Implementation Of The CLIS Model To Improve Student Learning Outcomes In Material Temperature And Changes

Dewi Diana Paramata[1), Tirtawaty Abdjul[2), Indriyani Bidara Kansil[3)

Department of Physics, State University of Gorontalo, Indonesia
Email:
[1)Correspondence email: dewiparamata@ung.ac.id
tirtaabjul@gmail.com
indribidara@gmail.com

ABSTRACT: This study aims to improve student learning outcomes on temperature and its changes by implementing the children learning in the science learning model. This type of research is a classroom action research model of Kemis and Taggart using two cycles: planning, implementing, observing, and reflecting. Students subject to action are class VIIB students of SMP Negeri 5 Gorontalo, the academic year 2019/2020, with several 30 people. The results showed that implementing the model of children learning in science could improve student learning outcomes; namely, in the first cycle, the percentage of learning completeness is still low and has increased in the second cycle. For the teacher activity, the total value of each aspect obtained is 76.7%. An increase in cycle II reached 83.4%, the aspect of student activity in cycle I was 9.67%, while in cycle II it increased by a percentage of 9, 81%, and student learning outcomes with an increase in the percentage of cycles I and II, from 66.6% to 96%. Based on this, it can be concluded that the implementation of the children learning in the science model can improve student learning outcomes.

Keywords: *Children Learning In Science (CLIS) Model,* and Student Learning Outcomes.

ABSTRACT

This study aims to improve students learning outcomes in temperature and its change material by implementing children learning in the science model. This research is a classroom action research using Kemmis and Taggart model with two cycles, and each cycle consists of planning, implementation, observation, and reflection. The subjects of this research are students in grade VIIB of SMP Negeri 5 Kota Gorontalo in the 2019/2020 academic year consist of 30 students. The result shows that the implementation of children learning in the science model can improve students' learning outcomes. In cycle one, the percentage of learning completeness is still low and has increased in cycle II. For the teacher activity, the total value in every aspect obtained cycle I is 76.7% and increased in cycle II to 83.4%, aspect of student activity in cycle I with the percentage of 9.67%, whereas in cycle II has increased to 9.81%. The percentage of student learning outcomes has increased in cycle I and cycle II, from 66.6% to 96%. For the reasons, it can be concluded that the implementation of children learning in the science model can improve students learning outcomes.

Keywords: Children Learning In Science (CLIS) Model, and Student Learning Outcomes

INTRODUCTION

Education is a conscious and planned effort to create an atmosphere of learning and the learning process to develop their potential actively. Schools are formal institutions that function to help parents, especially in providing formal education to their children. Education is the complete knowledge, skills, and attitudes of their students according to what they need. The government has enacted Law Number 20 of 2003 concerning the National Education System (SPN). Several academic potentials will be developed in the SPN Law, where this potential is related to character. The explained in article 3 of the SPN Law that "National education has the function of developing the capacity and formation of a noble national character and civilization in the context of the nation's intellectual life. They aim to develop the potential of students to become human beings who believe and fear God Almighty, with noble character. Healthy, knowledgeable, competent, and creative, independent, and a democratic and responsible country. " (1)

According to the Ministry of National Education (2006), science subject is a subject that is difficult to understand because there are many mathematical formulas and calculations in solving the problems in it. Science subjects are knowledge obtained through data collection by experimentation, observation, and deduction to produce a reliable explanation of natural phenomena. (2)

The involvement of students in teaching and learning activities is an essential aspect of the learning process; by involving themselves in teaching and learning activities,

students will be more actively interacting in learning, making it easier for students to master the material being taught. Student mastery of the material will have an impact on improving learning outcomes; in this case, students will achieve learning completeness. To achieve mastery learning, students must meet the mastery score in science subjects following the Minimum Completeness Criteria (KKM), namely 75. (3)

The reality in the field shows that the results of learning science lessons at SMP Negeri 5 Gorontalo City are more specific in terms of temperature and the changes are very low. The Field Experience Program (PPL) activity supported by the 2018/2019 academic year proves that student learning outcomes in this material were not as expected. The average value of the learning outcomes of all class VII-B students in the odd semester 2018/2019 academic year is 50.31.

Students' difficulty in learning science occurs because the lesson depends on how the teacher teaches the subject concerned to students. Teachers should change children's fear of science lessons to be happy to arouse student interest and activeness in following lessons. There are many ways for a teacher to deliver subject matter that can make students feel happy, including using models in learning. One of the learning models used is the Children Learning In Science (CLIS) learning model.

The CLIS model is a learning model that uses a constructivist approach. Tyler (in Bektisarso, 2000: 742) states that the CLIS model emphasizes student activities to perfect the achievement process in getting ideas, adapting to existing knowledge, solving and discussing problems that can arise so that students can express their opinions themselves before the teacher provides refinement of scientific ideas, students are led to the development of new ideas or more scientific ideas. (4)

According to Handayani et al. (2004: 39), that: the advantages of the CLIS learning model are as follows: (1) Children's ideas are easier to come up with, (2) Familiarize students with independent learning in solving a problem, (3) Four conditions changes in the conception put forward by Posner et al. are fulfilled, (4) Creating student creativity to learn to create a more comfortable and creative classroom atmosphere, cooperation between students and students are directly involved in carrying out activities, (5) Creating more meaningful learning because of its emergence. The students are proud to find the scientific concept they are learning on their own, (6) The teacher will teach more effectively because it can create a learning atmosphere that will be active and enjoyable. (4)

This is supported by previous research by Rustaman N, who argues that the application of the Children Learning in Science learning model can improve learning achievement outcomes in science subjects. The research target of Rustaman N is students of class X-5 SMA Negeri 3 Malang. From this research, Rustaman N concluded that; the application of the Children Learning In Science (CLIS) learning model assisted by SwisHmax has also been proven to improve students' science process skills. (5)

RESEARCH METHODS

This classroom action research consists of four stages: action planning, action, observation, and reflection. The research model used is the Kemmis class research model and the Mc Taggart model of Kemmis and Taggart. (Kusumah and Dwigatama, 2012: 20-21) (6)

This research was conducted at SMP Negeri 5 Gorontalo City which is located on Jalan Sultan Hasanudin No. 22 Kecamatan Kota Selatan, Kota Gorontalo. The subjects of this study were students of class VII-B, the 2019/2020 school year, with 30 students.

In the classroom action research process, data analysis is the main thing to get data from accurate results; in data analysis, it is expected to be carried out in stages at the end of the cycle used in this study. The data analyzed includes data from observations of teacher activities, student activities, and learning outcomes tests with data analysis techniques described as follows:

1. Learning outcomes
Following formula is used:

1. Individual completeness = $\frac{\textit{The total score obtained}}{\textit{Total score}} \times 100\%$

2. Classical completeness = $\frac{\textit{The number of students who completed}}{\textit{Total number of students}} \times 100\%$

3. Average value = $\frac{\textit{The sum of the scores of all students}}{\textit{Total Score}} \times 100\%$

2. Student Activity Observation Data
All data from observations of student activities were analyzed quantitatively by using a percentage of student activity activities during teaching and learning activities. For the percentage of success, the formula is used:

Percentage of each aspect $= \dfrac{\textit{The number of aspects obtained}}{\textit{The sum of the scores for all aspects}} \times 100\%$

3. Teacher Activity Observation Data

Data from the observation of teacher activities were analyzed using the percentage of teacher activity during teaching and learning activities. For the percentage of success, the formula is used:

Percentage of each aspect $=. \dfrac{\textit{The number of aspects obtained}}{\textit{The sum of the scores for all aspects}} \times 100\%$

(Purwanto, 2011: 102) (7)

RESULTS AND DISCUSSION

Implementing the learning model of children learning in science has been proven to improve learning outcomes based on previous research. The study aimed to improve learning implementation activities with cognitive evaluation through learning outcomes tests given to 30 students in Natural Sciences (IPA) subjects. . The results obtained from the first and second cycles are described below.

A. Cycle I
1. Teacher activities in learning

The teacher's observations made during the learning activities carried out as a researcher use the research instrument of the teacher's activity observation sheet. There are 13 observation aspects in the instrument, namely a). Preliminary activities include; provide perceptions, motivate students by asking questions, conveying learning objectives to be achieved, and informing the syntax of the learning model to be applied. b). The core activities include; provide material explanations, ask things that are not understood, ask questions to bring up students' ideas about the material, guide each study group in completing LKPD, and provide material explanations. c) closing activities include; guide students in making conclusions, giving homework, providing reinforcement to groups that have good performance, and reflecting on the learning process. Three observers made observations during the learning activity in the first cycle of 2 lessons. The results obtained from observations during learning activities take place, as shown in Figure 1.1.
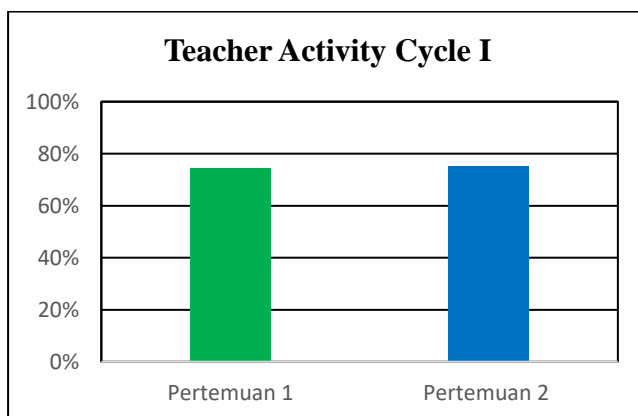

Figure 1.1 Teacher Activity Diagram Cycle I

The diagram shows the percentage achievement of each aspect of observation of the first and second meetings during the first cycle. Several aspects have been improved so that the achievements at the first and second meetings reached 74.2% and 75.1%.

2. Student activities in learning

Three observers observed the activities of students during the first cycle. The observer uses an instrument in the form of an observation sheet for the activities of students in the first meeting and the second meeting in cycle I. The instrument used contains 12 items of observation aspects consisting of a). Preliminary activities include; student readiness in learning, motivation in learning, listening to the learning objectives to be achieved, and understanding the steps of the learning model being applied. b). The core activities include; organize in study groups, receive explanations of learning materials, ask questions that are not yet understood, propose ideas/ideas on learning materials, do assignments / LKPD, and present the results of group discussions. c). Closing activities include; make conclusions from the material being taught and reflecting on the learning process. Observed during the learning activity with a learning model—each observer, observing the activities of students as many as ten students were observed. Observations made by observers of student activity are described in the following diagram 1.2.
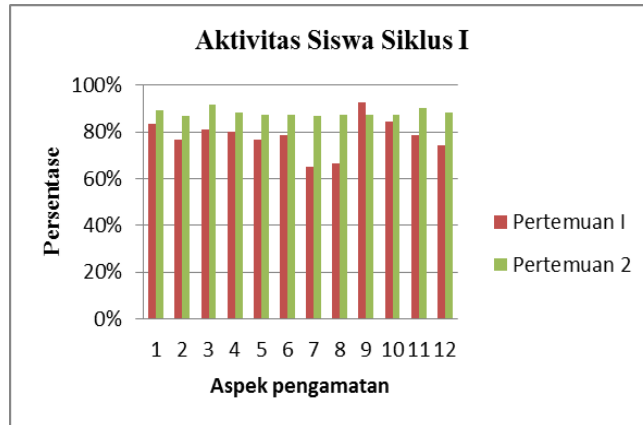
Figure 1.2 Diagram of Cycle I Student Activities

The diagram shows activities of students during the first cycle for the first and second meetings, namely with a percentage of 9.03% at the first meeting and increasing to 9.37% at the second meeting.

3. Student learning outcomes

The end cycle, of course, an evaluation carried to determine the achievements during the learning that have been used previously. Researchers conducted a cognitive evaluation of 30 students with temperature and change material. The instrument used in measuring students' learning achievement in the form of a learning result test contains ten items with Bloom's taxonomy level.

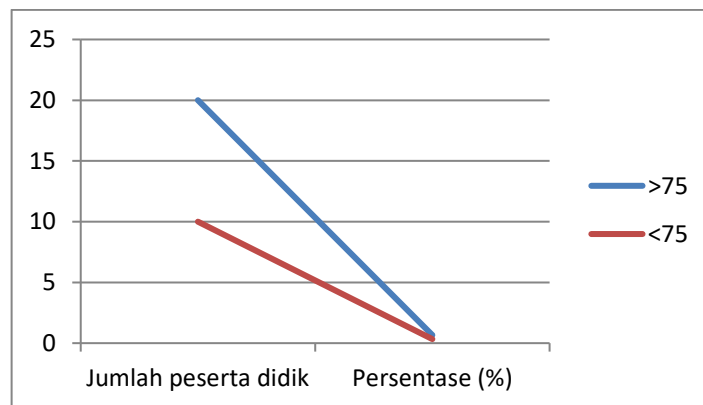**Percentage of learning outcomes in cycle I**

Figure 1.3 Results Diagram of Cycle I Learning

The diagram above shows the student learning outcomes during the first cycle with the acquisition of values ≥75 per cent who completed 66.6% and value ≥75 per cent who did not complete 33.33%.

B. Cycle II

1. Teacher activities in learning

Observation of the implementation of learning is carried out as observations made in the previous cycle, namely cycle I. This observation is carried out to determine the manifestation of the CLIS learning model into teaching and learning activities of researchers as subject teachers on temperature and its changes. Observations are made with the implementation of the observation sheet instrument or teacher activities to see the suitability made by the teacher with the learning model implemented during the learning activities. The observations were made two times the lesson in cycle II. The achievement of each aspect of observation is as shown in the diagram in Figure 2.1 below.
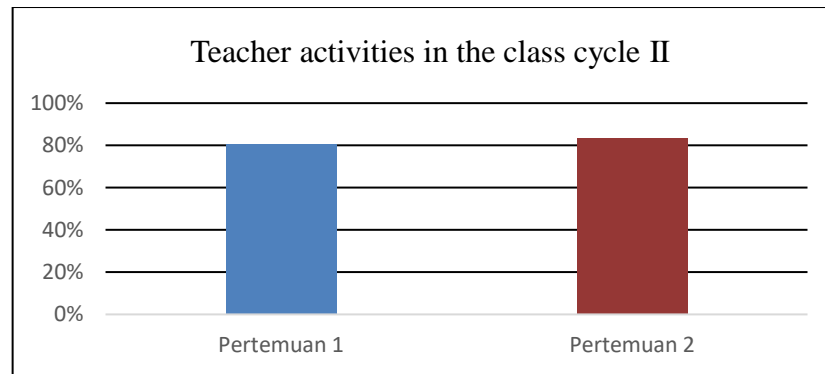
Figure 2.1 Activity Diagram of Cycle II Teachers

The diagram shows the percentage achievement of each aspect of observation of the first and second meetings during the second cycle. Several aspects have been improved so that the achievements at the first and second meetings reached 80.7% and 83.6%.

2. Student Activities

Observations were made to observe the activities of students using the instrument of the student activity observation sheet. Three observers every ten students total of 30 students. The instrument used is as in the first cycle, namely cycle I. The percentage of each practical aspect is shown in the diagram in Figure 2.2.
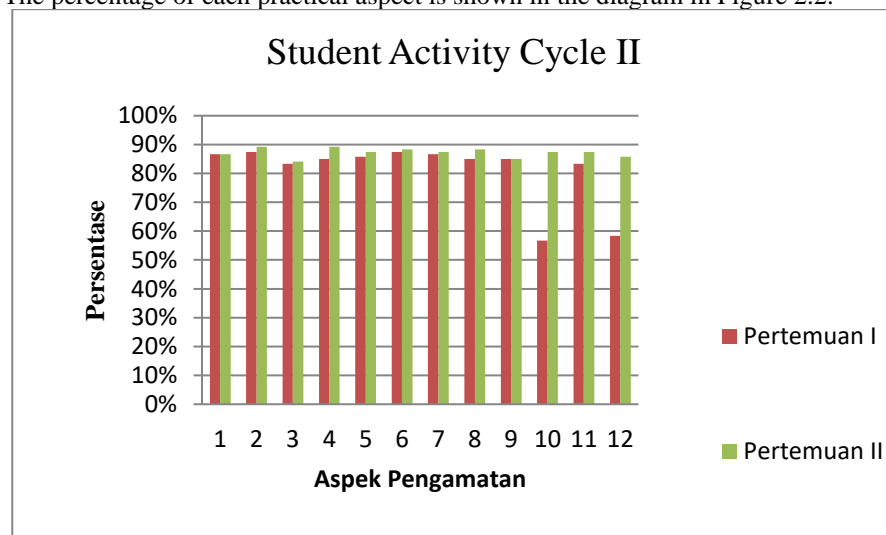

Figure 2.2 Diagram of cycle II student activities

The diagram shows activities of students during cycle II for the first and second meetings, namely with a percentage of 9.48% at the first meeting and increasing to 9.98% at the second meeting.

3. Student learning outcomes

The learning outcomes in cycle II were obtained in the previous cycle, namely by using a learning outcome test instrument consisting of 10 item description questions. The completeness of student learning outcomes can be seen from the cognitive achievement of students based on Bloom's taxonomic cognitive level. Following are the achievements of the percentage of students who have reached the minimum completeness standard.
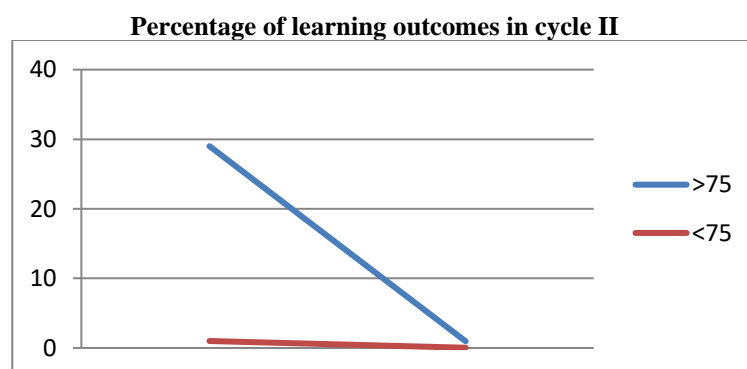

Figure 2.3 Learning Outcomes of Cycle II

The diagram above shows student learning outcomes during the first cycle with the acquisition of values ≥75 per cent complete 96%, and value ≥75 per cent unfinished 3.3%.

Learning outcomes are an essential component in learning activities to see student success in the learning activities they have been through. The achievements obtained for the learning outcomes of cycle I, some students were complete and incomplete. In cycle II, student learning outcomes have an increase in learning completeness, which is very much different compared to the completeness of learning outcomes in cycle I. The cycle of learning, success occurs in cycle II because of the willingness of students so that they can create progress or increase in learning outcomes. . This is in line with opinionHamalik (2006), illustrates that the learning outcomes obtained can be measured through the progress obtained by students after studying seriously. Learning outcomes appear to be behavioural changes in students that can be observed and measured through changes in attitudes and skills. These changes can be interpreted as an increase and better development than before.

Learning outcomes are the result of an interaction of learning and teaching actions. From the teacher's point of view, teaching ends with a process of evaluating learning outcomes. Meanwhile, from the student's point of view, learning outcomes represent the end of the experience and the culmination of the learning process. (Dimyati 2006: 3), therefore learning outcomes are the final results in

learning activities, including teacher activities and student activities. (8)

Teacher activity is an essential part of learning. In this study, the activities of the teacher as a researcher were made by using observation sheet instruments. Teaching and learning activities; the teacher needs to pay attention to the scenario of the learning process, starting when opening and closing learning, paying attention to the syntax of the learning model to be used, skills guiding study groups, following Mukminan (2013) opinion, which states that basic teaching skills are the skills or abilities of the teacher in explaining concepts related to learning material. Thus a teacher must have teaching preparation, including mastering learning materials, choosing strategies, methods and media, good classroom mastery, and determining the appropriate assessment system. (9)

Teacher activities in learning will not be carried out without students who support the learning process. Student activities need to be considered in learning. As can be seen from the increase in the first and second cycles, students need to be considered when students have difficulty answering perceptions. It is difficult in concluding the material; it is even challenging to interact in study groups (doing experiments and analyzing the results of the experiment through the questions in the LKPD). This is following the opinion Wahyuningsih and Murwani (2015), who say that student learning activities are an essential element that is important for the success of the learning process. Through activities, students will be able to understand the lessons from their experiences to enhance their learning outcomes (10).

CONCLUSION

From the description of the analysis of the research results and the discussion of this research, the implementation of learning cycle I and cycle II respectively uses the CLIS learning model with temperature learning materials and its changes. The achievement of learning outcomes assessed through teacher activity, student activities, and student learning outcomes in the two different cycles, namely as follows: The results showed that implementing the model of children learning in science, student learning outcomes can be increased, namely in cycle I the percentage of learning completeness is still low and has increased in cycle II: 1)For teacher activity, the total value of each aspect obtained in cycle I was 76.7%, and an increase in cycle II reached 83.4% 2) aspects of student activity in cycle I with a percentage of 9.67% while in cycle II is increased by a percentage 9.81%. 3) student learning outcomes with a percentage increased the cycles I and II cycles, from 66.6% to 96%. To shows that implementing the Children Learning in Science (CLIS) learning model can improve student learning outcomes on temperature and the change.

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