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IMPLEMENTATION OF GUIDED INQUIRY LEARNING MODEL TO IMPROVE ELEMENTARY SCHOOL STUDENTS' SCIENCE LEARNING OUTCOMES

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Abstract: This study aims to determine whether the application of the Guided Inquiry learning model can improve the science learning outcomes of fifth-grade students at SD Negeri 1 Lubuklinggau. The type of research used is Classroom Action Research (CAR) with 22 fifth-grade students as subjects. Data collection techniques include observation, testing, and documentation, and were analyzed quantitatively. The study was conducted in two cycles, each consisting of planning, implementation, observation, and reflection stages. The results showed a significant increase in learning outcomes. In cycle I, student learning mastery increased from 9% to 40%. In cycle II, mastery reached 86.37%. Based on these results, it can be concluded that the Guided Inquiry learning model is effective in improving the science learning outcomes of fifth-grade elementary school students.
Keywords: Guided Inquiry, learning outcomes, science for fifth grade students.

INTRODUCTION

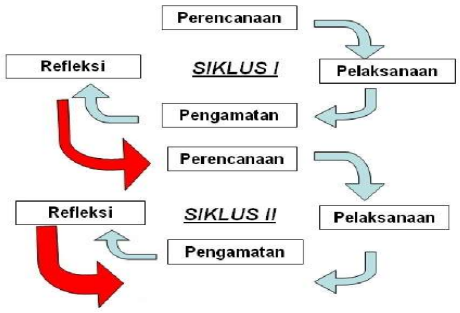
National education, which is based on Pancasila and the 1945 Constitution of the Unitary State of the Republic of Indonesia, functions to develop abilities and to shape the character and a dignified national civilization in order to educate the life of the nation. Its purpose is to develop the potential of learners so that they become individuals who have faith and devotion to God Almighty, possess noble character, are healthy, knowledgeable, competent, creative, independent, and become democratic and responsible citizens. To carry out this function, the government organizes a national education system as stipulated in Law Number 20 of 2003 concerning the National Education System (Muhammad Ali, 2017:92).

Learning is an activity that is deliberately carried out by a person to improve their achievement. Through learning, a child who previously did not understand how to do

something becomes able to understand it (Wati, 2021:68). Natural Science (Ilmu Pengetahuan Alam/IPA), according to Kusumaningrum (2018:59), is a field of science that studies nature, namely everything that exists in nature and the events that occur within it. Natural Science is very important to study because all human activities are always related to nature. Based on the results of interviews with the classroom teacher, it was found that students tend to show low enthusiasm when participating in science lessons. This is reinforced by the results of daily tests on the topic "Light and Its Properties," where out of 22 students, only 5 students (22.72%) achieved scores above the Minimum Mastery Criteria (KKTP) of 70, while the other 17 students (77.27%) were below the KKTP. The class average score only reached 68. These results indicate that the learning process implemented has not been effective in improving students' learning outcomes.

RESEARCH METHOD

This study consisted of two cycles—Cycle I and Cycle II—following the Classroom Action Research model by Kemmis and McTaggart, which includes: (1) planning, (2) acting, (3) observing, and (4) reflecting.



Gambar 3.1. Desain Penelitian Tindakan Kelas Model Kemmis & Mc Taggart (Budiman, dkk: 2024)

RESEARCH'S RESULTS

The study was conducted in Grade V of SD Negeri 1 Lubuklinggau with 22 students. Data were collected using a multiple-choice test consisting of 10 questions. Learning outcomes were evaluated using scoring guidelines to measure critical thinking abilities. To observe changes in learning outcomes in each cycle, the results are summarized in the following table.

Table 4.1 Percentage Recapitulation of Civic Education Learning Mastery Cycle I and Cycle II

No	Cycle	Treatment	Average Score	Not Mastered		Mastered		Total	
				F	Percentage (%)	F	Percentage (%)	F	Percentage (%)
1.	Cycle 1	Pre-test	37.27	20	91%	2	9%	22	100
		Post-test	63,63	13	60%	9	40%	22	100
2.	Cycle 2	Post-test	77.27	3	13,63%	19	86,37	22	100

Based on the data presented in Table 4.1, it is evident that the implementation of the Guided Inquiry learning model had a substantial and positive impact on the science (IPA) learning outcomes of fifth-grade students, particularly on the topic of Light and Its Properties. Prior to the treatment, students' understanding of the material was relatively low, as reflected in the pre-test results of Cycle I. The average pre-test score was only 37.27, indicating that most students had not yet mastered the fundamental concepts being assessed. In terms of learning mastery, only 2 out of 22 students, or 9%, were able to reach the Minimum Mastery Criterion (KKM), which was determined to be 75. These results suggest that conventional teaching methods previously used in the classroom were insufficient to facilitate meaningful understanding and active student engagement.

After the Guided Inquiry learning model was applied in Cycle I, there was a noticeable improvement in student performance. The average post-test score increased to 63.63, showing that students began to develop a better understanding of the learning material through inquiry-based activities that encouraged observation, questioning, and problem-solving. However, despite this improvement, mastery learning had not yet been optimally

achieved, as only 7 students (31.82%) reached the KKM. This indicates that while the Guided Inquiry approach contributed positively to learning outcomes, further refinement and support were still needed to ensure that most students could meet the expected learning standards. To address these shortcomings, improvements were made in Cycle II by integrating instructional media into the Guided Inquiry learning process. The use of media helped make abstract concepts related to light more concrete and easier to understand, thereby enhancing students' motivation and participation in learning activities.

The results of Cycle II demonstrate a significant increase in learning outcomes, with the average post-test score rising to 77.27. This score not only exceeded the KKM but also reflected a more comprehensive understanding of the material among students. Moreover, 19 out of 22 students, or 86.37%, achieved mastery learning in Cycle II, indicating that the majority of students successfully met the predetermined learning criteria. This substantial improvement highlights the effectiveness of combining the Guided Inquiry learning model with appropriate instructional media in facilitating deeper conceptual understanding and active learning. Overall, the progressive increase in average scores and mastery percentages from the pre-test in Cycle I to the post-test in Cycle II clearly demonstrates that the treatment implemented in this study was effective. The findings suggest that student-centered learning approaches such as Guided Inquiry, when supported by relevant learning media, can significantly enhance students' science learning outcomes and help them achieve the Minimum Mastery Criterion more consistently.

DISCUSSION

The findings of this study indicate that the implementation of the Guided Inquiry learning model, particularly when supported by instructional media, significantly improved fifth-grade students' science (IPA) learning outcomes on the topic of Light and Its Properties. This result aligns with contemporary educational research emphasizing student-centered and inquiry-based learning approaches as effective strategies for enhancing conceptual understanding in science education. Prior to the treatment, the low average pre-test score (37.27) and minimal mastery level (9%) reflected students' limited

prior knowledge and passive learning experiences. According to **Pedaste et al. (2021)**, traditional teacher-centered instruction often fails to engage students in higher-order thinking processes, resulting in superficial understanding of scientific concepts. This condition was evident in the initial learning outcomes of the students before the Guided Inquiry model was applied.

After the implementation of Guided Inquiry in Cycle I, there was a noticeable improvement in students' post-test scores, with the average increasing to 63.63 and mastery rising to 31.82%. Although the mastery level had not yet met the expected standard, this improvement suggests that inquiry-based learning encourages students to actively construct knowledge through questioning, investigating, and drawing conclusions. **Khalaf and Zin (2022)** state that Guided Inquiry learning helps students develop scientific reasoning skills by involving them directly in the learning process while still providing structured guidance from the teacher. However, the limited mastery achieved in Cycle I also supports the view that inquiry learning requires appropriate scaffolding and learning resources to be fully effective, especially for elementary school students.

In Cycle II, the integration of instructional media into the Guided Inquiry model resulted in a substantial improvement in both average scores and mastery levels. The average post-test score increased to 77.27, and 86.37% of students achieved the Minimum Mastery Criterion (KKM = 75). This finding is consistent with research by **Suryanti et al. (2021)**, who found that the use of visual and interactive media in science learning can significantly enhance students' understanding of abstract concepts such as light, energy, and physical phenomena. Instructional media serve as concrete representations that bridge the gap between theory and real-world applications, making learning more meaningful and accessible for students.

Furthermore, **Aditomo and Hasugian (2022)** emphasize that combining inquiry-based learning with appropriate media supports deeper learning by increasing student motivation, engagement, and conceptual clarity. In this study, students became more active in observing, experimenting, and discussing scientific phenomena, which

contributed to higher achievement and learning mastery in Cycle II. The sharp increase in mastery percentage demonstrates that most students were able to meet the learning objectives when provided with both an effective learning model and supportive learning tools.

Overall, the results of this study reinforce recent educational research suggesting that Guided Inquiry learning, when effectively implemented and supported by instructional media, can significantly improve science learning outcomes at the elementary level. The progressive improvement from Cycle I to Cycle II indicates that continuous reflection and refinement of teaching strategies are essential for achieving optimal learning mastery. These findings support the recommendation that teachers adopt inquiry-based approaches integrated with relevant media to help students achieve the Minimum Mastery Criterion and develop a deeper understanding of scientific concepts in line with 21st-century learning demands.

CONCLUSION

The results of this study indicate an improvement in science (IPA) learning outcomes among fifth-grade students at SD Negeri 1 Lubuklinggau. This improvement was observed after the implementation of a learning model in the science subject during the even semester of the 2025/2026 academic year. Data supporting these findings are clearly shown through a comparison of students' average scores across two learning cycles. In Cycle I, the average (pre-test) score of the students was recorded at 37.27, with 2 out of 22 students (9%) achieving mastery. After the initial intervention, the average (post-test) score increased to 63.63, with 7 out of 22 students (40%) successfully meeting the mastery criteria. Although there was an improvement, these results also served as a reflective note for the researcher regarding the need to further motivate and encourage active student participation in every phase of learning.

Meanwhile, Cycle II showed more significant improvement. The average (post-test) score of students in this cycle reached 77.27, with 19 out of 22 students (86.37%) successfully mastering the material. This drastic increase indicates that the implementation of the Guided Inquiry learning model in the science subject had a very

positive impact. The consistent improvement in science learning outcomes confirms the effectiveness of the model used. Therefore, it can be concluded that the Guided Inquiry learning model can be used as an effective alternative learning model and instructional medium to improve student learning outcomes.

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