

Increasing student learning activity through guided inquiry used water cycle bag learning media in VA SDN 2 Baleharjo, Pacitan

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ABSTRACT

Based on the results of observations made by researchers, it shows that most students are not actively involved in participating in science learning, in the matter of analyzing the water cycle. In this material students tend to have difficulty understanding the flow of the water cycle properly, this was revealed when the researchers conducted an assessment regarding students' activeness in learning science and asked questions related to the concept of the water cycle. Given this background, to improve students' abilities in analyzing the water cycle material, a solution was formulated, namely using the guided inquiry method assisted by water cycle bag learning media. The approach used in this research is qualitative research with a Penelitian Tindakan Kelas (PTK) design with stages 1) planning, 2) implementation, 3) observation, 4) reflection. The results showed that the active learning of students in class VA SD Negeri 2 Baleharjo in learning science on the water cycle material after being given a learning action using the guided inquiry strategy assisted by the media of the water cycle bag experienced an increase of 25%, namely from cycle I of 54.17% (13 students) to 79.17% (19 students) and included in the very high category. The action in this study was stopped and said to be successful in cycle II because it had reached the success criteria.

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INTRODUCTION

Ilmu Pengetahuan Alam (IPA) or Natural Sciences is a subject that discusses natural phenomena which are arranged systematically based on the results of experiments and observations made by humans (Samatowa, 2006). Science knowledge is based on the process of finding out to get information or knowledge. The science learning process carried out should provide direct experience to students. The experience provided is in the form of learning activities that encourage student's curiosity. Students are given the opportunity to find out about science subject matter.

The results of observations made by researchers in the VA class of SD Negeri 2 Baleharjo showed that most of the students were not actively involved or active participating in science learning. Students are seen listening to the teacher's explanation, but students do not want to respond when the teacher asks questions. Student activities in learning tend to be silent and listen. Students rarely ask questions to the teacher. Students also do not concentrate in participating in learning even though they appear physically silent paying attention to the teacher's explanation. Classroom learning activities do not use media or visual aids that support the delivery of subject matter. Only certain students actively raised their hands. Another problem was found that teachers did not use lesson plans (RPP) in science lessons. This resulted in the delivery of material not coherent which resulted in students having difficulty understanding the flow of the water cycle properly, this was revealed when

the researchers conducted an initial assessment regarding students' activeness in science learning and asked questions related to the concept of the water cycle.

The water cycle is a cyclical process that occurs continuously and never stops or even runs out, starting from the water that is on land turns into clouds and then becomes rain. There are 3 process stages in the water cycle that run systematically and regularly, namely evaporation, condensation, and precipitation (Kusumawati, 2017). In addition, there are 2 stages that are not included in the water cycle stages in grade 5 in the Thematic Theme 8 book, but these stages affect the water cycle, namely transpiration and infiltration.



Picture 1. Water Cycle

The stages of the water cycle are explained in the Qur'an which provides precise information regarding the formation of rain. "He is Allah Who sends the winds, then the winds move the clouds and Allah spreads them across the sky according to His will, and makes them lumpy; then you see the rain water coming out of the cracks; so, when the rain falls on His servants whom He wills, they suddenly become happy" (Ar-Rum: 48). Another verse of Allah, namely "As for sea water, Allah says in Surah Al-Waqiah verse 70, which means: "If We wanted it, We would have made it salty, then why are you not grateful?", in it chooses the word salt in this verse which associated with the water cycle. Science shows that river water transports various minerals to the sea, one of which is sodium chloride (salt). As the water evaporates, only the water (H₂O) evaporates where the salt is left behind. Through a cyclical process that repeats itself over millions of years, seawater remains as salty as it is today.

This scientific evidence shows that the verses revealed by the Prophet Sallallahu 'Alayhi Wasallam (SAW) to people living in the dry land of Arabia are indeed the words of Allah. Amidst the rarely hidden desert climate, he can provide a highly scientific explanation of the water cycle. Even though the people around him only knew that the water he drank came from a well or that the Nile was the source of water for the Arabs at that time.

Considering the background of students at SDN 2 Baleharjo where the activity in learning science is low and there is quite difficulty in analyzing the water cycle material, a solution is formulated, namely using the guided inquiry method assisted by water cycle bag learning media.

Guided Inquiry or guided inquiry is an inquiry process that students carry out carefully under the guidance of a teacher to find answers to previously predicted problems (Callahan et al, 1992; Kellogg et al, 1993). In elementary schools, inquiry learning still requires teacher guidance, because students' ability to carry out the investigative process is still at a modest level. Therefore, guided inquiry learning should be used in elementary school inquiry learning (Winarsih, 2015).

In general, the stages of guided inquiry learning are divided into four stages, namely motivation, information gathering, information processing and closure (Howe and Jones, 1993). The motivational phase is carried out to start guided exploratory learning. Motivational activities consider the material or material being studied. Suggestions can be in the form of statements, questions or orders. Before starting the lesson, the teacher explains the main activities that students must do.

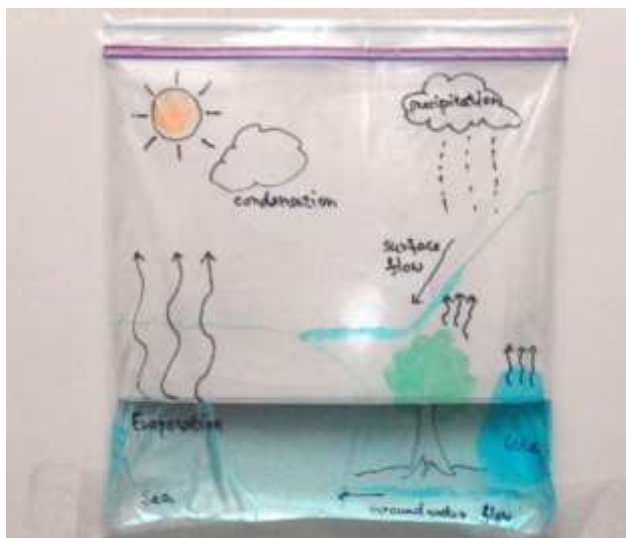
The second step is data collection. Gathering information means gathering the information needed to answer a question. After the data is collected (observations are made), the next step is data

processing. Teachers must guide students to use this information to make inferences, speculation (thought, reflection), generalization (generalization), and other higher levels of thinking. The decision stage can be completed by asking students to draw conclusions from the learning tasks they have completed. In addition, you can conclude with questions that can make students think.

The guided inquiry carried out is then combined using learning media so that the learning process can be maximized. The role of the media is very important in the learning process so that the information conveyed by the teacher is not verbal and easily accepted. The presence of learning media can make it easier for students to understand teaching material even though it crosses various spaces and times. In addition, the media can increase students' attention, where one of the goals of the media is to attract and direct students' attention to concentrate on the content of the lesson (Arsyad, 2013).

Sudjana & Rivai (2015), states that learning media in the learning process is useful so that: (a) learning attracts more attention so as to foster student learning motivation, (b) learning material will be more easily understood by students, (c) teaching methods become more varied so as to reduce learning boredom, (d) students are more active in learning activities. Meanwhile Kurniawati (2014) explains the use of learning media as follows: (a) clarifying the presentation of messages, (b) overcoming the limitations of space, time, and sensory power, (c) overcoming passivity, so that students become more enthusiastic and more independent in learning. learning, (d) providing the same stimulation, experience, and perception of learning material.

The learning media used in learning with the guided inquiry strategy is the Water Cycle Bag media. This water cycle bag is a learning medium developed by the researcher in the form of a clear plastic bag on top of which is given a picture of the water cycle and then inside is given blue water which depicts water from the sea, and this media is placed in a bright place exposed to sunlight or in a place that is allow evaporation to occur. From this media, students can observe directly, water evaporates and then condensation occurs which then turns into water droplets.



Picture 2. Water Cycle Bag

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METHOD

2.1. Research Approach

The approach used is qualitative research with a Classroom Action Research (PTK) design, with stages namely 1) planning, 2) implementation, 3) observation, 4) reflection (Arikunto, 2010). The Classroom Action Research cycle flow will be described as below:



Picture 3. PTK Cycle

Each cycle consists of four stages, namely planning, implementing, observing and reflecting. The following is an explanation of each stage. Planning, these steps consist of developing lesson plans prepared according to guided inquiry learning steps used to increase student activity in learning, preparing water cycle bag learning media, worksheets, evaluation questions, and observation sheets of learning implementation. Implementation, at this stage the researcher carried out learning on the Water Cycle material using the guided inquiry method assisted by water cycle bag media. Observation, this stage is carried out during learning to observe the activeness of student learning and the implementation of guided inquiry in the learning carried out by the teacher. Reflection, at this stage the researcher reviews the learning that has been carried out, what has and has not been achieved, what problems arise, and prepares various alternative solutions to the problem so that the next cycle can be maximized.

2.2. Research Subject

The subjects studied in this study were VA class students in the even semester of the 2022/2023 academic year at SD Negeri 2 Baleharjo, Pacitan District, with a total of 24 students.

2.3. Execution Time

The subjects studied in this study were VA class students in the even semester of the 2022/2023 academic year at SD Negeri 2 Baleharjo, Pacitan District, with a total of 24 students.

2.4. Research instrument

Research instruments are tools that can be used to collect research data (Sanjaya, 2010). This study uses data collection techniques with observation and documentation. The research instrument used was an observation sheet in the form of a checklist as an observation guide. This study used two observation sheets which were used to observe student's active learning in science learning and the implementation of guided inquiry during the learning process. The researcher made observations and wrote down the results of the observations on the available observation sheets. Documentation is used to complement the results of observations and strengthen the data that has been obtained.

2.5 Research Analysis Data

The collected data will not be meaningful without being analyzed, namely processed and interpreted. Data analysis in this study uses descriptive qualitative and quantitative because the data obtained is the result of observation. The stages of qualitative analysis are in the form of data presentation, data simplification, and data grouping according to the focus on student learning activeness issues that have been collected through observation sheets.

2.6 Action Success Criteria

The action in this study was said to be successful if there was an increase in student's active learning in science subjects and understanding of the Water Cycle material in the VA class of SD Negeri 2 Baleharjo by $\geq 75\%$ (included in the very high category) so that the cycle was stopped.

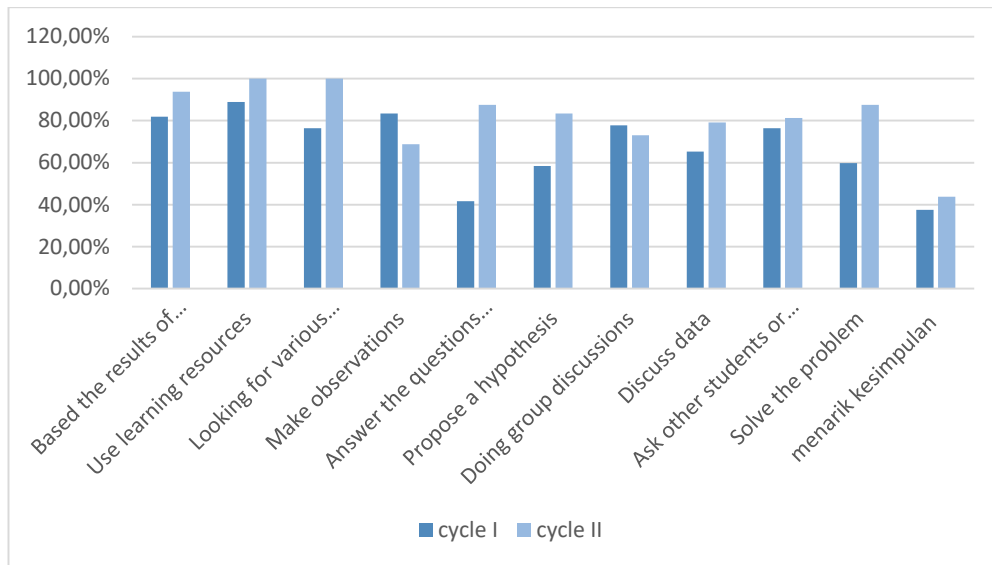
FINDINGS

This classroom action research consisted of two cycles, namely cycle I and cycle II. The research started on March 13th 2023 to May 13th 2023. Cycle I was conducted in three meetings, while cycle II consisted of two meetings. Determination of the number of meetings for one cycle is based on the syllabus used by the VA class teacher at SD Negeri 2 Baleharjo. The following is a presentation of the results of cycle I and cycle II research.

Based on the results of observations of student learning activeness in cycle II, there was an increase in several indicators of student learning activeness. The activeness of student learning physically on the indicators of carrying out work instructions in Lembar Kerja Peserta Didik (LKPD) or Student Worksheet increased by 11.8%, namely from cycle I of 81.95% to 93.75% in cycle II. The indicator of making the most of learning resources increased by 11.12% from cycle I of 88.88% to 100% in cycle II. The indicator of looking for various information to solve problems has increased by 23.62%, namely from cycle I of 76.38% to 100% in cycle II; while the observation indicators decreased by 14.58%, namely from cycle I of 83.33% to 68.75% in cycle II.

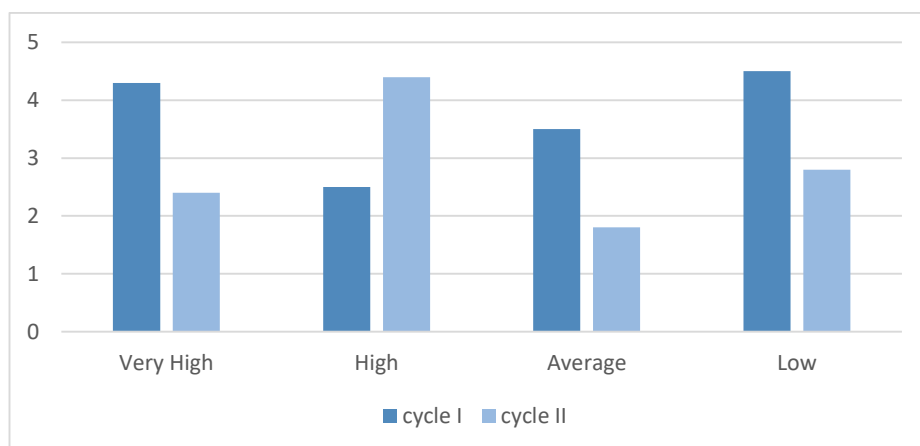
The activeness of students' mental learning on the indicators of answering questions given by the teacher (brainstorming) increased by 45.83%, namely from cycle I of 41.67% to 87.50% in cycle II. The indicators put forward the hypothesis that there was an increase of 25%, namely from the first cycle of 58.33% to 83.33% in the second cycle. The indicator of carrying out group discussions decreased by 4.82%, from 77.79% in cycle I to 72.97% in cycle II. The indicators discuss the data that there was an increase of 13.88%, namely from the first cycle of 65.29% to 79.17% in the second cycle; while the indicator of asking other students or teachers if they do not understand the problems faced increases 4.87%, namely from cycle I of 76.38% to 81.25% in cycle II. The problem solving indicator increased by 27.79%, namely from cycle I of 59.71% to 87.50% in cycle II; while the

indicators draw conclusions that there is an increase of 6.25%, namely from cycle I of 37.50% to 43.75% in cycle II. These results can be described in the following diagram.



Picture 4. Diagram of Comparison of Student Active Learning in Cycle I with Cycle II

The results of observing student learning activeness in cycle II also showed an increase in the student learning activeness category. The number of students included in the very high category increased by 6 students, namely from 13 students (54.17%) to 19 students (79.17%), the high category decreased by 2 students, namely from 5 students (20.83%) to 3 students (12.5%), the moderate category decreased by 4 students, from 6 students (25.00%) to 2 students (8.33%). The table for the categorization of student learning activeness in cycle I can be seen in appendix 5 on page 153, while for cycle II it can be seen in appendix 8 on page 165. The following is a diagram of increasing student learning activity through guided inquiry assisted by water cycle bag media.



Picture 5. Diagram of increasing student learning activity from cycle I to cycle II

DISCUSSION

Action research with the application of the guided inquiry strategy assisted by water cycle bags in the science subject on the Water Cycle material in the VA class of SD Negeri 2 Baleharjo showed that students' learning activeness increased in each cycle. The increase in student learning activity occurred because of the involvement of students in finding and processing learning materials, and students were trained to explore and utilize the environment as a learning resource, this is like the purpose of using the guided inquiry strategy proposed by Sumantri and Permana (1999).

When making water cycle bags, a cognitive process occurs where students show good interest in completing the making of this water cycle bag media, students feel they are playing, but actually there is a learning process there. After students complete the water cycle bag media, the next stage is for students to work on student worksheets (LKPD). Through the use of a guided inquiry strategy assisted by water cycle bag media, it makes learning interesting, so that it makes students more enthusiastic and have an understanding of the water cycle when working on Student Worksheet.

CONCLUSION

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