



The Improvement of Science Process Skills Theme 2, Subthemes 2 in Meeting 1 Through The Learning Cycle (5E) Model On The Students Grades IV-A at MI Al-Ahmad Krian Sidoarjo

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ABSTRACT

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Learning Cycle (5E) model is a learning model that focuses on student-centered. In the effort of improving students' science process skills, this study used a Learning Cycle (5E) model. The research method used in this study is classroom action research by Kurt Lewin's model which consists of two cycles and each cycle has 4 phases. This research was conducted at MI Al-Ahmad Krian Sidoarjo in grade IV-A with 28 students as a research subject. The data were collected from interviews, documentation, observation, test, and non-test (performances and products). The research instruments were teacher and student activity sheets, interview guidelines, question items, performance assessment rubric, and product assessment rubric. Based on the results, it showed that the implementation of the Learning Cycle (5E) was carried out well which can be seen from the increasing of the thematic subject on science process skills theme 2, subthemes 2 in meeting 1 after applying the Learning Cycle (5E) model. It can be seen from the increase in the percentage of students' learning outcomes from 75% (enough) to 100% (excellent). The result also showed the improvement of the teacher and student activity. The teachers' activity increased from 77.9% (sufficient) in the first cycle to 91.6% (excellent) in the second cycle. Then, the students' activity increased from 76% (sufficient) in the first cycle to 90% (excellent) in the second cycle.

INTRODUCTION

Thematic learning offers the learning models that create the learning process relevant and meaningful for students either formal or informal. The purpose of implementing the learning models in thematic learning is to develop a variety of knowledge from various subjects, so that the students can have a deep understanding of the materials that were taught by the teacher, such as developing the ability of the science process. Interesting learning will improve learning outcomes (Rachmawati, 2010). Student motivation needs to be improved by using various methods (Rachmawati et al., 2020). Science process skills are a set of skills that include intellectual, manual, and social skills

used to build students' understanding of knowledge and to complete established understanding. Science process skills are obtained by taking a teaching approach that gives an opportunity to the students to do the process of discovery or drafting concept so that students can develop their own facts and concepts and also can develop their attitudes and values (Malik, Kurnia, & Robiatus, 2016).

According to the interview that was conducted by the researcher with Mr. Maulana Malik Dopping as a teacher from grade IV-A at MI Al-Ahmad Krian, the result has shown that the students' skill in solving various problems by using the scientific method is lack, especially in the thematic material theme 2,

sub-theme 2, in meeting 1. It was proven by the results of the average thematic score that was obtained by the researcher from pre-test activities which was 59.3. From the 28 students as the subject, only 8 students passed the minimum completeness criteria (KKM), while the 20 students have not passed the minimum completeness criteria (KKM). The reason for the problems that have found in thematic theme 2, sub-theme 2, in meeting 1 on the science process skills of the students' grades IV-A at MI Al-Ahmad Krian Sidoarjo caused by several factors such as the lack of student's complicity in the process of gaining knowledge in teaching and learning process and the second factor is the teacher has not been able to choose an appropriate learning model.

According to Piaget, knowledge cannot be transferred from the teacher's thought to the student's, which means that the students must be active to build the knowledge structures based on their cognitive ability (Hariyanto, 2017). The direct experience has an important role in encouraging children's cognitive development in learning activities (Samatowa, 2010). One of the learning models that can facilitate the students in the direct learning experience is the learning cycle (5E) model. Learning Cycle (5E) model is a student-centered learning model. Learning Cycle (5E) model consists of a series of stages of activity (phases) then organized so that the students have an active role in mastering the competencies that must be achieved in the learning process. Each phase in Learning Cycle (5E) has a special function to contribute to the learning process that associated with the mental and physical activities, and also the strategy used by the teacher is indispensable to support the achievement of students' understanding of the complex concepts (Sartika, 2018). Based on those conditions, it is very possible for the researcher to use the Learning Cycle (5E) model to improve the science process skills of students in grade IV-A at MI Al-Ahmad Krian Sidoarjo.

METHODS

In this research, the method was classroom action research. Classroom action

research was a form of research that was reflective, participatory, collaborative, and spiral. It was conducted by a teacher towards the curriculum, school development, improving learning outcomes, and developing learning skills. It can be stated that classroom action research was a study that conducted by the teachers/researchers through self-reflection that aimed to improve their performance as a teacher so that the learning process can proceed well and develop the students' learning outcomes.

This study used Kurt Lewin's model of classroom action research. Kurt Lewin's model became the main reference for the variety of action research models, especially classroom action research. Kurt Lewin's model consisted of four components that were planning, acting, observing, reflecting (Hamim et al., 2009). This classroom action research was planned in 2 cycles. If there were weaknesses in the first cycle, then the second cycle was focused on correcting the weaknesses in cycle 1. If cycle 1 was successful, then cycle 2 was directed to the development of students.

There were two sources of data on this classroom action research that were students and teachers. The data sources collected from students was used to get the data on the results of improving science process skills in thematic learning themes 2, sub-theme 2 in meeting 1 by using the Learning Cycle (5E) model. The data sources collected from the teachers were used to determine the success rate of learning cycle (5E) models in thematic learning themes 2, subtheme 2 in meeting 1.

RESULTS AND DISCUSSION

In this classroom action research, there are two cycles. For each cycle there are four stages to be conducted, namely planning, acting, observing and reflecting. The data results of students science process skills would be outlined in the stages of pre-cycle, cycle I and cycle II. The stage of pre-cycle should be carried out first in order that the researcher can collect data related to the initial condition of the students in thematic learning theme 2 sub-theme 2 learning 1. The data of pre cycle can be seen in Table 1. Based on Table 1, it is known that from 28 students, 20 students do

not completed and 8 students considered complete. The percentage of completeness is 29% with the average grade of 59,3. Based on the results, the pre cycle can be concluded that science process skills of Students Class IV MI Al-Ahmad Krian Sidoarjo is still low. As a result the score of 20 students is less than minimum criteria that has been determined (78).

Table 1. Students result of Pre Cycle

No.	achievement	result
1.	Minimum Criteria	78
2.	Total Score	1660
3.	Class Average	59,3
4.	Highest score	80
5.	Lowest score	30
6.	Number of students completed	8
7.	Percentage of completeness	28,6%
8.	Number of students incompleted	20
9.	Percentage of incompleteness	71,4%

On the implementation of the first cycle there are four stages namely: planning, acting, observing and reflecting. At the stage of observation, evaluation data in the form of test and non-test. The results of the evaluation test in the form of 10 multiple choice questions. Evaluation of non-test in the form of an performance assessment of science process skills to measure indicators. The result of the accumulation of the score of science process skills in cycle I can be seen in Table 2.

Table 2. Accumulation of Science Process Skill Cycle I

No.	achievement	result
1.	Minimum Criteria	78
2.	Total Score	2163
3.	Class Average	77,3
4.	Highest score	82
5.	Lowest score	68
6.	Number of students completed	21
7.	Percentage of completeness	75%
8.	Number of students incompleted	7
9.	Percentage of incompleteness	25%

From the results of the assessment, it can be concluded that the implementation of Learning Cycle (5E) model on the thematic learning theme 2 sub-theme 2 learning 1 in cycle I obtained an average score of the science process skill test 77,3 (Enough). But the results of the accumulation scores obtained in the first cycle is less than ≥ 80 , then it is said to have not reached the performance indicator, so that still needs the improvement in cycle II.

Based on the results of the learning cycle I reflection, the researcher have found shortcomings, so that the implementation of cycle II that aims to fix the shortcomings in the first cycle and improve students' science process skills on the material of thematic learning theme 2 sub-theme of learning 1. In the second cycle there are four stages include planning planning, acting, observing and reflecting. From the data results of the accumulated score in Cycle II it can be concluded that the implementation of Learning Cycle (5E) model on the thematic learning theme 2 sub-theme 2 learning 1, obtain the average score of science process skills test. is 93,3 (Very Good). The results of the accumulation scores obtained in cycle II has reached the performance indicator ≥ 80 . Then the learning cycle II categorized to be successful. The data result of the science process skills accumulation score can be seen in Table 3.

Table 3. Accumulation of Science Process Skill Cycle II

No.	achievement	result
1.	Minimum Criteria	78
2.	Total Score	2611
3.	Class Average	93,3
4.	Highest score	99
5.	Lowest score	83
6.	Number of students completed	28
7.	Percentage of completeness	100%
8.	Number of students incompleted	0
9.	Percentage of incompleteness	0%

Based on data results from the

implementation of cycle II there was an increase compared with cycle I. All the indicators measured have already reached the performance indicators. The indicator which measured the average score of science process skills test and non-test that manages to reach the performance indicators. If the average score of students equal to or more than minimum criteria specified by school that is 78. In cycle I the average score of the accumulated student test and non-test is 77,3 (enough) increased to 93.3 (very good) in cycle II and have reached the performance indicators.

The second indicator measured is the percentage of students completeness who said to be successful if the percentage of completeness reaches 80% from number of students. The result is the percentage of completeness students in the first cycle is 75% and increased to 100% in cycle II, thus the percentage of mastery of the student has already managed to achieve the indicator of

the performance completeness. Overall, activities in the second cycle goes according to the plan. The third indicator measured is the score of teacher and students activities, the score can be categorized successful if the observation score of teachers and students activities reached 80. The result is the score of teachers activities in the first cycle reached 77,9 (enough) and increased to 91.6 (very good), then achieved the performance indicators have been determined. In the second cycle and observation of student activities increased from 76 (enough) on the cycle I to 90 (very good). Based on these results, the observation score of students activities already achieve the performance indicators specified.

The results of teacher activities observed and rated based on the teacher activity sheets used as indicators of the success in implementing Learning Cycle (5E) model, the result of which can be seen in Figure 1.

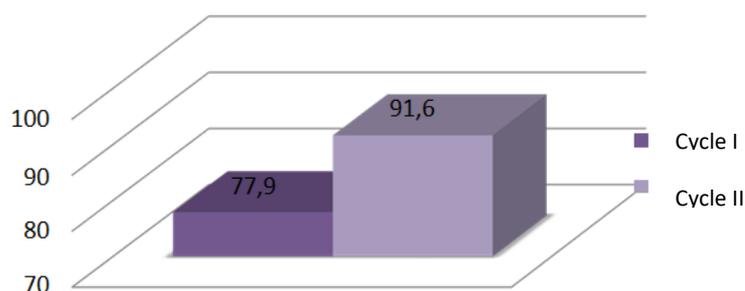


Figure 1. Observation of Teacher activity

Based on the Figure 1 there are increase of teacher activities from cycle I to cycle II. In cycle I the scores obtained by the teacher reached 77,9 categorized enough. It shows that the implementation of Learning Cycle (5E) model has not been done optimally, so the score of the teacher activities has not reached the performance indicators that have been determined. This is due to the teacher having some problems and constraints during the process of implementation of learning such as the lack of teacher's preparation in motivating students, lack of student motivation, lack of delivery of apperception, lack of concept implementation in everyday life, the use of learning media that are less concrete, less

conducive class, teachers role in guiding students, and in providing reinforcement and reflection. The efforts made by teachers to improve students ' motivation such as by asking questions that can increase motivation of students to receive lessons, like asking the news to the students, whether they had breakfast or not, they've learned or not, etc. These questions can later cause the enthusiasm of the students on the learning that will be delivered by the teacher. The enthusiasm indicates the levels of motivation of teachers and will increase the students' motivation in learning (Marno, 2017). In cycle II, the researcher and the class teacher do improvement efforts with regard to the result of the reflection of cycle I. In cycle II the

observation results of teacher activities has increased to 91.6, which is categorized very well and has reached the performance indicators that have been determined, i.e 80.

The observation result of student activities that observed and graded based on the activity sheets by the observer starting from cycle I to cycle II, shows the result of which can be seen in Figure 2.

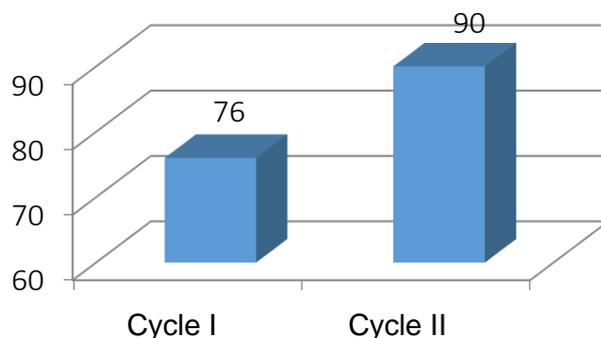


Figure 2. Observation of Students activities

Based on Figure 2 there is increase of students activities from cycle I to cycle II. In the first cycle the score of the activity of students achieving 76 which is categorized enough. In cycle II the observation results of student activities increased to 90 which is very good and has reached the performance indicators that have been seterminded i.e 80. Student activities that has increased is the aspect of answering the question and the apperception of teacher, cooperating and communicating with the group, writing a conclusion and communicating the knowledge they gained.

CONCLUSION

Based on the results of research and discussion that has been conducted in classroom action research, for improvement of science process skills theme 2 sub-theme 2 learning 1 learning model Learning Cycle (5E) on the students of Class IV-A MI Al-Ahmad Krian Sidoarjo, the conclusion is that science process skills of the students on the material of thematic learning theme 2 sub-theme 2 learning 1 apply the Learning Cycle (5E) model also increased from cycle I to cycle II. The accumulation result of the average science process skills has increased from 77,3 (enough) in the first cycle with the percentage of completeness reaches 75% (enough) and to 93.3 (very good) in cycle II with the percentage of completeness reaches 100% (very good) and have achieved performance indicators.

Based on the observation result of teacher activities which is carried out when the learning process occurs there is an increase of 77,9 (enough) in cycle I to 91.6 (Very good) and get the criteria very well. Based on the observation results of the teacher activities then it can be said that the implementation of Learning Cycle (5E) model in thematic learning theme 2 sub-theme 2 learning 1 can be categorized to be successful and achieve the performance indicators that have been determined. The observation data of student activities also increased from 76 (moderately) on a cycle I to 90 (very good) in cycle II.

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