

The Effect of Interactive Learning Media on Improving Students' Critical Thinking Skills

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ABSTRACT

This study was conducted with the aim of studying "the effect of interactive learning media on improving students' critical thinking skills". This study uses variable (X) interactive learning media and variable (Y) improvement of students' thinking skills. In this study, quantitative research techniques were used, with experimental research methods, namely quasi experimental design. This research used Nonequivalent Control Group design. The learning design in this study is Pretest, Treatment, and Posttest. Data collection in this study was in the form of tests given to students and documentation. While the validation of the instrument was tested using the content validation test, the construct validation and reliability. Data analysis techniques aim to collect information from all respondents or other data sources using data analysis techniques in the form of normality tests using the Kolmogorov-Smirnov formula, Levene Statistics homogeneity test, and Independent Sample T-Test (t-test) hypothesis testing. The normality results of the pretest or initial ability are 0.200 which means that it is normally distributed. Then the experimental posttest gets a sig value. 0.200 is also normally distributed. The significance value of the homogeneity test is $0.101 > 0.05$ the data is declared homogeneous. Significant findings (2-tailed), assessed at $0.000 < 0.05$. If the significant value (2-tailed) < 0.05 then H_a is approved and H_o is rejected in accordance with the decision-making criteria. Based on the data analysis and hypothesis testing that has been done, it can be concluded that there is an "effect of interactive learning media on improving students' critical thinking skills".

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INTRODUCTION

The importance of the learning process for a teacher's success in directing students to learn effectively cannot be underestimated. However, there are still many shortcomings that hinder the learning process of students, especially in terms of mathematics. One's ability to think logically, critically, analytically, and systematically becomes the main focus (Yayuk, 2019).

Basic abilities must be constantly polished and improved so that they can develop into potential in carrying out a task. To improve capabilities, one needs to go through a process of refining their thoughts, which will eventually lead to the emergence of specialized skills within themselves. Skills can also keep up

with the changing times, where these skills can adjust to the development of thoughts and situations that are being faced.

Students are required to have skills that can compete at the international level. In this era, students need to develop four skills called the 4Cs, namely the ability to think in a creative way, the ability to think critically, the ability to communicate, and the ability to work together collaboratively. One important aspect students must have the ability to think critically. Critical thinking skills are abilities that enable students are taught to understand problems in an organized way, face obstacles with organized methods, formulate creative questions, and design appropriate solutions to overcome existing problems.

Improving the quality of learning is an effective way to achieve better skills, and the role played by educators in implementing learning has great significance in creating a better future for learners. Teachers also need to acquire the latest skills and innovations in addressing the learning process. Kristiawan revealed that education is an effort to develop learners' human abilities, both in terms of physical, mental, and creativity, so that their potential can be realized and useful in their lives.

From observations and interviews with class teachers, it is known that students' critical thinking skills are still lacking. This can be observed through the level of engagement and mindset of students during the implementation of the teaching-learning process. This lack of critical thinking skills can be observed from several signs. For example, the lack of motivation to learn can be seen from students' unwillingness to achieve good results and lack of enthusiasm in learning. The drive and need to learn is also low, seen from the lack of student watching the teacher carefully during the teaching process. In addition, the lack of hopes and dreams for the future can be seen from the lack of desire to achieve. Appreciation for learning is also low, seen from students' unresponsiveness when receiving praise from the teacher. In addition, the lack of interesting activities in the educational process, such as the utilization of objects or devices to provide illustrations or examples., also makes students uninterested in learning. Finally, the learning environment is not conducive as seen from the noise of students in the classroom during the learning process. This situation occurs because teachers only rely on the use of guidebooks and blackboards during the learning process, which causes students to feel bored and less interested in the learning provided. This results in noise and lack of attention from learners. This situation has a significant impact on the effectiveness of the learning process.

BasBased on the explanation that has been conveyed, in conclusion, learning media that involves interaction is an appropriate alternative to

overcome the problem. overcome the problems of students' critical thinking skills. Media is a tool that plays a role in connecting information with the aim of learning. Interesting media is media that is able to inspire and spur students' interest in learning, with the aim of motivating them to learn with enthusiasm and high dedication. In addition, the media must be able to attract students' attention to the subject matter delivered by the teacher. Learning is the process of communicating various kinds of information and carrying out activities that have been designed to facilitate the achievement of the desired learning objectives.

Learning is an activity that takes place in the classroom, where the main role is given to students in the learning process. This process will certainly create changes in students, including changes in understanding, abilities, and emotional attitudes and values. In the teaching process, teachers need to plan strategies that can provide comprehensive learning experiences to students in order to achieve the expected level of cognitive understanding, psychomotor skills, and emotional development. In addition, it is important for educators to have a variety of learning references, such as resources related to group and object learning, as well as information that can be utilized to facilitate the teaching process in accordance with the principles of communication (Wijaya & Hasan, 2016).

The utilization of learning media has a significant role in the learning stage education and teaching process. In the educational process, teachers often utilize various learning media as a means to convey material to students, making it easier for them to understand lessons. Utilizing learning media in the educational process can generate new interests and motivations that can affect students' psychology, and encourage them to learn with higher enthusiasm (Wulandari et al., 2023).

According to Wiratmojo and Sasonohardjo (Junaidi, 2019a) at the teaching orientation stage, the use of learning media will greatly improve the effectiveness of the learning process and communication of messages and materials delivered at that time. Based on the explanation given by Zaini regarding learning media, students need intermediary assistance or what is often referred to as learning media. The purpose of using this learning media is so that teachers can divert students' attention so that they do not feel bored and saturated during the teaching and learning process. According to Miftah, media is a very important part of the learning context. Therefore, teachers need to pay special attention to this component. Teachers must realize how important media is in supporting the teaching and learning process and helping students learn. In order to achieve learning objectives easily, it is important to select

media that are appropriate to the needs. By using this learning media, learning will become more effective, efficient and interesting. In this case, it is important for teachers to do detailed planning when they design learning activities in the classroom.

Interactive process is a form of communication that involves two or more directions through several communication components (Cahyaningias & Mochamad, 2021). Interactive learning media is a means used to connect and convey information so that the teaching process can run smoothly communicatively, both from students to educators and vice versa. In this media there is interaction between students and educators with the aim of achieving the desired learning outcomes.

Researchers are interested in researching with the title: "The Effect of Interactive Learning Media on Increasing Students' Critical Thinking Skills". Where this title is obtained based on the background information that has been given above.

RESEARCH METHODE

This research uses variable (X) interactive learning media and variable (Y) improvement of students' thinking skills. In this study, quantitative research techniques were used, including experimental research methods, namely quasi experimental design. This research uses the Nonequivalent Control Group design. The learning design in this study is Pretest, Treatmen, and Posttest. In this study, data were collected through the administration of tests given to students and documentation. While the validation of the instrument was tested using the content validation test, namely validation from lecturers and elementary school teachers, the construct validation test, namely validation that has been tested on elementary school students using the product moment formula, and reliability, which is a way to assess the consistency and stability of respondents' responses to questions about a question structure that has several dimensions and is arranged in the form of a test using the Cronbach Alpha formula. Data analysis techniques aim to collect information from all respondents or other data sources using data analysis techniques in the form of normality tests using the Kolmogorov-Smirnov formula, Levene Statistics homogeneity test, and Independent Sample T-Test (t-test) hypothesis testing.

RESULT AND DISCUSSION

This research is intended to identify data at SD Negeri 111 Palembang which is located at Jl. Raya Musi Barat in the academic year 2023/2024. Learning time starts from 07.00 WIB until 12.00 WIB. So the the teaching

process is carried out by interacting directly and to get a research schedule, researchers first discuss with the school, especially the principal and class teacher before conducting research.

The research was conducted on January 15 to 19, 2024 using one class, namely the experimental class. The number of classes sampled was 31 students. as for the purpose of conducting this research is to see how interactive learning media affects the improvement of Students' critical thinking skills in an educational environment. In this study, the following results were obtained.

Table 1.

Validity Test Results

Item	r _{Count}	r _{table}
1	0.424	0.381
2	0.508	0.381
3	0.101	0.381
4	0.514	0.381
5	0.506	0.381
6	0.474	0.381
7	0.430	0.381
8	0.438	0.381
9	0.556	0.381
10	0.567	0.381
11	0.794	0.381
12	0.568	0.381
13	0.630	0.381
14	0.610	0.381
15	0.462	0.381
16	0.745	0.381
17	0.521	0.381
18	0.477	0.381
19	0.338	0.381
20	0.586	0.381

It can be observed in the table above that 20 questions have been tested on students in elementary schools and there are 18 valid questions and can be used, but 2 questions are invalid and cannot be used.

Table 2.

Reliability Test Results

Cronbach's Alpha	Items
0,854	18

In the table, it is found that the calculation result of Cronbach's Alpha is $0.854 > 0.6$, so the instrument is declared reliable. Then the 18 questions can be used and are suitable for use. In the normality test, decision making is based on a significance threshold of 0.05. If the importance level is less than 0.05, then the results will follow a normal distribution. If the significance level value is less than 0.05, then the values do not follow a normal distribution. The following are the test results

Table 3.
Normality Test Results

Tests of Normality							
Class		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Critical thinking	Pretest	,106	31	,200*	,970	31	,509
	Experiment						
	Posttest	,104	31	,200*	,958	31	,255

When conducting a normality test using the Kolmogorov-Smirnov formula, it is found that the sig. value on the pretest or initial ability is 0.200 which means normal distribution. Then the experimental posttest gets a sig value. 0.200 is also normally distributed. Because both data are normally distributed, it can continue at the next test stage, namely the homogeneity test. This homogeneity test uses the Levene Statistical test applied in this study. Decision making is based on a significance of 0.05. If the significance level value is greater than 0.05, then the distribution of the values is homogeneous. If the significance value is less than 0.05, it means that the value does not have a homogeneous distribution.

Table 4.
Homogeneity Test Results

Test of Homogeneity of Variances			
Levene Statistic	df1	df2	Sig.
2,774	1	62	,101

Given the significance value of the homogeneity test of $0.101 > 0.05$, it can be seen from the table above that the data is homogeneous. After the normality and homogeneity tests have normal and homogeneous data, then the normality test is carried out. For this hypothesis test, The importance of the significance value (2-tailed) is to make a decision whether the hypothesis can be accepted or rejected. If the significance value (2-tailed) has a value greater than 0.05, then

we reject the alternative hypothesis (Ha). However, if the significance value (2-tailed) has a value less than 0.05, then we accept the alternative hypothesis (Ha).

Table 5.
Hypothesis Test Results

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Critical thinking	Equal variances assumed	2,123	0,150	-6,785	62	0,000	-8,597	1,267	-	-6,064
	Equal variances not assumed			-6,754	59,509	0,000	-8,597	1,273	-	-6,051

In the previous table, there is a significant finding (2-tailed) which is considered to have an important value of 0.000, which is less than 0.05. If the significant value (in two-sided direction) is less than 0.05, then the research findings will Support alternative ideas and reject the idea that there is no difference based one decision-making criteria. Therefore, it can be concluded that interactive learning media has a considerable impact in improving learners' analytical skills.

From the explanation given earlier, It can be concluded that the use Learning media that involves interaction between students and learning materials can improve students' critical thinking skills. This is in line with and supported by (Harsiwi & Arini, 2020) which has overall results, the utilization of learning media in the form of interactive swf videos can make students

motivated and respond positively to the use of learning methods that involve interaction. It has a favorable effect on improving students' academic performance, thus influencing interactive learning media markedly. Then according to research (Kartini & Putra, 2020), the results of using Android-based interactive media in learning the IUPAC name of inorganic compounds produce significant differences in student learning outcomes. This evidence can be seen from the t test results which show the t count with a value of 1.87, exceeding the t table value of 1.67 which is in the Ho rejection area. In addition, there is also a considerable difference in the N-gain value between the control class and the experimental class. Thus, the use of android-based interactive learning media in the experimental class has an important impact on student learning achievement. This can be seen from the biserial correlation coefficient value of 0.74 and the coefficient of determination of 62.72% which shows "a significant relationship between the use of android-based interactive learning media and student learning outcomes". And also supported by (Harvianto, 2021) with the results of using interactive learning media during the covid-19 pandemic has a positive impact on improving participants' learning achievement. The use of interactive learning media during the co-19 pandemic can provide assistance to teachers in conveying information or knowledge to students which is currently not possible to do directly in the classroom.

CONCLUSION

Based on data analysis and hypothesis testing that has been done, It can be concluded that the use of interactive learning media has a positive impact on improving students' critical thinking skills. This is evidenced by the sig. value on the pretest or initial ability which is 0.200 which means normal distribution. Then the experimental posttest gets a sig value. 0.200 is also normally distributed. Because both data are normally distributed. the significance value of the homogeneity test is $0.101 > 0.05$ the data is declared homogeneous. Significant findings (2-tailed), assessed at $0.000 < 0.05$. If the significant value (2-tailed) < 0.05 then Ha is approved and Ho is rejected according to the decision-making criteria.

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