
IMPROVING SCIENCE LEARNING OUTCOMES OF CLASS V STUDENTS AT SDN PUCANGAN III THROUGH EXPERIMENTAL METHODS

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ABSTRACT

Science learning should be carried out using a method that is in accordance with its nature as a product, process, and scientific attitude. One method that can be applied is the experimental method. The purpose of this study was to determine the improvement of science learning outcomes in fifth grade students of SDN Pucangan III through the experimental method. In this study, the data collection methods used were interviews, observation, tests, and documentation with quantitative qualitative data analysis techniques. The result of this research is that there is an increase in the science learning outcomes of the fifth grade students of SDN Pucangan III in each cycle. At the pre-cycle stage, the percentage of the number of students who completed was only 60% with an average value of 67. In the first cycle there was no increase in the number of students who completed, which was still in the range of 60%, but there was a slight increase in the average learning outcomes to 68. In cycle II, the percentage of the number of students completed and student learning outcomes both increased, respectively to 80% and 78. Based on this, it can be concluded that the experimental method can improve the learning outcomes of fifth grade students at SDN Pucangan III in science learning.

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A. Introduction

Education is a process in which a person learns from those who cannot become able, so from this meaning it can be defined that education is a process to improve knowledge, skills and quality to become better. Based on this definition, it shows that education is a very important aspect for the progress of a nation in terms of guaranteeing the quality of its human resources. Therefore, various efforts to improve the quality of education are continuously carried out by all countries, including Indonesia.

Improving the quality of education is inseparable from efforts to improve the quality of learning. Education and learning are two things that cannot be separated. One way to improve the quality of learning is to apply fun and meaningful learning methods (Afandi et al., 2013). The use and selection of learning methods is very important so that the achievement of learning objectives can be maximized (Nasution, 2017). There are several things that must be considered when choosing a learning method including student conditions, characteristics of teaching materials, and the existence of facilities and infrastructure (Nurhayati, 2016). This also applies to the selection of methods in the Natural Sciences (IPA) learning. The selection of methods for learning science must be adjusted to the characteristics and nature of science itself.

Natural Sciences (IPA) is a science that studies natural phenomena in the form of facts, concepts, and laws that have been proven true based on a research that has been done (Mairina et al., 2021). Learning Natural Sciences (IPA) is learning science in elementary school is one of the lessons that are classified as important at the basic education level. According to (Jumiati, 2016), the nature of science learning is actually a product, process, and scientific attitude. Science as a product means that the science concept is the result of the findings of experts, science as a process means that the identical concept or product in science must be sought through science process skills, while science as a scientific attitude means the attitude that is applied in the process of obtaining, developing, and applying science concepts. Of the three essences, it implies that in science learning a method is needed that can make students active through activities to seek and construct their own knowledge and develop their scientific attitude. This is supported by (Kelana & Wardhani, 2021), that in science learning there is not only knowledge but also a discovery process that involves active students in it.

One of the learning methods that match the nature of science learning above is the experimental/practical method. There are several advantages of this experimental method, including being able to make students more confident in the truth or conclusions based on experiments carried out by themselves, being able to develop an attitude to conduct exploratory studies on science, students learning by experiencing or observing an event themselves, students are avoided far away from verbalism, enriching experience with things that are objective and realistic, developing scientific thinking attitudes, and learning outcomes will be durable and internalized (Ma'viyah, 2021).

Based on the results of interviews and information obtained from the homeroom teacher of class V SDN Pucangan III, Palang District, Tuban Regency, it was stated that student learning outcomes in science subjects were still not optimal. According to him, the completeness of science learning outcomes for the 5th grade students of SDN Pucangan III is still 60%. Based on the observations made by the researcher, that while explaining the science content, the class atmosphere was passive and the transfer of information only occurred in one direction, namely from the teacher to the students. This is supported by the results of interviews conducted with classroom teachers that in the content of science lessons teachers rarely do practical work directly. Based on the theory that has been described above, these two things are closely related. Science learning that takes place passively and is not in accordance with the nature of science as a product, process, and scientific attitude, results in low student learning outcomes.

One solution that can be done by teachers in science lessons in order to improve student learning outcomes, namely, teachers should use other methods that are more in line with the nature of science learning, one of which is the experimental method. Therefore, the researcher then conducted a classroom action research by applying this experimental or practicum method to science learning. The purpose of this study is to improve student learning outcomes in IP learning through the applied experimental method.

B. Method

This type of research is a type of classroom action research (CAR). Classroom Action Research is research conducted by teachers/researchers to find out the consequences of actions applied to research subjects in the class (Mu'alimin & Cahyadi, 2014). CAR is a scientific activity carried out by

teachers/researchers in the classroom by using an action to improve learning processes and outcomes (Afandi, 2014). Classroom action research will be conducted using the Kemmis & Mc Taggart model which consists of several stages including planning, action, observation, and reflection. In this study using data collection techniques in the form of interviews, observations, tests, and also documentation. The data that has been collected is then analyzed using quantitative qualitative data analysis techniques.

C. Result and Discussion

Based on the results of this study indicate that the experimental method can improve student learning outcomes in science subjects. This is because students can learn directly by doing experiments. The experimental method is a method by providing opportunities for students, both individually and in groups to conduct an experiment by experiencing themselves or directly something that is learned and drawing conclusions from the process that has been carried out (Puryadi et al., 2017). In addition, through the experimental method students will also be more active and learning will also be more meaningful for students. Learning Natural Sciences (IPA) is learning science in elementary school is one of the lessons that are classified as important at the basic education level. In science learning, there is not only knowledge but also a discovery process that involves active students in it (Kelana & Wardhani, 2021).

At the pre-cycle stage, the researcher obtained data on learning outcomes through observation and interview data collection techniques. Based on the data obtained, teachers rarely carry out practical activities due to limited facilities and infrastructure. In addition, the activeness and understanding of students in learning science is still low. This causes low student learning outcomes. Based on the data obtained, the percentage of the number of students who completed was only 60% with an average score of 67. Referring to the complete learning theory of (Susanto, 2013), that a class was declared complete learning if the percentage of students who completed 85%. Therefore, when viewed from the percentage of the number of students who completed class V SDN Pucangan III, the class was declared classically incomplete. When referring to the average value obtained, the class also cannot be said to be complete because the average learning outcome has not reached the specified KKM, which is 70. Therefore, special actions are needed to improve the low learning outcomes.

The action taken by the researcher to improve the science learning outcomes is to apply the experimental method. The experimental method is a method by providing opportunities for students, both individually and in groups to conduct an experiment by experiencing themselves or directly something that is learned and drawing conclusions from the process that has been carried out (Puryadi et al., 2017). This experimental method was carried out because this method was judged to be in accordance with the nature of natural science itself as a product, process, and scientific attitude (Jumiati, 2016). In the ideal science learning process, it should involve the active role of students in the science process by conducting experiments and forming scientific attitudes (Sulthon, 2016). This is supported by (Kelana & Wardhani, 2021) who say that science learning should emphasize the process of discovery and experimentation by involving students' active roles in constructing their knowledge and fostering a scientific attitude from within. Therefore, the experimental method is considered effective for presenting science learning that is more fun and meaningful for students.

In the first stage, the researcher began to carry out the experimental method. At this stage, from 10 students here as many as 6 students = 60% have completed reaching the KKM. While 4 students = 40% still have not reached the KKM. Here has a class average of 68. In cycle 1, student activity is still lacking and the increase in student learning outcomes is still not optimal. The percentage of complete students still has not reached 85% so that when referring to the theory of complete learning from (Susanto, 2013), the class still cannot be said to be complete. The increase in the average value of learning outcomes to 68, also still shows a value below the KKM. Because the target for learning success has not been achieved, namely the class is classically complete and the average learning outcome is above the KKM, the researchers repeated the action. This is in accordance with what was stated by (Mulyatiningsih, 2015), that repetition of actions in classroom action research is carried out if the success target has not been achieved, so that in the next cycle the researcher can do various good things in his actions in order to achieve the success target.

Furthermore, in the second cycle, it showed that learning was going well and the learning outcomes obtained by students had increased even though not all of them reached the KKM. The percentage of complete students who have achieved the success target that has been set by researchers who refer to the complete learning theory from (Susanto, 2013) that a class is said to be classically complete

if the percentage of students completed is 75%. The percentage of completed students has exceeded this figure, which is 80%. In this cycle, the average learning outcomes have also exceeded the KKM score, which is getting a score of 78. In addition, in cycle II, based on observations made by researchers, students seem to be much more active in learning. Because all the success targets have been achieved, the provision of action is stopped, and the research is declared successful. Based on the research results obtained, it can be concluded that the experimental method can improve student learning outcomes in natural science content.

D. Conclusion

There was an increase in the science learning outcomes of the fifth grade students of SDN Pucangan III in each cycle while applying the experimental learning method. Based on the data obtained, the percentage of the number of students who completed was only 60% with an average score of 67. In the first cycle there was no increase in the number of students who completed, which was still in the range of 60%, but there was a slight increase in the average learning outcomes to 68%. In cycle II, the percentage of the number of students completed and student learning outcomes both increased, respectively to 80% and 78. Based on this, it can be concluded that the experimental method can improve the learning outcomes of fifth grade students at SDN Pucangan III in science learning.

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