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**THE IMPLEMENTATION OF PROBLEM-BASED CONTEXTUAL APPROACHES IN
NATURAL SCIENCE LEARNING ABOUT LIFE AND ENVIRONMENT TO IMPROVE
LEARNING OUTCOMES AT ELEMENTARY SCHOOL**

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Abstract

The learning process should activate students by looking at their initial abilities so that the learning that is carried out becomes meaningful. Learning by using a problem-based contextual approach is one of the ways that can be applied so that the learning process not only emphasizes conceptual understanding but also in the problem-solving process. This research was a classroom action research conducted in 2 cycles to improve the quality of the process and learning outcomes. Each cycle consisted of planning, implementing, observing, and reflecting. The formulation of the problem in this study was "How is the application of problem-based contextual approaches in learning science about living things and their environment to improve student learning outcomes in IV grade SDN 10 Sungai Kakap?". Data analysis techniques in this study were measured from the level of success in implementing classroom actions based on changes in teaching and learning using observation sheets and anecdotal notes narratively as well as improving learning outcomes using test instruments. This classroom action research was conducted at SDN 10 Sungai Kakap on science learning using problem-based contextual approach in IV grade with 41 students. The results showed an increase in learning outcomes where the first cycle of 20 or 48.78% of students had not been completed with an average of 46.61 learning outcomes, and 21 students or 51.21% had been completed with 77.81 learning outcomes. Then in the second cycle, there was an increase in which as much as 2 or 4.87% of students had not been completed with an average learning outcome of 58 and 39 or 95.51% of students had completed with an average learning outcome of 75.86.

Keywords: *Learning Outcomes, Problem Based Contextual, Science Learning*

Introduction

A teacher is required to work professionally. The teacher must be able to design learning so that it is attractive to students. Learning design can be done by combining methods or approaches. The teacher is the director who will make the class so enjoyable and make it easier for students to understand the concept of the lesson. Learning is carried out. A teacher must be able to increase the motivation and active involvement of students in the class. So they are motivated to think, work, try, and apply in real life. In learning activities ongoing teaching, there has been a purposeful interaction. Teachers and students move it. The intended interaction is due to the teacher who interpreted it by creating an educational environment that is of value to the interests of students in learning. The teacher wants to provide the best service for students by providing a pleasant and exciting environment. The teacher tries to be a good

guide with a wise role to create a harmonious two-way relationship between the teacher and students. The learning process carried out to be fun, active, and without coercion.

Through direct experience in this comic-assisted problem-based contextual approach, it will be able to provide direct experience, namely the interaction of students with their environment which looks at the sense of sight, the sense of smell and touch so that it will be able to make students remember in a longer period. Teachers must be able to get to know students individually so they can give ease to students in learning (Agus Taufik, 2014). Teachers must be sincere in behaving and doing to understand students with all the consequences. All obstacles in the learning process, both those that come from students and the facilities and infrastructure of the school, must be overcome in various ways that must be thought by the teacher because the success of teaching and learning is more determined by the teacher in managing the class. Realization of the achievement of these objectives, there are teaching and learning interaction activities, especially those that occur in class, is a communication process of delivering learning messages.

Science learning is an active process, meaning that learning science emphasizes the activeness of students, not teacher-centered. The teacher can associate between lessons with everyday problems that are commonly seen or experienced by learners. So that in this study, students are invited to learn the natural environment, so that they experience meaningful learning where they learn to experience what is learned, not just knowing.

In the teaching and learning process, teachers are often more active in the class of delivering information, so students only listen to what is conveyed and are more towards memorizing the material, without paying attention to the students. Learners must understand the concept. The teacher still teaches conventionally with lectures, thus ignoring the fundamental knowledge possessed by students. For that, we need a learning approach that empowers students. One approach that empowers students is the contextual approach, or Contextual Learning and Teaching (CTL).

The learning steps that are implemented include: (1) The application of a problem-based contextual approach is learning begins with giving problems to students relating to the subject matter being studied. The problem given is controversial, essential and can be solved. Material to be discussed as a group and found a solution. Students do the process of finding a solution, and the teacher as a facilitator; (2) The quality of the learning process is a picture of the activities of teachers and students during the learning process based on the indicators contained in the observation guide sheet. These qualities are reflected in: (a) the ability of teachers to manage teaching and learning activities; (b) learning activities of students and teachers during the learning process take place; (c) cooperative skills; (d) students' responses to learning tools and problem-based contextual approaches are applied. The quality of the learning process has been said to improve if there are changes in a better direction in the learning process. For example, there is an increase in the number of active students, a pleasant learning atmosphere, reduced teacher dominance, excellent student collaboration skills, changes in students' attitudes toward science lessons, (3) Science learning outcomes are reflected in the completeness of learning objectives, individual completeness, classical completeness. This completeness is seen from the acquisition of students' scores. The questions developed are questions of memory/knowledge, applications, and which are related to the daily lives of students.

This research was conducted to improve the learning outcomes of science about living things and their environment in IV grade students at SDN 10 Sungai Kakap through the application of contextual based approaches problem. The benefits of the study include: (1) For students, classroom action research is expected to improve student learning outcomes, train students to speak out, be creative, be independent so that it is easier to understand the material in science lessons; (2) For teachers, assisting science subject teachers in improving their learning strategies so that teachers can increase their role as facilitators and motivators in learning,

especially by using contextual approaches; (3) For SDN 10 Sungai Kakap: Providing good contributions and inputs, for learning performance in improving learning outcomes, and improving school quality. Relating to the class action research effort with the title application of a problem based contextual approach, it is felt to be very relevant. It is reinforced by the research of Slamet et al. (2003), that the ability of elementary school students to solve problems and process skills increase through problem-based learning.

The teacher's role will shift from determining "what is learned" to "how to provide and enrich learners' learning experiences " (Balitbang Depdiknas, 2003). The contextual approach or Contextual Teaching and Learning (CTL) is a fundamental concept that helps teachers link material taught with real-world situations of students and encourages students to make connections between the knowledge they have and their application in their lives as family members and the community (US Department of Education, 2001).

Research Method

This research was a qualitative classroom action research carried out to improve process and student learning outcomes. The research was conducted at SDN 10 Sungai Kakap in IV grade totaling 41 people consisting of 20 male and 21 female students. Data collection techniques included (1) Data from observations of the implementation of the Natural Science by applying a contextual approach to making project groups to investigate the causes of river pollution in the student environment. In the demonstration, students were asked to display the results of assignments to others about the competencies they have mastered. In problem-based contextual learning, students are invited to think to find answers to real problems that occur; (2) Data on learning outcomes were obtained from data about the learning process collected through observation of interviews, field notes (anecdotal), data analysis in the form of conclusions and learning outcomes included mastery of concepts as well as the ability to solve science problems in life collected through tests. To measure the success of the implementation of this classroom action research can be seen from a change in attitude, student behavior in thinking and acting in the teaching and learning process. You do this by observing the learning process using observation sheets (checklists) and anecdotal notes of students in a narrative manner as well as the progress of students in terms of learning outcomes. It was done by using a test instrument consisting of questions about aspects of memory/knowledge and the application of science in everyday life (problem-solving).

The complete action research procedure can be described as follows: (1) Actions, where the implementation of the study begins with observation, giving pre-tests, and interviews. The results are used for deep initial reflection determine the first cycle planning; (2) Cycle activities include cycle 1 consists of the Planning phase by conducting exploration, namely reviewing the location of research, compiling a schedule of conducting data collection that is tailored to the schedule of learning activities in IV grade at SDN 10 Sungai Kakap, preparing a learning tool together (teacher-peers or colleagues), namely: by conducting study curriculum or elementary syllabus of science subjects, creating learning scenarios that refer to contextual problem-based learning, designing teaching materials/worksheets, preparing observation sheets for student activities, designing learning outcomes tests, preparing students' anecdotal notes, conducting peer teaching and modeling applying learning scenarios and discussing them together with colleagues; (2) This study involved grade 4 students of SDN 10 Sungai Kakap by means of the teacher implementing the learning scenario using problem-based contextual learning, the teacher evaluating the implementation of problem-based contextual learning and providing an assessment of student worksheets in groups; (3) At the observation stage the teacher observed the learning process; (4) The reflection phase is carried out by the teacher by analyzing the results of observations about the activities of students during the learning process, students' attitudes during learning, group discussions, percentages, reports

in the form of students' abilities in solving science problems in life in the form of worksheets, students participation in the learning process, the suitability of problem-based contextual learning scenarios with the implementation of activities. Learning, percentage results and tests, and their relation to group activities were reflected. At this reflection stage, the teacher discussed with peers to assess whether the actions taken can improve the quality of the processes and learning outcomes of students in science and plan the next cycle.

Result and Discussion

Research data showed that 20 students or 48.78% of students have not yet completed the learning process, this was seen from the results of evaluations conducted by the teacher, these students get an average learning outcome of 46.6. In comparison, 21 students or 51.21% of students have completed their learning outcomes with an average score of 77.81.

Table 1 Learning Outcomes Completeness Analysis of Cycle I

No	Score	The Number of Students	Percentage	Category
1	$X < 75$	20	57,8%	Not Complete
2	$X \geq 75$	21	77,81 %	Complete

From the learning outcomes shown in this first cycle, this research was considered necessary to proceed in the next cycle. The learning process carried out in the second cycle will be carried out based on the results of the reflection conducted by the observer in the learning process of the cycle I.

The results of reflection in the first cycle were: (1) the learning process carried out in the first cycle where the teacher does not convey the learning objectives conducted. The learning process carried out by the teacher only used the lecture method so that the learning process was boring for students, and students were not motivated to do the learning process. It caused students to not focus on the learning process that was carried out, students were busy with their own business and talking with their peers; (2) the learning process carried out by the teacher is inflexible and very rigid, the teacher also did not give flexibility to the students to explore the learning process, the subject matter was very limited so that students only get concept material without developing thoughts on the development of natural science that happened; (3) in the first cycle, the teacher did not provide the time to spare so students did not do the identification in the learning process so that in the next cycle the teacher would give more time so that the students were right in completing the learning phase; (4) in the first cycle students were less brave in identifying, they were not free to behave, they also looked stiff and afraid of being wrong so that in the next cycle the teacher gave students the opportunity to freely identify in searching and identifying the environment.

The second cycle was carried out according to the plan that was made after carrying out the first cycle, which was the result of reflection that appeared to be a lack of shortcomings of the teacher so that the learning process was not optimal. The learning outcomes of students have not yet reached their completeness. The causes of the unsuccessful learning process are influenced by several factors, such as being the basis for preparing a plan in the second cycle both in terms of preparing the Lesson Plan (RPP), observation sheets, and evaluation sheets. The second cycle was carried out according to the plan made after doing the first cycle. In this second cycle, the researcher prepared the lesson plans, observation sheets, and evaluation sheets. Cycle II was implemented to improve learning in cycle I, and the results of learning cycle II showed:

Table 2 Learning Outcomes Completeness Analysis of Cycle II

No	Score	The Number of Students	Percentage	Category
1	$X < 65$	2	4,87 %	Not Complete
2	$X \geq 65$	39	95,51 %	Complete

The results of these indicators are compared based on the success category, which was 75% in the complete category between cycle I and cycle II. Second cycle learning outcomes showed two students or 4.87% with an average learning outcome of 58 while as many as 39 people or 95.51% of students got an average learning outcome of 75.86. It showed an increase in learning outcomes from cycle I to cycle II. The results of the indicators were based on the success category that was 70 in the complete category.

Comparison of mastery learning between cycle I and cycle II can also be seen through the following figure:

Fig. 1 Completeness of Learning Outcomes

Based on the tables and figure shown above, it can be seen that cycle II has increased from cycle I. This increase occurred in the completeness of student learning outcomes by 53.6%. In the second cycle, students who already have 38 students learning outcomes or 92.62%. These results have increased compared to the results of the first cycle. Based on the indicators of success, the results of the second cycle can be said that the improvement of student learning outcomes through learning concept maps is said to be successful successfully 92.62% of students have completed mastery of the material. The reflexes in the second cycle were carried out by researchers and IV grade teachers. The purpose of this reflection activity is to discuss what are the obstacles in the implementation of the second cycle. In this cycle, overall learning has been going well.

Conclusion and Suggestion

Conclusion

The results of classroom action research conducted using a contextual approach to science lessons show: (1) An increase has occurred student learning outcomes using a contextual approach, at Natural Science learning of living things and their environment in IV

grade, this can be seen from the number of students completeness in the pre-cycle there were ten students who completed from 41 students, then in cycle I became 16 students completed or by 39, 02% and in the second cycle increased again to 39 or 95.51% of students completely from 41 students; (2) The use of contextual approach based on problems has a positive effect on student learning activities on living things and the environment, this is seen from the increase in student learning activities, this can be seen from several aspects that have reached above-average values. Learning activeness of students in Cycle I averaged 61.71 and in Sikius II increased to 85.15 with a difference of 23.44% increase.

Suggestion

The suggestions that can be submitted from this research are as follows: (1) The teacher or researcher must choose the right learning approach to use so that the learning process runs smoothly; (2) Time management in learning must be precise so that learning is in accordance with the plans that have been made and get optimal results; (3) Teachers are expected to be able to innovate in using the Learning Model so that learning can run more effectively.

References

- Agus, Taufik. (2014). Pendidikan Anak di SD.Tangerang Selatan:Universitas Terbuka.
- Ahmad, Zainal, Arifin. (2012). *Perencanaan Pembelajaran dari Desain sampai Implementasi*. Yogyakarta: Pedagogia.
- Arifin. (2012). *Penelitian Pendidikan, Pendekatan Kuantitatif dan Kualitatif PTK*. Yogyakarta: Lilin Persada Press
- Arikunto, S & Suhardjono, S. (2012) *Penelitian Tindakan Kelas*. Jakarta: Bumi Aksara.
- Asyhar,Rayandra. (2011). *Kreatif Mengembangkan Media Pembelajaran*. Jambi: GP Press.
- Darsono, M. (2000). *Belajar dan Pembelajaran*, Semarang: IKIP Semarang Pres.
- Idris Meity. (2015). *Pembelajaran yang Menyenangkan*, Jakarta:PT.Luxima Metro Media.
- Oemar Hamalik. (2010) *Kurikulum dan Pembelajaran*. Jakarta: Bumi Aksara.
- Sadiman Arief. (2010). *Media Pendidikan*.Jakarta:Rajawali Pers.
- Subini, Nini. (2012). *Psikologi Pembelajaran*. Yogyakarta: Mentari Pustaka.
- Susilo. (2007). *Penelitian Tindakan Kelas*. Yogyakarta: Pustaka Book publisher.
- Syaiful Sagala. (2007). *Konsep dan Makna Pembelajaran*. Bandung: Alfabeta
- Wina Sanjaya. (2009). *Perencanaan dan Desain Pembelajaran*. Jakarta: Kencana.