

IMPROVING SCIENCE LEARNING OUTCOMES BY APPLYING THE GUIDED DISCOVERY LEARNING MODEL

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Abstract

The selection of the right model for learning will affect the learning outcomes of students' cognitive abilities. Therefore, a study was conducted that aims to improve students' learning outcomes using the guided discovery learning model. This classroom action research aims to describe science learning with the guided discovery learning model to improve learning outcomes. This study was conducted in three cycles. Each cycle consists of planning, implementation, observation, and reflection. Cognitive learning outcome data were obtained from essay tests. The results of the study showed an increase in the learning outcomes of class VII D students of SMPN 1 Rantau Badauh after the application of the guided discovery learning model on the topic of heat.

Keywords: Learning outcomes, guided discovery learning model.

INTRODUCTION

Students are no longer seen as objects of learning in today's learning and teaching process (Fahmi and Irhasyuarna, 2019; Irhasyuarna et al., 2023). A teacher is someone who has the task of being a facilitator so that students can learn and/or develop their basic potential and abilities optimally (Fahmi et al., 2019; Kusasi et al., 2021). The 2013 curriculum demands a paradigm shift in education and learning. Learning that does not actively involve students affects students' learning outcomes which will hinder students' cognitive abilities, so it is necessary to choose and implement a learning model that can achieve the goals of learning (Af'idayani et al., 2018; Rahayu et al., 2018; Fahmi et al., 2021).

Based on the results of observations conducted by researchers, learning at SMPN 1 Rantau Badauh has used discovery learning, but from the UTS scores carried out in April 2017, it can be seen that the learning outcomes of class VIII students in science subjects are included in the low category. This is because students are still not used to finding information without being guided by teachers, so that many students are still confused about what is being learned because students are required to find out for themselves what they are learning, while students still need guidance in the learning process because students are at the junior high school level (Irhasyuarna et al., 2023; Hasanah et al., 2024). Therefore, a student-centered learning model is needed accompanied by teacher guidance as a facilitator so that students understand the lesson better so that it affects the learning outcomes of cognitive abilities, one of which is the guided discovery learning model.

This model is a student-centered learning model accompanied by teacher guidance as a facilitator where students work in groups (Fahmi et al., 2019). The guided discovery learning model allows each student in the group to actively participate in the learning process and can interact with other students and between students and teachers. Learning using the guided discovery learning model allows students to learn through their own active involvement with concepts and principles, as well as learn to solve problems independently through discovery guided by the teacher as a facilitator. From the statements above, a problem formulation can be made, namely whether there is a guided discovery learning model that can improve learning outcomes at SMPN 1 Rantau Badauh. Based on the description above, the researcher conducted a study aimed at improving student learning outcomes using the guided discovery learning model.

METHOD

The subjects of this study were students of class VII D of SMPN 1 Rantau Badauh consisting of 17 male students and 17 female students. The factors studied in this study were learning outcomes. The study was conducted in three cycles with different materials. Each cycle consists of planning, implementation, observation, and reflection. The data collection techniques used in this study were using test and non-test techniques. The test technique was used by teachers to measure the extent of students' conceptual understanding of the material given in the form of a written test carried out at the end of the cycle, while the non-test technique was in the form of documentation of student notes before the cycle and observation sheets containing student notes during the learning process. There were three types of data collection techniques in this study, namely documentation techniques, observation techniques and test techniques.

RESULTS AND DISCUSSION

The implementation of learning with the guided discovery learning model is shown by the RPP, LKPD, and evaluation questions that have been adjusted to the learning model. In cycle I, initially

students found it difficult to carry out experiments to find the concept of heat according to the LKPD. The teacher explained that students should carry out activities in sequence according to the steps in the LKPD, so that they could find the concept of heat from the experimental activities carried out. The weakness in cycle I, students felt confused and were not used to the learning that.

In addition, students were also less serious in carrying out practicums or working on evaluation questions, some were still not disciplined in learning, thus disrupting the learning process. Students in cycle II began to adapt to the teacher and the guided discovery learning model so that cycle II could run more smoothly than cycle I. However, there were still students who were passive in learning. For this reason, one of the efforts made by the teacher to activate students was to appoint students who were less active by giving questions and opportunities to express answers. From this, it can be said that the guided discovery learning model in cycle II that was implemented was according to plan compared to cycle I.

The weakness in cycle II, the available time allocation was still not enough because in cycle II the number of practicums carried out was 2 practicums, while students were less focused on the practicum so that time was wasted. The cognitive learning outcomes of students increased both from cycle I to II and III. The results of the calculation with the gain test obtained an increase in Ngain of 0.48 for the cognitive learning scores of students from cycle I to II. For the cognitive learning outcomes of students from cycle II to III, an increase in n-gain of 0.16 was obtained. from cycle I to cycle III. The implementation of learning with the guided discovery learning model in cycle III was according to plan.

Students have adapted to the guided discovery learning model. Students are more active in conducting experimental activities even though they are still under teacher guidance. Teachers optimize the guidance process for students when conducting experiments so that they can run smoothly so that the available time can be utilized optimally. From the results of data analysis, the following data were obtained.

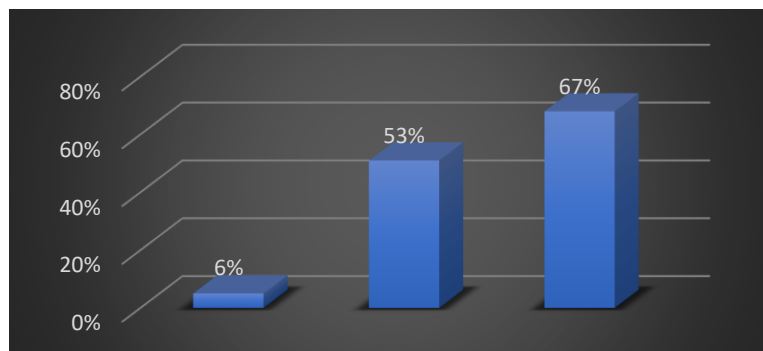


Figure 1. Learning Outcomes in Each Cycle

The implementation of the guided discovery learning model is able to improve students' cognitive learning outcomes as indicated by an increase in the average value of each cycle. The success of students in the process of discovering scientific concepts. The involvement of students in learning causes the mastery of the concept of heat material from each cycle to increase. This is in accordance with the opinion of Dimiyati (2009) who stated that learning requires active learning involvement.

The implementation of the guided discovery learning model causes students not to passively receive and memorize information provided by the teacher, but to try to find concepts through direct experience, not just hearing and accepting concepts from what is conveyed by the

teacher. This is also in accordance with the opinion of Afidayani et al. (2018); Rahayu et al. (2018); Farida and Fahmi (2024) that the more students are involved in each learning activity, the better their learning outcomes.

The guided discovery learning model can be implemented well if the teacher as a facilitator can set his own behavioral standards and be responsible for his own behavior and performance so that students can develop their potential in discovery activities. So in this model, not only students are active in the discovery process but teachers as facilitators must also be clear in directing them. The completion of classical learning of students has met the indicators of success, therefore, learning can be said to be complete. The completion of student learning outcomes in this study proves that learning through the guided discovery learning model can be used as one method to improve student understanding of subject matter or student cognitive learning outcomes.

CONCLUSION

The implementation of learning with the guided discovery learning model is carried out with practicums. Practicums are carried out based on LKPD instructions distributed by the teacher. Learning ends with an evaluation test to determine the cognitive abilities and creative thinking abilities of students after learning. The implementation of learning with a process skills approach to heat material can improve student learning outcomes.

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MENINGKATKAN HASIL BELAJAR IPA DENGAN PENERAPAN MODEL GUIDED DISCOVERY LEARNING

Abstrak

Pemilihan model yang tepat untuk pembelajaran akan berpengaruh terhadap hasil belajar kemampuan kognitif peserta didik. Maka dari itu, dilakukan penelitian yang bertujuan untuk meningkatkan hasil belajar peserta didik dengan menggunakan model guided discovery learning. Penelitian tindakan kelas ini bertujuan untuk mendeskripsikan pembelajaran sains dengan model guided discovery learning untuk meningkatkan hasil belajar. Penelitian ini dilaksanakan dalam tiga siklus. Setiap siklus terdiri dari perencanaan, pelaksanaan, observasi, dan refleksi. Data hasil belajar kognitif diperoleh dari tes essay. Hasil penelitian menunjukkan ada peningkatan hasil belajar siswa kelas VII D SMPN 1 Rantau Badauh setelah penerapan model pembelajaran guided discovery learning pada pokok bahasan kalor.

Kata kunci: Hasil belajar, model guided discovery learning