

Improving Student Learning Outcomes in Heat and Sound Energy Science Through Demonstration Lesson Methods

Ramadhan Suciana*, Sri Awan Asri, Syamzah Ayuningrum.
Primary School Teacher Education, STKIP Kusuma Negara Jakarta, Indonesia
*ramadhansuciana01@gmail.com

Abstract

The aim of this research is to improve student learning outcomes in the science subjects heat and sound energy through demonstration learning methods for the 2022/2023 academic year. The research method is classroom action research following kemmis and taggart. This research includes 2 cycles, each cycle includes 4 stages, namely planning, observation and reflection. The research period was 2 months from April to May 2023 with 36 students as research subjects, while data was collected through tests, observation and documentation. The results of the research showed that there was a significant increase in student learning outcomes in the heat and sound energy science subjects in class IV students. . This is proven by the average test results in each cycle increasing, namely in the pre-cycle = 61.52; cycle = 70.72; silus 2 = 85.55 from the results of this data it can be concluded that student learning outcomes in science subjects regarding heat and sound energy through demonstrations can increase understanding. This research concludes that heat and sound energy science lessons through demonstration methods can improve heat and sound energy science learning outcomes.

Keywordss : Improving Learning Outcomes, Heat and Sound Energy, Demonstration Method

1 INTRODUCTION

Education is an effort to educate an individual where this effort will be successful if there is a change in behavior in the individual where the change makes the individual better than before. In the era of society 5.0, it requires everyone to be more creative, innovative, productive, adaptive and also competitive, so the role of education is very important to improve the quality of human resources. The learning process that is currently carried out in our educational institutions still relies on many methods. took a long time to deliver the material. Nowadays, many people measure the success of education only in terms of results. Good learning is comprehensive in its implementation and includes various aspects, including cognitive, affective and psychomotor aspects, so that the level of success can be measured, apart from being seen in terms of quantity, but also in terms of the quality of what has been done by schools. So it can be concluded that active learning is characterized by a series of planned activities that involve students

Natural Sciences (IPA) is a science that studies nature and all its contents. Natural Sciences is a translation of the word "Natural Science" abbreviated as "Science". Natural means natural which is related to nature, while science means science. So, it can be interpreted that science is the science of nature or the science that studies events that occur in nature. Apart from that, science is a collection of knowledge obtained using methods based on observation.

Learning Natural Sciences (IPA) will enable students to gain a deeper understanding through direct experience to be able to develop competence, so that students are able to understand the natural surroundings through the process of finding out and applying it. Hamalik, learning outcomes are changes in behavior in students that can be observed and measured in the form of changes in knowledge, attitudes and skills. Learning is a process characterized by changes in a person, changes as a result of the learning process can be

shown in various forms such as changes in knowledge, understanding, attitudes and behavior, skills, abilities, habits, as well as changes in existing aspects of the individual. Study.

SDN Cibugis, Klapanunggal subdistrict, is an elementary school level educational institution whose educational curriculum contains science material that must be studied and taught by students. Based on the results of observations and observations at SDN Cibugis school, class IV students were less active in participating in the teaching and learning process being carried out. Students tend not to be very interested in science lessons about heat and sound energy because so far science lessons are considered to be lessons that are only based on theory and memorization, teachers are less than optimal in providing material during the lesson. From several theories above, it can be synthesized that science learning outcomes are the abilities that students have after receiving science lessons on heat and sound energy with changes in the cognitive, affective and psychomotor domains. However, this research was limited to learning outcomes in the cognitive domain only because the problem in class IV at SDN Cibugis was that the science learning outcomes in the cognitive domain were less than optimal so that only the cognitive domain science learning outcomes were examined.

By looking at the problems that occur, namely the problem of less than optimal grades in science subjects at SDN Cibugis, the researcher is very interested in implementing and conducting research using the demonstration method, especially discussing problems on the subject of heat energy and sound energy. Based on the description above, this researcher is interested in researching using the demonstration method as an alternative in science learning which brings students to learn in a more comfortable and enjoyable atmosphere. In this research, the demonstration method was used to improve the science learning of heat energy and sound energy in class IV. The use of the demonstration method really supports the teaching and learning interaction process in class. By using this demonstration method, students actively participate in learning activities. By demonstrating that students' attention is more focused on the lesson being taught, errors that occur when the lesson is being taught can be overcome through observation and concrete examples. So what students receive is deeper and stays longer in their souls. It can be understood that the demonstration method is where a teacher directly demonstrates something which is then followed by students so that the knowledge or skills demonstrated are more meaningful in each student's memory.

By looking at the problems that occur, namely the problem of less than optimal grades in science subjects at SDN Cibugis, the researcher is very interested in implementing and conducting research using the demonstration method, especially discussing problems on the subject of heat energy and sound energy. Based on the description above, this researcher is the author. interested in researching using the demonstration method as an alternative in science learning which brings students to learn in a more comfortable and enjoyable atmosphere.

2 RESEARCH METHODS

Researchers use classroom action research (classroom acticon research) using the Kemmis & Teggart research model. Researchers use this PTK design model because it has a practical design to improve classroom learning.

3 RESULT AND DISCUSSION

The results and discussion must be in agreement. The data presented is data on the ability to learn science material on heat and sound energy through the demonstration method. In this chapter, we will present the results of science learning on heat energy material through student demonstration methods in pre-cycle, cycle 1, and cycle 2.

3.1 Sub Result

The findings of this research are in the form of a presentation of the results that researchers obtained through tests, observation and documentation. The researcher conducted a test by giving questions to students to determine the ability in science learning outcomes regarding heat energy and sound energy in class IV students at SDN Cibugis. The data analyzed was in accordance with the research objectives and problem formulation in this research. Data on ability scores for science learning outcomes regarding energy. heat and sound energy of students in the pre-cycle. Based on the evaluation test carried out by the teacher in the pre-cycle on 36 students, the following data were obtained

Number of Values	2215
Average Value	61,52
The highest score	100
Lowest Value	30
% Completeness	41,66%
% Incomplete	58,33%

Table 3.1

Data on science learning outcomes for heat energy and sound energy for 36 students in the pre-cycle.

From the data above, the total number of students who completed the pre-cycle was 41.66%, but still did not meet the expected completeness. 85% of the total number of students who took the test Source of test data for class IV students at SDN Cibugis Scores on a scale of 0 - 100 from multiple choice questions and essays

Action description

In addition to conducting tests with fourth grade students, the researcher also carried out planning based on the research problem. An action plan has been formulated that will be implemented to solve the problem in research. The subject matter discussed in each cycle is the results of science learning, heat energy and sound energy, implementation actions. carried out in the first hour, the material that will be discussed is heat energy and sound energy through a demonstration method using hand friction and a tin telephone. The following describes the real conditions experienced during the teaching and learning process at the beginning of the activity. The researcher opened the lesson by saying greetings. The researcher invited the students to pray and asked one of the students to lead the prayer. The researcher checked the students' attendance. by calling the students' names one by one, the researcher coordinated the students to learn material about heat and sound energy by preparing equipment in the form of stationery and tools and materials needed for learning in demonstration activities, the researcher carried out apperception as the beginning of communication before carrying out core learning to determine readiness to learn students, the researcher delivered material about heat and sound energy. The researcher gave an example by demonstrating heat energy by rubbing his hands while sound energy via a tin telephone was carried out in front of the students. test questions to do. Reflections are the final results or final conclusions that will be reached by students in processing the material that has been presented by the researcher.

Pembahasan Temuan penelitian

Discussion of research findings

The success of a science learning process regarding heat and sound energy through the demonstration method using the palm of the hand and a tin telephone for 2 cycles can be seen from the pre-cycle, cycle 1 and cycle 2 data of students before and after the learning process was carried out. First, pre-cycle research was carried out. the results of each action. Students' abilities in the teaching and learning process through the demonstration method using the palm of the hand and a tin telephone with the aspect that students can

understand heat and sound energy along with examples and sources and solve the questions given.

Data	Pre cycle	Cycle 1	Cycle 2
Average value	61,52	70,72	85,55
Complete	15	21	32
Not finished	21	15	4
Completion percentage	41,66%	58,33%	88,88

Table 3.2
Results of Value Recapitulation in Cycle I and Cycle II.

4 CONCLUSION

Based on the results of the actions carried out during the second cycle and the data analysis and discussions carried out, several conclusions were drawn as follows;

The use of demonstration methods using the palm of the hand and a tin telephone using heat energy and sound energy can improve the learning outcomes of class IV students at SDN Cibugis in the 2022/2023 academic year. This can be seen from the pre-cycle data, cycle 1, cycle 2, the students' scores after the evaluation continues to increase and the percentage of students' completion continues to increase and has reached the research success criteria of 85%, namely 88.88%.

5 REFERENCES

- Ahmad Mujin Nasih dan Tehnik. Pembelajaran Agama Islam (Bandung: PT Refika Aditama, 2009) hal. 49
- Anjar, "Pengertian , Langkah-Langkah dan Kelebihan serta Kekurangan Demonstrasi," wawasan, September 22, 2014
- Asep Jihat dan Abdul Haris, Evaluasi Pembelajaran, (Yogyakarta: Multi Pressindo, 2009) hal.2
- Asep Jihat dan Abdul Haris, Evaluasi Pembelajaran, (Yogyakarta: Multi Pressindo, 2009) hal.2
- Bayu Wijayama, Pengembangan Perangkat Pembelajaran IPA Bervisi SETS Dengan Pendekatan SAVI (Semarang: Qahar Publisher, 2019), hal. 9
- Bayu Wijayama, Pengembangan Perangkat Pembelajaran IPA Bervisi SETS Dengan Pendekatan SAVI (Semarang: Qahar Publisher, 2019), hal. 9
- Miftahul Huda, Model-Model Pengajaran dan Pembelajaran, (Yogyakarta: Pustaka Belajar, 2013) hal. 233
- Oemar Hamalik, 2013, Kurikulum dan Pembelajaran, Jakarta: Bumi Aksara, hal.30
- Oemar Hamalik, 2013, Kurikulum dan Pembelajaran, Jakarta: Bumi Aksara, hal.30
- Pendidikan dan Pengajaran, Pengeritan metode demonstrasi manfaat tujuan kelebihan kekurangan, (<https://wawasanpengajaran.blogspot.com/2014/07/pengeritan-metode-demonstrasi-manfaat.html>, Diakses pada 25 Desember 2022)
- Sumantri, Mulyani dan Johar Permana, Strategi Belajar Mengajar, Bandung: C.V Maulana, 2001 : 133
- Tayar Yusuf dkk, Metodologi Pengajaran Agama dan Bahasa Arab, (Jakarta: Raja Grafindo, 2000), hal. 45
- Tri Pudji Astuti, Model Problem Based Learning Dengan Mind Mapping Dalam Pembelajaran IPA abad 21, Jurnal Proceeding of Biology Education 3, No. 1, 2019, hal. 65

Tri Pudji Astuti, Model Problem Based Learning Dengan Mind Mapping Dalam Pembelajaran
IPA abad 21, Jurnal Proceeding of Biology Education 3, No. 1, 2019, hal. 65
Zakiah Drajat dkk, Metodik Khusus Pengajaran Islam, hal 307