Application of the Student Teams Achievement Division (STAD) Type Cooperative Learning Model to Improve Science Learning Outcomes of Class VIII Students at UPTD SMP Negeri 1 Alasa for the 2022/2023 Academic Year

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Abstract

Based on the results of initial observations at SMP Negeri 1 Alasa, several problems were found, namely: 1) Students were not actively involved in learning activities, and 2) Student learning outcomes in science subjects were still low. Research objectives: (1) Describe the implementation of the learning process through the application of cooperative learning models of the Student Teams Achievement Division type. (2) Describe student learning outcomes through the application of cooperative learning models of the Student Teams Achievement Division type. The research location is at SMP Negeri 1 Alasa. The research subjects were 30 students in class VIII-4, consisting of 16 boys and 14 girls. The research method used was classroom action research which consisted of four stages: (1) Planning, (2) Action, (3) Observation, and (4) Reflection. Research instruments: (1) observation sheet, (2) learning quality questionnaire, (3) student learning achievement test, (4) interview guide sheets, and (5) photo documentation. The results of the study: (1) Implementation of the learning process through the application of the Student Teams Achievement Division cooperative learning model in science subjects in Cycle I, namely 45.14% with poor criteria and Cycle II, namely 81.25% with good criteria. (2) Student learning outcomes through the application of the cooperative learning model type Student Teams Achievement Division in science subjects in Cycle I, namely 68.33 with sufficient criteria and Cycle II, namely 80.67 with good criteria.
Keywords: Student Teams Achievement Division and Learning Outcomes

INTRODUCTION

Education is a process in life that is very important in creating reliable and professional human resources. Education has a very decisive role as a vehicle for humanizing humans as a whole. Through education an intelligent, independent and creative generation can develop, as well as the formation of a dignified national character and civilization. For this reason, education is a joint responsibility of the government, society, as well as schools and teachers. In general, education takes place in schools in the form of teaching and learning activities between teachers and students. In the learning process the teacher is a very important component, because the success of the educational process is very dependent on the learning process designed and carried out by the teacher. Students learn a lot is determined by how the teacher implements learning. The teacher's task in this case is to manage learning actively and creatively so that learning causes changes in students both in cognitive, affective and psychomotor aspects as a result of students' responses to the stimulus received. With regard to these duties and responsibilities, teachers are expected to be able to choose appropriate learning strategies or methods so that they can actively involve students in learning to achieve predetermined competencies.

The 2013 curriculum is the curriculum that applies in the Indonesian education system. This curriculum is a curriculum implemented by the government to replace the 2006 curriculum, in which students are more active in the learning process and teachers use learning models that are appropriate to the material to be taught. Thus, the 2013 Curriculum is designed with the aim of preparing students to have the ability to live as individuals and citizens who are faithful, productive, creative, innovative and effective, and able to contribute to the life of society, nation and state.

Science learning basically has specific scientific characteristics that are different from other sciences. In accordance with the nature of science learning which refers to processes, products and scientific attitudes, science learning should ideally be able to provide a variety of learning experiences to understand science concepts and processes. These process skills include observing skills, submitting hypotheses, using tools and materials properly and correctly by always considering work safety and security, asking questions, classifying and interpreting data, and communicating findings orally or in writing, digging and sorting out relevant factual information. to test ideas or solve everyday problems.

Based on the results of a preliminary study conducted by prospective researchers at UPTD SMP Negeri 1 Alasa on January 24 2022 found several problems during the learning process activities. When learning activities take place students are less actively involved in learning activities. The delivery of subject matter to students is still dominant using conventional learning models, which means that learning is only teacher-centered. Students are less courageous in expressing opinions/questions. Students look less prepared in following the learning process. During the learning process activities the teacher rarely uses learning media, then the facilities and infrastructure needed to support the implementation of learning process activities are still limited. Based on the problems described above, the best solution in overcoming some of these problems is that the teacher must be able to find the best way to increase student involvement in learning process activities. One solution is to apply a cooperative learning model of the Student Teams Achievement Division (STAD) type.

The STAD type cooperative learning model is a learning model that is useful for fostering the ability to cooperate, be creative, think critically and have the ability to help friends and is a very simple cooperative learning. According to Nurhadi, et al., in Ade and Septi (2017: 50) put forward the advantages of the STAD type cooperative learning model, namely: (1) Students are more able to listen, accept, and respect others, (2) Students are able to identify their feelings as well as other people's feelings. others, (3) Students can receive experience and be understood by others, (4) Students are able to convince themselves for others, (5) Students are able to develop individual potential. In accordance with the description above, it can be concluded that through the application of the cooperative learning model type Student Teams Achievement Division (STAD) it is hoped that it will be able to train and develop students' abilities to learn, so that through this model it will be able to stimulate students' thinking skills to be good. The objectives in carrying out this research were: To describe the implementation of the learning process through the application of the Student Teams Achievement Division (STAD) cooperative learning model in science subjects. Describe student learning outcomes through the application of the cooperative learning model of the Student Teams Achievement Division (STAD) type in science subjects.

RESEARCH METHODS

In carrying out this research, researchers used the Classroom Action Research (PTK) method, so that the objects of action were: the application of the cooperative learning model of the Student Teams Achievement Divisions (STAD) type and student learning outcomes in science subjects. The research location was UPTD SMP Negeri 1 Alasa, Alasa District, North

Nias Regency, North Sumatra Province. The research subjects were class VIII-4 students with a total of 30 people. This research was carried out in the odd semester of the 2022/2023 school year and adjusted to the schedule of science subjects. The duration of the research was approximately 1 month and each cycle held 3 meetings and one additional meeting for the end of the cycle. To collect data in this study used several research instruments. The research instruments used are as follows:

1. Observation sheet. Observation sheets are used to observe the learning process in class. This observation sheet was filled in by the science subject teacher as an observer. The observation sheets used by researchers include: Observation Sheets for the Learning Process (Teacher Respondents) and these observation sheets are used to collect data on the implementation of learning process activities carried out by researchers in the classroom. Student Activity Observation Sheet, Student activity observation sheet is a sheet that contains guidelines for carrying out observations of student activities during the learning process activities taking place in the classroom. Student Observation Sheets Who Are Not Actively Involved, This observation sheet is used to collect data about students who are not actively involved in the learning process. The grid or indicators in carrying out observations of students who are not actively involved are according to Isnawati, (2019: 5), namely: (1) noisy, (2) doing other assignments, (3) sleepy, (4) going in and out of class, (5) disturbing other students, (6) daydreaming, (7) being nosy, (8) scribbling on paper, (9) playing cellphones/games, and (10) moving seats. Based on the grid or indicators above, the researcher will use these indicators in carrying out observations of students who are not actively involved in the learning process activities.

2. Student Learning Outcomes Test. Learning outcomes test is used to determine the increase in student learning outcomes. Before the learning outcomes test is used as a research instrument, validation is carried out first and the instrument is tested.

3. Learning Quality Questionnaire Sheet. The learning quality questionnaire is an instrument for measuring the quality of learning which is arranged in the form of an objective questionnaire, where the respondents, in this case, are students who will be given a number of questions. Learning quality questionnaires were distributed to students (respondents) at the end of each cycle.

Research Design

In the implementation of this research will consist of 4 (four) stages, namely: planning, implementation, observation and reflection. Of the four stages, the actions in their implementation are as follows:

1. Planning (Planning), For each meeting, the researcher prepares: Prepares learning tools such as syllabus and lesson plans. Prepare learning materials and determine the topics of discussion in the learning process activities. Prepare the learning media that will be needed. Prepare observation sheets (observations), which consist of: Observation sheets of the learning process (teacher respondents). Student activity observation sheet. Observation sheets of students who are not actively involved. At the end of each cycle, the researcher prepares: Learning achievement tests, Learning quality questionnaires, Documentation (Photos).

2. Implementation (Action). The implementation of this research began in September s.d. October 2022. Researchers carry out learning activities by applying the cooperative learning model of the Student Team Achievement Divisions (STAD) type in accordance with the plans that have been prepared by the researchers. Implementation of cycle I consisted of 3 meetings plus 1 meeting at the end of the cycle. In each meeting, learning was carried out using the cooperative learning model of the Student Team Achievement

Divisions (STAD) type, while cycle II was carried out if the reflection results of cycle I did not reach the predetermined targets. Then in cycle II, 3 meetings were held plus 1 meeting at the end of the cycle. If the reflection results of cycle II have reached the target, the problem is resolved and research findings are formulated. If the reflection results of cycle II are not achieved, the problem has not been resolved and it is continued in the next cycle.

3. Observation (Observation). During the learning process, the science subject teacher acts as an observer by observing/assessing the suitability of the steps for implementing the cooperative learning model of the Student Team Achievement Divisions (STAD) type and paying attention to student activity during the learning process activities using observation sheets, while conducting interviews and giving the questionnaire will be carried out by the researcher at the end of each cycle.

4. Reflection (Reflection). Reflection is done at the end of each meeting and at the end of each cycle. Reflecting on the results or processing the results of observations made by observers concerning research instruments consisting of: At the end of each meeting, researchers as teachers recapitulate the results of observations of research instruments consisting of: Observation sheets of the learning process (teacher respondents), Observation sheets of student activities, Observation sheets of students who are not actively involved. At the end of each cycle, the researcher as the teacher recapitulates the results of observations of the research instruments which consist of: Learning achievement tests. Learning quality questionnaire. Documentation.

Action Implementation

In accordance with what was stated from the beginning, that this research was conducted in 2 cycles, with the following description:

1. Cycle I (First). The first cycle consists of 3 meetings plus 1 meeting for the end of the cycle. In each meeting, learning was carried out using the cooperative learning model of the Student Team Achievement Divisions (STAD) type, where the steps of the learning process are listed in the lesson plan. During cycle I, the subject teacher as an observer will fill out the observation sheet according to the learning steps taken while the researcher acts as a teacher. After cycle I ended, an evaluation was then carried out by giving a learning achievement test to find out whether the learning outcomes had reached the KKM, and then holding a questionnaire and conducting interviews. Based on the reflection results of cycle I, the deficiencies or weaknesses in the reflection results of cycle I will be perfected in cycle II.

2. Cycle II (Second). After evaluating the results of the implementation of the first cycle, if it still does not achieve the expected results, then proceed to the second cycle. In the implementation of the second cycle consists of 3 meetings plus 1 meeting at the end of the cycle to administer the learning outcomes test. The action in cycle II is to perfect the deficiencies in the previous meeting.

RESEARCH RESULTS AND DISCUSSION

This research was conducted at Alasa 1 Public Middle School, located in Ombolata Village, Alasa District, North Nias Regency. The research subjects were 30 students in class VIII-4, consisting of 16 boys and 14 girls. Before the research was carried out, the researcher first collaborated with the Principal of SMP Negeri 1 Alasa and with his approval the research could be carried out and the researcher collaborated with the science subject teacher. The implementation of this research includes four stages: planning, action, observation, and reflection. The research was carried out using the services of an observer or observer, namely a science subject teacher who assisted in carrying out observations during the research, so

that this research activity could be carried out properly. Research activities are carried out to coincide with science class hours and do not interfere with the implementation of other learning processes and researchers as well as practitioners do not need to leave the classroom where they teach. This research begins on October 10 to November 21, 2022. Classroom action research on science learning will apply a cooperative learning model of the Student Teams Achievement Division (STAD) type which aims to improve the quality of learning and student learning outcomes in science subjects.

Cycle I
1. The first meeting, Cycle I. The implementation of the learning process activities at this meeting is still lacking, this is in accordance with the results of observations of the learning process (teacher respondents) obtained an average observation result of 1.42 and the percentage of observations is 35.42%. . Then the results of observations of students who were actively involved in the learning process obtained the percentage of 55.42%, this result showed that students were not fully involved in participating in the learning process activities. In the observation results section of students who are not actively involved in the learning process, the percentage of observations is 20%. At this meeting there were 6 students who were not actively involved, namely there were students who were noisy, sleepy, going in and out of class, and changing seats. The solution in overcoming this problem is that researchers will advise students who are not active during the learning process activities.
2. Second Meeting, Cycle I. At this meeting the implementation of learning activities has not been carried out optimally. In accordance with the results of observations of the learning process (teacher respondents) the average observation result was 1.75 and the percentage of observations was 43.75%. Then the results of observations of students who were actively involved in the learning process activities, the percentage of which was 64.17% was classified as sufficient criteria. The results of observations of students who were not actively involved in the learning process activities obtained the percentage of observations, namely 16.67%. At this meeting there were 5 students who were less actively involved, namely there were students who were noisy, doing other assignments, and there were students who were sleepy.
3. Third Meeting, Cycle I. At this meeting the implementation of the learning process activities underwent changes compared to the previous meeting. In accordance with the results of observations of the learning process (teacher respondents) the average observation result was 2.25 and the percentage of observations was 56.25%. Then on the results of observations of students who are actively involved in the learning process activities the percentage is 68.75%. These results indicate that there has been an increase in students who are actively involved in learning activities. Furthermore, the results of observations of students who were not actively involved in the learning process obtained the percentage of observations, namely 13.33%. At this meeting there were 4 students who were less actively involved, namely there were students who were noisy, going in and out of class, there were students daydreaming, and disturbing other students.
4. End of Cycle I. At the end of Cycle I, the percentage of the learning quality questionnaire was obtained, namely 64.09%, which was classified as sufficient criteria. Then the percentage of completeness of student learning outcomes is 56.67% while the percentage of students who do not complete is 43.33%, and the average student learning outcomes is 68.33 belonging to the sufficient criterion.

According to the recapitulation results, the average reflection result at the end of Cycle I was 57.17%. These results indicate that the implementation of Cycle I still has not met expectations, which means that the problems in Cycle I have not been resolved, so that it will continue in Cycle II. Some of the weaknesses found in the implementation of Cycle I were due to several things, which included:

1. The teacher's ability to master learning material is still lacking.
2. The ability to organize learning tasks in the application of the cooperative learning model of the Student Teams Achievement Division type is still lacking in every activity of the learning process.
3. The teacher's ability to control the class is still lacking.
4. Researchers still lack mastery over all stages of implementing the cooperative learning model of the Student Teams Achievement Division type.
5. The ability to solve problems in the application of the cooperative learning model type Student Teams Achievement Division is still lacking.
6. The ability to provide feedback and evaluate learning activities is still not optimal.

Based on some of the weaknesses above, the researchers took corrective actions which included:

1. Prepare well in mastering the subject matter to be taught.
2. Prepare yourself well in mastering the stages of implementing the cooperative learning model of the Student Teams Achievement Division type.
3. Prepare yourself well in organizing learning tasks in the application of the STAD type cooperative learning model.
4. Always motivate students to be more actively involved in participating in the learning process.
5. Prepare yourself well in mastering the class and in using learning media.
6. Improving the ability to provide feedback and evaluate learning activities optimally.

Cycle II

1. First Meeting, Cycle II. At this meeting the implementation of learning has experienced a good improvement compared to the previous meeting. In accordance with the results of observations of learning process activities (teacher respondents) the average observation result was 2.92 and the percentage of observations was 72.92%. Then the results of observations of students who are actively involved in the learning process activities are 75.42%. Based on these results it can be concluded that some students have begun to be able to be actively involved in participating in the learning process. Furthermore, the results of observations of students who were not actively involved in the learning process obtained the percentage of observations, namely 13.33%. At this meeting there were still 4 students who were not actively involved, namely there were students who were noisy and doing other assignments.
2. Second Meeting, Cycle II. At this meeting the implementation of learning has increased compared to the previous meeting. In accordance with the results of observations of the learning process (teacher respondents) the average observation result was 3.17 and the percentage of observations was 79.17%. Then the results of observations of students who were actively involved in the learning process activities were 80.83%. Based on these results it can be concluded that there is an increase in students who are actively involved in participating in the learning process. Then on the results of observations of students who were not actively involved in the learning process, the percentage of observations was

obtained, namely 10%. At this meeting there were still 3 students who were not actively involved, namely there were students who were noisy, sleepy, and in and out of class.

3. Third Meeting, Cycle II. At this meeting the implementation of learning has increased compared to the previous meeting. In accordance with the results of observations of the learning process (teacher respondents) the average observation result was 3.67 and the percentage of observations was 91.67%. As for the results of observations of students who were actively involved in the learning process activities, namely 88.75%. Based on these results it can be concluded that there is an increase in students who are actively involved in participating in the learning process. Then the results of observations of students who were not actively involved in the learning process obtained the percentage of observations, namely 6.67%. At this meeting there were still 2 students who were not actively involved, namely there were students who daydreamed and disturbed other students.

4. End of Cycle II. At the end of Cycle II, the percentage of the learning quality questionnaire was obtained, namely 95.44%, classified as very good criteria (Appendix 33.c). Then the percentage of completeness of student learning outcomes is 86.67% while the percentage of students who do not complete is 13.33% and the average student learning outcomes is 80.67 belonging to good criteria. According to the recapitulation results, the average reflection result for the end of Cycle II was 86.26%. These results indicate that the implementation of research in Cycle II has been achieved and has met expectations, and in the results of interviews stated that students are happy and interested in participating in learning activities through the application of the Student Teams Achievement Division type cooperative learning model because through the application of the Student Teams Achievement Division learning model students can be actively involved in learning activities so that student learning outcomes are good and the quality of learning is good. So, it can be concluded that the implementation of Cycle II has met expectations so that this research has been achieved optimally.

CONCLUSION

Based on the processing and analysis of research data that has been carried out, the researchers conclude as follows: Implementation of the learning process through the application of cooperative learning models of the Student Teams Achievement Division type in science subjects in Cycle I, namely 45.14% with less criteria and Cycle II, namely 81.25% with good criteria. Student learning outcomes through the application of the cooperative learning model type Student Teams Achievement Division in science subjects in Cycle I, namely 68.33 with sufficient criteria and Cycle II, namely 80.67 with good criteria. Based on the research results, the author's suggestions are: Teachers should use the Student Teams Achievement Division cooperative learning model because it is able to develop students' attitudes and skills in critical thinking and mutual respect for each other. A teacher who wants to apply the Student Teams Achievement Division cooperative learning model must fully master the implementation stage in order to obtain optimal results.

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