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Application of Student Work Sheet Based on Scientific in Training Science Process Skills in Science Learning Class V At State Elementary School 4 Gulang Mejobo Kudus

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Abstract: This study aims to determine the application of scientific-based student worksheets (LKPD) at SDN 4 Gulang Mejobo Kudus. The success of the implementation, as well as anything f supporting and inhibiting actors in the application of the worksheet. This study uses a type of field research with a qualitative approach. Data collection techniques applied are through observation and interviews, as well as through documentation. The results of the research show: First, the Application of Scientific-Based Student Worksheets (LKPD) in Training Science Process Skills in Class V Science Learning at SDN 4 Gulang Mejobo Kudus, there are 3 stages, namely planning. Implementation, and evaluation. Second, the successful application of scientific-based student worksheets (LKPD) in training science process skills in fifth-grade science learning at SDN 4 Gulang Mejobo Kudus creates an active class, students are eager to observe material, group objects related to the material, taking measurements. Students become confident in communicating the results of their work and can make conclusions from the results of their learning. Third, Factor in the application of scientific-based student worksheets in science learning class V at SDN 4 Gulang Mejobo Kudus namely supporting factors which include good school management, guaranteed teacher professionalism, adequate learning resources, varied learning methods, and media, there is an interest in learning and learning competition between students. And the inhibiting factors include inadequate infrastructure, parental support for poor student learning outcomes, and students' learning mental readiness that is not the same.

Keywords: *Student Worksheets (LKPD), Science Process Skills (KPS), Learning Natural Sciences (IPA).*

INTRODUCTION

Education is a conscious effort to develop human qualities as an activity conscious of goals (Bahari, 2005). The goal here is meant by develop human qualities in all aspects

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(cognitive, psychomotor, and skills). Education has a role as a forum for humans to develop aspects that must be issued, one of which is skills.

IPA (Natural Science) is a science that is closely related to human life. All aspects are related, starting from matters relating to limbs, the environment, food, medicine, agriculture, fisheries, even industry, technology, and so on. Science cannot be separated from a series of activities such as observing, testing, and communicating. Bearing this in mind, science lessons, especially in elementary schools, should be carried out scientifically to foster the ability to think, work and act scientifically, and be able to communicate them to others. Science learning should also emphasize providing direct experience with the use and development of process skills and scientific attitudes. Science education in elementary school is very important, a teacher needs to plan and implement science learning effectively and efficiently so that the expected learning objectives can be achieved by applying various strategies, methods, and teaching approaches that are appropriate to the characteristics and development of students. Creating effective and efficient learning can have a positive impact on student learning progress, therefore in the learning process, it is expected that teachers can create conditions that enable students to learn actively, creatively, and meaningfully by providing direct experience to students in understanding principles and science concepts, so that they can find the principles and concepts of science, through the process of constructing their thoughts (Nuryana et al., 2021).

In the Minister of Education and Culture of the Republic of Indonesia No.37 of 2018 Concerning Core Competencies and Basic Competencies in the 2013 Curriculum for Elementary and Secondary Education, it is explained that the Formula of Core Knowledge Competency (KI-3) for Science SD MI grades IV to VI, namely understanding factual knowledge by observing and ask. Based on curiosity about himself, God's creatures and their activities, and the objects he finds at home, at school, and on the playground. Whereas in (KI-4) IPA SD MI class IV to VI, namely presenting factual knowledge in a clear, systematic, and logical language. In aesthetic works, in movements that reflect healthy children, and in actions that reflect the behavior of children of faith and noble character (Ministry of Education and Culture, nd-b). From that science learning in elementary schools must be able to develop students' conceptual and procedural understanding. Conceptual understanding refers to understanding aspects of science, while procedural understanding refers to understanding related to scientific procedures. So, students must have the procedural understanding to develop conceptual understanding. This procedural understanding concerns the procedures that must be carried out by students and is often referred to as science process skills (KPS). KPS that must

be developed for students includes observing, asking questions, measuring, predicting, conducting experiments, and communicating (Sujana & Jayadinata, 2018).

The essence of skill is knowledge given to humans by God. The human ability to develop the skills possessed is not easy, it needs to be learned and explored to be skilled. Skills is a knowledge that outwardly exists in humans and needs to be studied in depth by developing the skills possessed (Haniyyah & Hanik, 2022). The application of science process skills can develop students' creativity in learning so that they can actively develop their abilities and then apply them (Wayan, 2020). Training science process skills in students can be done by applying a scientific approach to learning. The scientific approach is a basic concept behind the formulation of teaching methods by applying scientific characteristics (Handayani et al., 2019). In Permendikbud No.103 of 2014, it states that the scientific approach is operated in learning activities which include learning experiences in the form of observing, asking, trying (gathering information), associating (reasoning), and communicating (Kemendikbud, nd-a). Scientific learning is learning that is carried out scientifically. The application of scientific learning in schools aims to accustom students to think actively, act, and work. The scientific approach is seen as having a close relationship with science learning, because the learning approach emphasizes the activeness of students in learning, and provides opportunities for students to independently build concepts in their knowledge, familiarizes them with dealing with, formulating, and solving problems found both in class as well as within the education unit (Razak et al., 2016).

Student Worksheets (LKPD) are worksheets that are related to what students are learning for them to work on (YUMY FIS Sociology Education Study Program Team, DIY Yogyakarta Sociology MGMP forum, 2019). LKPD is made as a forum to find out how much students understand the learning material they are learning through a sequence of steps that have been previously designed so that they can express their abilities and solve existing problems. LKPD is a form of learning media. As a learning media, LKPD functions to support student learning activities and can be used in conjunction with other media or learning resources. LKPD also contains tasks or jobs that students must do to master the required competencies (Study Outcomes, 2017). LKPD can be used as a guide so that learning activities can take place actively and independently, and can motivate students in increasing their understanding of existing symptoms and concepts (Nugraheny, 2018). Then LKPD must be prepared properly and of good quality so that it can be used as an instrument to measure students' science process skills.

A good LKPD is able to attract activity and explore students' skills in the skills of observing, asking, trying, associating, and informing. Therefore, the application of scientific-based worksheets in science learning will be more effective because students are accustomed to thinking actively, behaving, and working.

Online learning some time ago due to the effects of the spread of Covid-19 in Indonesia made teachers at SDN 4 Gulang Mejobo limited in carrying out scientific learning and more often conveying material through learning videos and giving assignments. In providing learning evaluations, teachers also never apply LKPD media, and assignments that are usually given to students are limited to assignments with questions contained in the student's handbook or questions that have been developed by the teacher himself. This makes students never get the opportunity to learn scientifically to develop their science process skills. So participant students often can't understand learning intact. Therefore researchers are moved to conduct research regarding the implementation of science learning scientifically to students using LKPD. So motivated researcher conduct research by title:

"Application Worksheet Learners (LKPD) Scientific Based In Training Process Skills Learning Science Class Science V at SDN 4 Gulang Mejobo Kudus".

METHODS

This study uses qualitative methods in this type of research field (field research) which in carrying out research researchers take data in the field directly and systematically to find a solution to the problem (Dono, 2021). Qualitative research is a systematic activity to explore existing theories with facts in the field in the form of phenomena, events, social activities, attitudes, beliefs, or an individual or group perception, which is then analyzed and described (Rukajat, 2018). Approach to qualitative research this is based on the philosophy of postpositivism which is used to examine the condition of natural objects where the researcher has a role as a key instrument, data collection techniques are carried out through triangulation, data analysis is qualitative in nature and the results of the research emphasize meaning rather than generalization (Sugiyono, 2013). Analysis of qualitative research is strongly influenced by the power of words and sentences used, so the focus of qualitative research is on the process and the meaning of the results (litasari Adi et al., 2021).

The data collection techniques used to collect data in this study were observation, interviews, and documentation. The data from the results of the research were then processed using the data analysis technique of the Milles and Huberman model, which consisted of three stages, namely data reduction namely summarizing, choosing the main things, and focusing on

important things that are useful in research. Display data, namely presenting data, which is in qualitative research presentation of data is done in the form of short descriptions in the form of narratives, charts, relationships between categories, and the like. As well as conclusions or verification, namely concluding the data that has been obtained which is then analyzed so that it can produce conclusions according to the data obtained (Umrati and Hengki, n.d.).

RESULTS

Application Worksheet Learners (LKPD) Scientific Based In Training Process Skills Learning Science Class Science V

Application of scientific-based student worksheets (LKPD) in training science process skills before the science learning process takes place. The first stage is planning where the teacher first prepares lesson plans, teaching materials, and learning materials, determines learning models and media, determines learning objectives, and materials. learning evaluation. Then to the next stage, namely implementation, the learning process starts with preliminary activities, core activities, and closing.

The steps for implementing scientific-based student worksheets (LKPD) in training science process skills in science learning include the following:

1) The teacher conveys learning material.
2) Students are divided into several groups. Each group gets a different number.
3) The teacher distributes LKPD sheets.
4) The teacher makes practicum activities, then each group does them.
5) The group discusses the practicum material for its part and ensures that each group member understands it, then prepares practicum tools to be presented in front of the class.
6) The teacher calls random group serial numbers, then the numbers are called forward to demonstrate and provide explanations to all class members according to the results of group discussions.
7) Other friends respond by asking or adding. The teacher gives reinforcement.
8) The teacher gives conclusions about the material that has been given.

The last stage is evaluation, at this stage students will be given assignments in the form of tests or oral questions related to the material that has been studied. The aim is to determine the level of students' understanding of learning material, as well as to determine the development of science process skills in students from the application of scientific-based student worksheets (LKPD).

To be able to use the scientific method and be able to acquire new knowledge or develop existing knowledge, students must master Science Process Skills (KPS). By mastering these skills, children will certainly have good competence in learning. To get meaningful learning, students must have direct experience in their learning, namely through the use and development of process skills and a scientific attitude. To improve science process skills, the researcher invites students to learn by scientific work through scientific-based student worksheets (LKPD). Student worksheets (LKPD) are made by containing questions that can train students' process skills, starting from observing, classifying, measuring, communicating, making conclusions, and predicting.

Image 1.

Student Worksheets (LKPD) 1

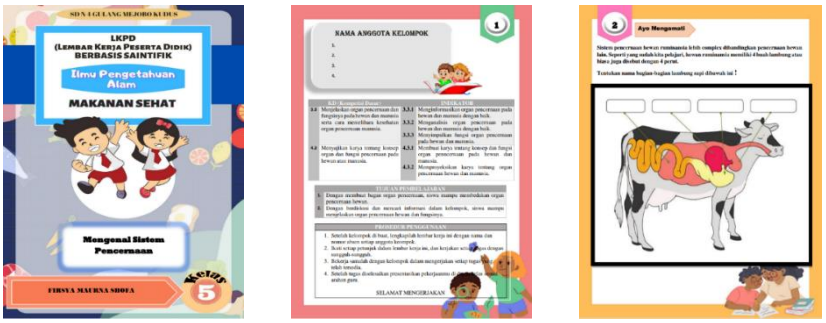
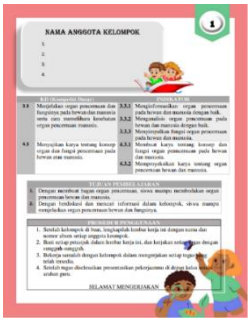
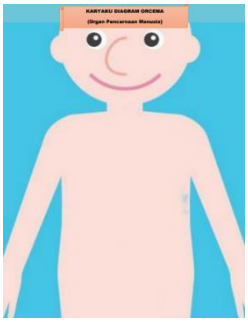


Image 2.

Student worksheets (LKPD) 2





Implementation Success Worksheet Learners (LKPD) Scientific Based In Training Process Skills Learning Science Class Science V

Implementation of scientific-based student worksheets (LKPD) in science learning class V at SDN 4 Gulang Mejobo Kudus aims to train science process skills. Its success can be seen from the achievement of several indicators of science process skills, namely as follows :

a. Using all the senses to make an observation.
b. Use logic and intuition to classify.
c. Make calculations to take measurements.
d. Submit a report and explain the results of the research.
e. Make conclusions from the experiments and discussions carried out.
f. Make predictions about everything that will happen based on an estimate.

In the first cycle of implementation worksheet learners (LKPD) scientifically based on training process skills learning science class science V at SDN 4 Gulang Mejobo Kudus, had an impact on the quality of learning in the classroom. The children showed their enthusiasm for learning boldly submitting opinions, and group cooperation, they can think critically when

the teacher asks questions, and they show enthusiasm and enthusiasm when learning activities take place. However, science process skills in students have not been well developed.

Whereas in the 2nd cycle it became much better, the enthusiasm of students for learning science was very good, the class became active and students began to be able to understand how to solve a problem through scientific work, their science process skills developed. Students in the first cycle still lack knowledge of science process skills, while in the second cycle their science process skills are well-trained and show an increase in progress which shows the effectiveness of applying worksheets. learners (LKPD) scientifically based on training process skills science students in class V. This can be seen in the recapitulation table for the results of science process skills after observing and analyzing by the teacher during the implementation of the worksheets in progress with the rating scale *K=Not Good, C=Fair enough, B=Good, SB=Very Well.*

No	Name	Skills					
		Observation	**Classification**	**Measure**	**predict**	**Communication**	**Conclude**
1.	Afriza Khandiq Annuha	B	K	B	K	K	B
2.	Daniel Randi Setiawan	C	K	K	K	B	C
3.	Febrian Reza Ardiansyah	C	K	K	K	B	C
4.	Firda Ananta Putri	B	K	B	K	K	B
5.	Kayla Husna Amalia	K	K	K	K	K	K
6.	Maulana Abil Wahyu	B	K	K	K	B	C
7.	Muhammad Khoirul Ferdiansyah	K	K	K	K	K	K
8.	Muhammad Risky Kurniawan	B	B	B	B	B	B

9.	Muhammad Wildan Syaputra	B	K	K	K	K	B
10.	Sakhi Azka Ghifari	B	B	B	B	B	B
11.	Shaqila Ribnaty	B	B	B	B	B	B
12.	Wabil Rifki Maulana	K	K	B	K	K	K
13.	Yasirli Amri	B	K	B	K	K	K

Table 1. Recapitulation of KPS results in lesson 1

Table 2. Recapitulation of KPS results in lesson 2

No	Name	Skills					
		Observation	Classification	Measure	predict	Communication	Conclude
1.	Afriza Khandiq Annuha	B	C	B	C	B	B
2.	Daniel Randi Setiawan	B	C	B	C	B	B
3.	Febrian Reza Ardiansyah	B	C	C	C	B	B
4.	Firda Ananta Putri	B	B	B	B	C	B
5.	Kayla Husna Amalia	B	B	K	K	K	C
6.	Maulana Abil Wahyu	B	C	C	C	B	B
7.	Muhammad Khoirul Ferdiansyah	B	B	B	C	B	K
8.	Muhammad Risky Kurniawan	SB	B	B	SB	SB	SB
9.	Muhammad Wildan Syaputra	B	B	C	C	C	B
10.	Sakhi Azka Ghifari	B	B	B	SB	B	SB
11.	Shaqila Ribnaty	SB	SB	B	B	SB	SB
12.	Wabil Rifki Maulana	B	C	B	B	C	B
13.	Yasirli Amri	B	C	B	B	C	C

Factors Supporting And Inhibiting Implementation Worksheet Learners (LKPD) Scientific Based In Training Process Skills Learning Science Class Science V

Based on the results of observations of several supporting and inhibiting factors in the smooth process of applying student worksheets found in class V, one of them is from the

internal students themselves, where each child has different mental readiness to learn and interest in learning. Then the role and support of parents in children's learning. There are also external factors that come from outside the students themselves, namely from the school itself. School management, infrastructure, quality of teacher professionalism, learning resources, and learning methods also determine the success of learning activities.

DISCUSSION

Science learning activities before using the application of student worksheets (LKPD) continued to run well by utilizing student learning companion modules or books available at schools, but this was felt to be insufficient to grow students' process skills. In its application, the Scientific-Based Student Worksheet (LKPD) is suitable for use with the conditions and situations at SDN 4 Gulang Mejobo Kudus, because in its application the class becomes more active, and the learning enthusiasm of students in learning science also increases. In addition, students' science process skills also increase along with the use of worksheets Learners (LKPD) Scientific based so that they train or familiarize themselves with solving problems with scientific activities. This can be shown during the observation process, many students are brave in expressing opinions, have good group collaboration, students can think critically when the teacher asks questions, students also show enthusiasm and enthusiasm during learning activities. In addition to more varied and interesting learning activities with attractively designed worksheets, students are also able to learn independently and have fun in their groups, they can also explore their knowledge through direct scientific work experience so that the learning gained becomes more meaningful.

In the first cycle of applying the Worksheet Learners (LKPD) Based on Scientific, students are still passive in developing their science process skills. They are less able to express themselves because they are not used to it. Many of the students do not understand how to use all of the senses to make an observation, how to use their logic and intuition to classify, make calculations to make measurements, submit reports and explain research results, and make conclusions from experiments and discussions. what to do, as well as how to predict everything that will happen based on estimates. In this stage, even though the class has been made in groups, the teacher still works hard to guide students to develop skills to be able to solve problems using the scientific method.

And in the 2nd cycle, the results showed a significant increase in progress. Learning is getting better and students are starting to be able to work independently in their groups. By training the skills of students in using the scientific method in solving a problem. They begin to be skilled in observing everything needed to be able to answer or find out the cause of the

problems they face. They also begin to be able to use their logic and intuition in classifying problems. Students begin to dare to speak up by expressing their opinions, submitting reports, or explaining the results of their research. They also began to be skilled in making conclusions and making predictions from the experiments and discussions that had been carried out.

In application worksheet learners (LKPD) scientifically based on training process skills learning science class science V at SDN 4 Gulang Mejobo Kudus found several factors that supported or hindered the smooth running of teaching and learning activities. These factors were found in internal and external students. Internal factors are factors that come from outside the students themselves, including school management, school infrastructure, quality of teacher professionalism, learning resources, learning methods, and media, science laboratories. And external factors are factors that come from within students, including the role of parents in supporting student learning success, students' mental readiness for learning, learning competition between students, and students' learning interest.

As for the supporting actors in the application of scientific-based worksheets, they include good school management, guaranteed teacher professionalism, adequate learning resources, varied learning methods and media, interest in learning, and learning competition among students. While the inhibiting factors are inadequate infrastructure, parental support for student learning outcomes is lacking, and students' mental readiness for learning is not the same.

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