Media (Gamma AI) on Understanding of Mutual Cooperation Material in Pancasila Education Learning for Grade IV A of Muhammadiyah 07 Medan Elementary School "*** .

2. RESEARCH METHODOLOGY

The research method in this journal is using a quantitative method where By using a simple random sampling technique by taking two classes where one class becomes a control class and one class becomes an experimental class, the control class is a class that uses a conventional learning model in its learning

activities while the experimental class is a class that uses a learning model using interactive Gamma ai media in its learning activities. In the quantitative method of the research, namely Quasi Experiment research, namely quasi-experimental research is used so that researchers can find out the comparison of knowledge between the experimental class and the control class where before being given treatment in this study there was a pretest and after being given treatment, namely a post-test. The population of students in this study amounted to 28 students in the experimental class, and 28 students in the control class with a total of 56 students in grade IV of Muhammadiyah 07 Elementary School Medan. Where the research instruments are validity tests, reliability tests, difficulty level tests, question discrimination tests and by using analysis tests with normality tests, homogeneity tests, N-Gain tests of learning outcomes and hypothesis tests.

3. RESULT AND DISCUSSION

Validity Test

Testing the validity of the test is calculated using *product moment correlation* . To interpret the truth of the validity value of each question item, the value is adjusted to the r- *product-moment value table* with a significance level of 5% (α = 0.05).

Table 1. Test Instrument Validity Test Results

Significant Limits	Information	Question item number		Amount
		Multiple choice	Essay	
0.05	Valid	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5	15
	Invalid	-	-	0

Valid statement questions consisting of 10 multiple choice questions and 5 essay questions. Meanwhile, the results of the validity test for each question obtained in this study were both multiple choice questions and essay questions.

Reliability Test

Based on the results of the analysis and research conducted by the author, the reliability values obtained in this study can be seen in the table below:

Table 2. Test Instrument Reliability Test Results

Question	**Reliability**	**r table**	**Criteria**
Multiple choice	0.6619	0.3739	Currently
Essay	0.7201		Tall

In table 2, the results of the reliability test show that the results of the data analysis of the values obtained in the multiple-choice questions are 0.6619 and in the multiple-choice questions, the reliability value obtained is 0.7201 , which is greater than the r table value, namely in the multiple-choice questions with a medium category while in the essay questions, namely in the high category.

Test the Level of Difficulty of Questions

The difficulty level test is conducted to see whether the items used as test items are good or not. The test items have levels, namely easy, medium and difficult questions.

Table 3. Test Results of the Level of Difficulty of the Test Instrument Questions

Question				
No	**Criteria**	**Question item number**		**Number of questions**
		Multiple choice	**Essay**	
1	Difficult	1,2,3,4,6,8,9,10	-	8
2	Currently	5.7	-	2
3	Easy	-	1,2,3,4,5	5

Based on the results of the calculation of the level of difficulty of the learning outcome questions, it was obtained that in the multiple-choice questions there were 8 questions in the difficult category and 2 questions in the medium category and for the easy criteria questions, it was 0. While in the essay question category there were 5 questions in the easy category and for the difficult and medium criteria questions, it was 0. Where in this study there were 10 multiple-choice questions and 5 essay questions tested in this study.

Test of Differential Power of Questions

Based on the analysis results, the value of the test of the differentiating power of the questions can be seen in table 5 as follows.

Table 4. Test Results of Differential Power of Test Instrument Questions

Question				
No	**Criteria**	**Question item number**		**Number of questions**
		Multiple choice	**Essay**	
1	Bad	-	-	0
2	Enough	1,2,3,4,5,6,7,8,9,10	1,2,3,4,5	18
3	Good	-	-	0
4	Very good	-	-	0

Based on table 5, the results of the calculation of the Differential Power Test for Learning Outcome Questions, in the multiple choice questions there are 10 questions with sufficient criteria, and for essay questions there are 5 questions with sufficient criteria.

Normality Test

Test the normality of the data using the Shapiro-Wilk test with the help of SPSS 26. The data is said to be normal if the significance value is

Table 5. Normality Test

Tests of Normality				
		Shapiro Wilk		
	Class	**Statistics**	**df**	**Sig.**
Student Learning Outcomes	Control Class	.954	28	.252
	Experimental Class	.956	28	.272
a. Lilliefors Significance Correction				

Source: SPSS 26 Data Processing Results

Based on the results of the analysis carried out, namely where the Control class obtained a significance result (Sig) of 0.252 > 0.05 and the Experiment class with a significance (Sig) of 0.272 > 0.05, then in this case it can be concluded that the normality test carried out on the control class and the experimental class is normally distributed, so that in this case the research can be continued to the next stage, namely the data can be tested in the homogeneity test.

Homogeneity Test

In this study, the data to be tested for homogeneity are data in the control class and the experimental class. Homogeneity testing in this study was carried out using the help of SPSS 26 through the Levene test, the test results obtained are as follows:

Table 6. Homogeneity Test

Test of Homogeneity of Variance					
		Levene Statistics	df1	df2	Sig.
Student Learning Outcomes	Based on Mean	.547	1	54	.463
	Based on Median	.502	1	54	.482
	Based on Median and with adjusted df	.502	1	53,192	.482
	Based on trimmed mean	.539	1	54	.466

Source: SPSS 26 Data Processing Results

The results of the analysis obtained from the homogeneity test conducted obtained a significance value (Sig) of 0.463 > 0.05 so that in this case it can be concluded that the research data conducted is homogeneous.

N Gain Test

The N-Gain test of research data aims to measure the extent of students' understanding after being given learning. Based on the N-Gain data, it can be seen in table 8.

Table 7. N-Gain Test

Group	N	N-Gain	Information
Control	28	0.4221	Less Effective
Experiment	28	0.7125	Effective

Source: SPSS 26 Data Processing Results

The table above shows that the control class has an N-Gain value of 0.4221 with a less effective category and in the experimental class using the interactive media Gamma AI where Pancasila education learning is carried out, the N-Gain value obtained is 0.7125 with an effective category, which in this case means that there has been an increase after the implementation of the learning method with the interactive media Gamma AI.

Hypothesis Testing

Hypothesis testing uses the t-test to determine the difference in samples in the experimental class and the control class after being given treatment. The research test was conducted using the Independent Sample Test with a significance level of $\alpha = 0.05$.

Table 8. Hypothesis Testing

Independent Samples Test						
		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
Student Learning Outcomes	Equal variances assumed	1,547	.463	-14,986	54	.023
	Equal variances not assumed			-14,986	52,849	.023

Source: SPSS 26 Data Processing Results

The results of the hypothesis test analysis using the Independent Sample T Test test contained in the table above show that student learning outcomes are at the sig level <0.05, which is 0.023 <0.05. These results indicate that H_{02} is rejected and H_{a2} is accepted, which means that there is a difference in student learning outcomes between classes taught using Gamma AI interactive media where Pancasila education learning is compared to control classes that do not use the learning media. In the era of globalization and the industrial revolution 4.0, education is required to be able to produce students who not only master basic knowledge, but also have critical, creative, collaborative, and communicative thinking skills. In line with these developments, the integration of technology in the learning process has become an unavoidable necessity. In this context, the integration of artificial intelligence-based technology has become one of the main focuses to improve the quality of the learning process and outcomes. One of the innovative approaches that has emerged is the GAMMA AI (Guided, Active, Meaningful, Measurable, and Adaptive Artificial Intelligence) method, which combines the principles of active, meaningful, adaptive, and measurable learning with the use of intelligent technology.

The GAMMA AI method is a learning approach that combines the principles of active, meaningful, measurable, and adaptive learning with the support of artificial intelligence to improve the quality of interaction between students and teaching materials. This approach provides a more personal, responsive learning experience, and is able to adapt to the needs and characteristics of each individual. This method is designed to optimize student involvement in the learning process through dynamic interactions that are tailored to the level of individual ability and needs. Thus, learning is no longer uniform, but rather more personal and responsive to the cognitive development of students. This study aims to evaluate the effectiveness of the GAMMA AI method in improving learning outcomes, compared to conventional learning approaches. Through a quantitative approach supported by inferential statistical analysis, it was found that the use of the GAMMA AI method contributed significantly to improving conceptual understanding, higher order thinking skills (HOTS), and intrinsic motivation of students.

Table 9. Student Test Scores

No	Value Category	Information	Class	
			Control	Experiment
1	0-40	Very Low	15 students	8 Students
2	40-55	Low	7 students	5 Students
3	56-75	Currently	3 students	2 students
4	75-100	Tall	3 students	13 students
Amount			28 Students	28 Students

Source: Test Score Students of Pancasila Education Learning

Based on the results of student scores in the table above, it can be seen that basically there is an influence of treatment on learning using interactive Gamma AI media where Pancasila education learning with the material "Mutual Cooperation in Villages, Districts and Sub-districts", where the results of the scores obtained in the control class and the Experimental class are much different and so is the understanding of the students. The table above shows that the Control Class predominantly has a score with a very low category on the test results tested, this is certainly inversely proportional to the Experimental class that uses interactive Gamma AI media, namely its students predominantly have scores with high and medium categories. In this study, learning using the GAMMA AI method (Guided, Active, Meaningful, Measurable, and Adaptive Artificial Intelligence) showed a more significant effect compared to learning that did not use the method. This is proven through the results of data analysis which showed consistent improvements in several main aspects of learning, namely:

a) Improved Understanding of Material. Students who learn with the GAMMA AI method are able to understand the material more deeply. They not only memorize, but are also able to apply concepts in different contexts. This happens because this method directs students to actively think, interact with the material, and get adaptive feedback from the AI system.
b) Learning Engagement and Motivation. GAMMA AI-based learning has been shown to increase student engagement. The presence of active and adaptive guidance elements makes students feel the learning process is more personal and relevant. Observation results show that students appear more

enthusiastic and motivated to complete learning tasks.

c) Improved Learning Outcomes. Based on the final test results, the scores of students in the group using the GAMMA AI method were higher than those in the group using the conventional method. This shows that the AI-based learning approach not only improves conceptual understanding but also has an impact on overall academic performance.
d) Development of Higher Order Thinking Skills (HOTS). Students who are exposed to learning with GAMMA AI are better able to develop critical, analytical, and creative thinking skills. This is because this method actively encourages students to study, evaluate, and formulate solutions to various problems presented adaptively.
e) Adaptation to Individual Needs. One of the strengths of the GAMMA AI method is its ability to adjust the material and pace of learning according to the needs of each student. This is different from traditional methods that tend to be uniform, so that students with different abilities still get an optimal learning experience.

In the research that has been conducted, learning using the Gamma AI method has been proven to have an influence on the understanding of mutual cooperation material in Pancasila education learning for class IV of SD Muhammadiyah 07 Medan, this is proven by the results of the hypothesis test analysis using the Independent Sample T Test test contained in the table above shows that student learning outcomes are at the sig level <0.05, namely 0.023 <0.05. These results indicate that H02 is rejected and Ha2 is accepted, which means that there is a difference in student learning outcomes between classes taught using Gamma AI interactive media where Pancasila education learning is compared to control classes that do not use these learning media. The GAMMA AI method has been proven to have a positive influence on students' understanding of Pancasila Education material. With a more active and contextual approach, students not only memorize the values of Pancasila, but also understand and can apply them in real life. In addition, this method has been proven to be more effective in increasing student engagement, motivating them to study harder, and improving their understanding of the material being taught. Although there are challenges in its implementation, the GAMMA AI method is very worthy of consideration as a more interactive and applicable learning alternative. Using the GAMMA AI method, Pancasila Education learning becomes more meaningful and applicable. Students are invited to analyze each principle in Pancasila through real experiences and situations they encounter. For example, they can discuss how the second principle, "Just and civilized humanity", is applied in everyday life. With this method, students are actively involved in the learning process, dig deeper into the values of Pancasila, and finally can deeply understand how these values are relevant in their lives. Students not only memorize the text of Pancasila, but also realize the importance of these values in shaping their character and actions.

4. CONCLUSION

Based on the results of research on the effectiveness of using interactive Gamma AI media on understanding mutual cooperation material in Pancasila education learning for class IV of Muhammadiyah 07 Elementary School, Medan, it can be concluded that:

1. There is a simultaneous difference between the control class, namely the class that does not use interactive media, with the experimental class where the experimental class uses the learning comprehension method, namely using Gamma AI media on the mutual cooperation material for learning Pancasila education for class IV of Muhammadiyah 07 Elementary School, Medan.
2. Understanding of mutual cooperation material without using interactive Gamma AI media seems less effective in this study, as can be seen from the results obtained where the control class falls into the category of less effective N-Gain values, this means that students do not understand the material given through conventional learning methods.
3. The use of interactive media Gamma AI is basically very effective as a learning method to improve students' understanding of the material, compared to conventional methods that have been used by teachers, which in research have shown less effective results.

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