

The Influence of Diorama Media on Students' Critical Thinking Skills in Social Studies Learning

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Abstract: This study examines the impact of Diorama media on fifth-grade students' critical thinking skills in social studies at MIS Asmaul Husna. A quantitative experimental design was employed, involving 38 fifth-grade students divided equally into control and experimental groups (19 students each). Data were collected through pretest-posttest assessments to measure critical thinking skills before and after Diorama media implementation in the experimental group. Hypothesis testing revealed a statistically significant effect (sig. 2-tailed = 0.000 < 0.05), confirming that Diorama media enhances critical thinking skills. The experimental group showed marked improvement compared to the control group, leading to the acceptance of H_a (alternative hypothesis) and rejection of H_o (null hypothesis). This study pioneers the application of Diorama media in social studies education at the elementary level, demonstrating its efficacy as an innovative pedagogical tool for fostering higher-order thinking skills. Educators can adopt Diorama media to create engaging, tactile learning experiences that promote active student participation and critical analysis in social studies curricula. The findings provide empirical evidence supporting the integration of visual-spatial learning tools in elementary education, offering a replicable model for enhancing critical thinking through multisensory instruction.

Keywords: Critical Thinking, Diorama Media, Social Studies Learning

A. Introduction

Critical thinking is a crucial skill in education, both at the local and global levels. According to a UNESCO report, critical thinking is recognized as one of the core competencies that learners must possess to address the challenges of the modern era, especially in the face of rapid technological and informational advancements (Halim, 2022). In Indonesia, based on PISA 2018 data, the critical thinking skills of Indonesian students in facing global challenges are still relatively low. This highlights the importance of improving critical thinking skills at all levels of education, including primary education (Hidayati et al., 2024).

In essence, media facilitates students' understanding of learning materials and provides other benefits (Haidir et al., 2022), such as developing critical thinking skills and broadening their horizons. The use of media in education can also increase student participation and foster new interests and desires (Halimsyah Rambe, 2023). This is because the spirit of these media is to convey learning materials in a way that is easier for students to understand and has other advantages such as critical thinking and familiarity with the latest technology (A. J. Nasution et al., 2023). Engaging media can also help students remember what they learn, such as through images or other methods, which are generally more memorable than simply presenting plain text (Neliwati, 2022).

A diorama is a small three-dimensional learning medium that helps students understand the material (Risa, 2024) which is specifically designed to depict reality visually to illustrate real and concrete phenomena or situations. A similar thing was also expressed by Agustina in a study conducted by (Bali, 2023), which stated that "Diorama" is a medium that can provide knowledge or understanding that can be demonstrated directly from all directions and resembles the actual situation. A diorama contains small three-dimensional objects such as houses, scarecrows, and so on (Evitasari & Aulia, 2022). Therefore, this medium is very suitable for use in elementary schools, especially in the field of Social Studies (IPS), specifically those that study material on natural and artificial features.

Although critical thinking has become a focus in educational curricula, many schools still rely on traditional teaching methods that do not encourage students to think analytically. One way to enhance this skill is by using interactive learning media, such as dioramas. Diorama media can provide a more tangible learning experience, encouraging students to be more active in observing, analyzing, and presenting information. However, research on the use of diorama media in Islamic Elementary Schools (MIS) is still limited. In practice, many students struggle to develop critical thinking skills, particularly in Social Studies (IPS). The existing learning process often does not provide opportunities for students to think critically, as the questions posed by teachers tend to focus solely on the material that has been read, without prompting deeper thinking or independent exploration of answers (Halim, 2022).

In social studies, the most common methods used are lectures and reading, followed by assignments based on the textbook (Nunzairina, 2021). After completing assignments during the lesson, students are asked to exchange books with their deskmates and check each other's answers. At this point, students take turns reading and answering questions, with the teacher providing only explanations of the correct answers. However, learning media is still underutilized in this process.

In fact, in 21st-century learning, teachers and students should work together. Now, teachers no longer serve as the sole source of information but also act as mediators and facilitators in the student learning process. One of the students' problems is that

teachers are not yet able to develop learning methods. Teachers still use the lecture method, so students only listen and take notes, and there is less student engagement (Wandini et al., 2021). Therefore, teachers must be more creative in choosing methods, models, strategies, media and other supporting tools to organize and implement learning (Lesmana, 2023). Overall, the critical thinking indicators developed by Ennis offer a broad framework for improving students' critical thinking skills. By incorporating these indicators into the educational process, particularly in Social Studies, students will be trained to critically analyze social issues, draw logical conclusions, and make decisions based on strong evidence.

According to (Syarbaini saleh, 2022), a deep understanding of this process can open up many new opportunities for an individual. Critical thinking, when examined further, is crucial to the learning process because it involves a structured and systematic analysis of new ideas (A. F. Nasution et al., 2023). In fact, Social Science is a field of study that examines various aspects of human behavior and interaction in a social context (Astuti et al., 2022). Social studies as essentially the study of humans and their environment. Thus, the core of social studies is the relationship between humans and the environment in everyday life (Nashrullah, 2022). This explanation is reinforced by (Susanto et al., 2020) social science is considered as a program in learning activities designed to equip students with the ability to understand and analyze various problems from various perspectives.

Likewise, social studies are taught in elementary schools (Komalasari et al., 2021). In essence, it functions to prepare, advance, and shape the skills of students who acquire the knowledge, attitudes, values, and basic skills needed in community life (Ningrum & Dahlan, 2023); (Damanik, 2020). So that students are able to understand concepts related to community life and have important skills amidst global developments to be able to contribute to creating better living conditions (Pudjowati et al., 2024). Therefore, social studies learning is very important to improve students' understanding of various concepts of community life and critical thinking in understanding local issues.

Based on previous facts of research on students' critical thinking abilities conducted by (Pidada et al., 2023), it was found that the application of the Group Investigation model supported by diorama media was proven to be effective in improving independent attitudes and critical thinking abilities of fifth grade elementary school students with an average score of independent attitudes in the experimental group reaching 87, while critical thinking abilities obtained an average of 88. On the other hand, in the control group, the average independent attitude was only 67, and critical thinking abilities were at 72. Based on this descriptive analysis, it can be concluded that both independent attitudes and the use of the group investigation learning model with the help of diorama media were proven to be effective in significantly improving students' critical thinking abilities. Another finding obtained by researchers (Devi Safitri, 2022) showed that the average post-test score was higher

than the pre-test, proving the effectiveness of diorama media in improving student learning outcomes. The average post-test score was 85.3, which is in the excellent category, and the average pre-test score was 63.3, which is in the adequate category. The results of the N-Gain calculation showed that the average score of 64.74 for the experimental class was included in the effective category. Therefore, the use of diorama media is recommended as an effective learning strategy.

Based on the literature review above, it is evident that the novelty of this research focuses on the impact of using diorama media on students' critical thinking skills in Social Studies lessons for grade V at MIS Asmaul Husna. The use of diorama media in the learning process not only makes the learning experience more engaging and interactive but also helps students understand the material more deeply. Clearly, attractive and creative media aim to capture students' interest in the lessons delivered by the teacher, thereby enhancing the overall quality of learning and improving students' critical thinking abilities.

This study aims to answer the question: "How does diorama media improve students' critical thinking skills in Islamic Elementary Schools (MIS)?" With a quasi-experimental design, this research is expected to provide insights into the effect of diorama media on students' critical thinking skills, as well as offer practical contributions for educators in integrating this media into their teaching. The study intends to assess the impact of diorama media on students' critical thinking abilities in Social Studies lessons for grade V at MIS Asmaul Husna, identify the aspects of learning most affected, and provide recommendations for teachers on its implementation. It is hoped that the results of this study will lead to more effective and innovative teaching methods that cater to students' needs.

B. Methods

The experimental method is the main method in this research, with a quantitative approach. Quantitative research utilizes data collection instruments based on numbers and numerical measurements (Ardiansyah et al., 2023). The collected data is then input into a statistical measurement scale, which aims to simplify and group the data, as well as to determine the relationship between variables and identify differences between data groups (Soesana et al., 2023). To identify the impact of changes in the independent variable on the dependent variable, special procedures are used during its implementation. For this experiment, a quasi-experimental *design was used* in the form of a *Nonequivalent Control Group Design*. (Yusri, 2024), and measurements are carried out both before and after treatment by providing the necessary information to the subject or group concerned (Sukarelawan et al., 2024).

The research procedure began with a preparation phase, which included the preparation of social studies learning materials relevant to the implementation of diorama media, as well as the development of critical thinking test instruments.

After that, a pretest was conducted to evaluate students' initial abilities. In the next stage, the diorama media was implemented in the social studies learning process for several sessions. Following the implementation, a posttest was conducted to measure changes in students' critical thinking skills. Data obtained from the pretest and posttest were then analyzed using descriptive statistics to provide an overview of the data, and a t-test to assess significant differences between the pretest and posttest results.

The pre-test and post-test questionnaires used in this study were validated through expert reviews and pilot testing, with a Cronbach's α value of 0.887. The research instrument consisted of a test-form questionnaire, containing several questions for the students as the research subjects, functioning as a data collection method to gather information from the respondents. The data collection tools used in this study included observation, experiments, and documentation. The data obtained from the pre-test and post-test were then analyzed using descriptive and inferential statistics. A t-test was conducted to compare the critical thinking abilities between the experimental group and the control group. This study aims to understand the improvement that occurs by comparing the results of previous tasks with those of the current tasks (Eka Yusnaldi, 2024).

C. Results and Discussion

This research was conducted in class V MIS Asmaul Husna. The research sample consisted of 19 fifth grade students selected to represent the research population. This research used a Nonequivalent Control Group Design, where students were divided into two groups, namely the experimental group and the control group selected randomly. At the beginning of the study, both groups were given a pretest to measure their initial abilities. After that, the experimental group was given special treatment according to the research variables, while the control group did not receive the treatment. After the treatment was completed, both groups were given a posttest again to determine the differences in learning outcomes between the experimental group and the control group. In this study, learning media using Diorama media was used as a tool to understand the impact of Diorama media on students' critical thinking skills.

Instrument Test Validity

We used product-moment correlation to ensure the validity of each question, by comparing the score for each question with the total score. The test was conducted on the distribution mark r_{count} with significance 5%. So, the value r_{table} is 0.456. The results of the validity test can be seen in the following table:

Table 1. Validation Test

	Person Correlations Total
P1	528
P2	539
P3	650
P4	652
P5	615
P6	546
P7	520
P8	488
P9	544
P10	592
P11	701
P12	493
P13	604
P14	492
P15	600
P16	564
P17	520
P18	666
P19	508
P20	532

Based on the table above, the analysis results show that out of the 20 statements given to respondents, all were declared valid. Validity testing was conducted using the SPSS application to assess the feasibility of each statement item, with the results of $R\text{-calculate} > R\text{-table 1}$ (0.456). Thus, all statement items (P1-P20) met the validity criteria and were suitable for use in research for testing on students.

Instrument Reliability test

The results of the reliability test on the test instruments can be seen in Table 2 below:

Table 2. Reliability

Reliability Statistics	
Cronbach's Alpha	N of Items
887	20

From the table above, it can be seen that the reliability test results have met the requirements to be declared reliable. This is evidenced by the Cronbach's Alpha obtained. Data is considered unreliable if the Cronbach's Alpha value is less than or equal to 0.6. Conversely, the analysis results of the data collected from the respondents in the study showed a Cronbach's Alpha value of 0.887. This value

indicates that this test instrument is highly reliable and has consistent results regarding what is intended to be measured.

Distinguishing Power

Discriminating power is used to differentiate between students who have mastered the material taught and students who have less mastery of the material taught. Based on the results of the trial calculation of the social studies learning outcome test, a summary of the discriminating power is obtained in Table 3.

Table 3. Distinguishing Power

Statement No	Distinguishing Power	Criteria
1	475	Enough
2	481	Enough
3	592	Very good
4	584	Good Sanat
5	564	Very good
6	480	Enough
7	467	Enough
8	403	Enough
9	464	Enough
10	546	Good
11	642	Very good
12	419	Enough
13	523	Good
14	430	Enough
15	536	Good
16	504	Good
17	454	Enough
18	610	Very good
19	464	Enough
20	454	Enough

Based on the table above, the analysis results can be concluded that the discriminatory power of the 20 items shows that the instrument's ability to differentiate respondents is quite varied. Several items, such as numbers 8, 12, 14, 17, 19, and 20, show discriminatory power that falls into the sufficient category. Other items such as numbers 1, 2, 6, 7, and 9 are also at the sufficient level, but approaching a higher category. There are also items that fall into the good category, namely numbers 10, 13, 15, and 16, which show stronger discriminatory power. Meanwhile, items numbers 3, 4, 5, 11, and 18 have very good discriminatory power, meaning they are very effective in differentiating the ability levels of participants. Overall, this instrument is quite reliable because most of the items are at the sufficient to very good level, making it suitable for use in measuring student abilities accurately. Before conducting a hypothesis test using the t-test on the students' critical thinking test results, a prerequisite test is first carried out which includes:

Normality Test

One of the important requirements before conducting a statistical test is to ensure that the data distribution is Both samples follow a normal distribution. To check the normality of the data, the Liliefors test was used, with the stipulation that the data is considered normal if the calculated L value is smaller than the L table at a significance level of 0.05. The results of the normality test can be seen in the appendix. Briefly, the results of the normality test for Pretest and posttest data from both classes are presented in Table 4:

Table 4. Normality Test

Tests of Normality							
Class		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistics	Df	Sig.	Statistics	Df	Sig.
Results	Pretest control	.127	19	.200 *	.903	19	.054
	Posttest control	.103	19	.200 *	.964	19	.654
	Pretest experiment	.117	19	.200 *	.963	19	.637
	Posttest experiment	.173	19	.137	.927	19	.155

Based on the data testing results listed in Table 4, the significance value (sig) for the control group pre-test was 0.054, which is greater than 0.05. This indicates that the control group pre-test data is normally distributed. Furthermore, the sig value for the control group post-test is 0.654, also greater than 0.05, so the control group post-test data can be said to be normal. In the experimental group pre-test, the sig value is 0.637, which indicates that the data follows a normal distribution. Finally, the sig value for the experimental group post-test is 0.155, which indicates that the experimental group post-test data is also normally distributed.

Homogeneity Test

After the data from both groups were declared normally distributed, a homogeneity test was performed. This test aims to determine whether the data from both groups have the same variance or are homogeneous. According to the test criteria, data is considered homogeneous if the significance value is greater than 0.05. Conversely, if the significance value is less than 0.05, the data is considered non-homogeneous. The homogeneity test can be seen in Table 5.

Table 5. Homogeneity Test

Test of Homogeneity of Variance					
		Levene Statistics	df1	df2	Sig.
Mark	Based on Mean	.097	1	36	.757
	Based on Median	.119	1	36	.732
	Based on Median and with adjusted df	.119	1	33,578	.732
	Based on trimmed mean	.113	1	36	.739

Judging from the test results listed in table 5. Shows that the data post-test experimental and control groups were 0.757. This indicates that the variance of the data from both groups was homogeneous.

Hypothesis Testing

Hypothesis testing was conducted using a paired sample t-test on posttest data from participants from the experimental and control classes using the IBM SPSS version 26 program. If the significance value (2-tailed) is less than 0.05, this indicates a significant difference between the variables before and after treatment, meaning the treatment has an effect. Conversely, if the significance value is more than 0.05, there is no significant difference, so it can be concluded that the treatment has no effect. The complete results of this test can be seen in Table 6.

Table 6. Hypothesis Testing

Paired Samples Test		Paired Differences		95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
		Mean	Standard Deviation	Std. Error Mean	Lower	Upper		
Pair 1	Pre-Test - Post-Test	-16,895	5,311	1,219	-19,455	-14,335	-13,86518	.000

The table above, the significant value (2-tailed) is 0.000 which shows that the results of the statistical test, obtained a *P value* of $0.000 < 0.05$, which means that H_a is accepted. ($P \text{ value} < 0.05$), so the results of the initial and final tests experienced significant changes. This proves that H_a is accepted and H_0 is rejected, so it can be concluded that there is a significant influence of Diorama media on the critical thinking skills of fifth grade students of MIS Asmaul Husna.

Based on the research findings, it can be seen that the use of diorama media has an effect on the critical thinking skills of fifth grade students in social studies at MIS Asmaul Husna. This is evidenced by a significance value (Sig.) which is smaller than 0.05 so that the null hypothesis (H_0) is rejected and the alternative hypothesis is accepted. This means that there is a significant difference between the values before and after treatment. This study also found that the use of Diorama media not only has a significant impact on students' critical thinking skills, but can also increase their learning motivation. With this media, students become more enthusiastic and assisted in the learning process, so that their learning outcomes and critical thinking skills also improve.

During the research process, students who participated in the treatment using the Diorama media showed significant progress. They became more challenged and interested in learning, especially in social studies. This research helped students' study more diligently, focus more, and pay more attention to the material. They also

became more active in critical thinking, analysis, asking questions, and were able to re-explain the lessons they had learned. Furthermore, students were able to provide criticism, suggestions, and even additional examples related to the material.

The study began with a pretest administered to two groups of students an experimental group and a control group to determine their initial abilities. The experimental group learned using dioramas, while the control group used a lecture method. In the control group, the teacher explained the material on natural and man-made features and then provided an opportunity for questions before administering a posttest to measure learning outcomes. Meanwhile, in the experimental group, learning began with a question-and-answer session about students' knowledge of natural and man-made features. The teacher then demonstrated and explained the diorama. Several students were asked to open a box containing questions related to the features in the diorama, then read and answer the questions. A posttest was then administered to assess students' development after using the diorama.

The diorama media here provides a more concrete and visual learning experience, so students can more easily understand the material on natural and artificial features. Through direct observation of the diorama, students are encouraged to actively observe, analyze, and communicate the results of their observations. Improving students' critical thinking skills is in line with constructivism theory, which emphasizes the active role of students in constructing their own knowledge through experience, reflection, and interaction with their environment and being able to apply it in everyday life, while the teacher functions as a facilitator who assists the process. The study (Subarjo et al., 2023) shows that the use of Diorama media has a positive impact on improving students' critical thinking skills in Social Studies subjects in Elementary Schools, namely at MIS Asmaul Husna. Practically, these findings can be used as a reference for educators to integrate Diorama media in the learning process, so that students are more actively involved and can develop their critical thinking skills in a more interesting and interactive way. From a theoretical perspective, the results of this study strengthen the concept that Diorama media can improve students' understanding and processing of information, as well as encourage them to think more analytically and reflectively about the subject matter being taught.

D. Conclusions

Based on the results of the study, it can be concluded that diorama media significantly enhances students' critical thinking skills, with statistical test results showing a $p\text{-value} < 0.05$. These findings prove that diorama media is effective in facilitating the development of students' critical thinking in Social Studies lessons. Therefore, it is hoped that teachers can integrate diorama media into the learning process to make lessons more engaging and encourage students to be more active in

critical thinking and analyzing the subject matter more deeply. For policymakers, it is essential to incorporate diorama media into teacher training programs so educators can fully understand and implement this media, making classroom learning more effective and focused on developing students' critical thinking skills. Furthermore, future research is expected to be conducted on a larger scale and in various settings of Modern Islamic Schools to provide a more comprehensive understanding of the impact of diorama media on students' critical thinking abilities in different educational contexts.

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