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Application of the Cooperative Learning Learning Model to Improve Student Learning Outcomes in Basic Competencies Understanding Occupational Safety and Health and the Environment (K3LH) in Building Work at SMK Negeri 2 Mandrehe for the 2022/2023 Academic Year

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Abstract

The problem in this study is that the application of the Cooperative learning learning model has not been implemented optimally so that student learning outcomes in the Basic Competencies of Understanding Occupational Safety and Health and the Environment (K3LH) in Building Work do not meet the KKM standard of 70. The purpose of this study: (1) To describes the implementation of the learning process by applying the Cooperative Learning learning model. (2) To find out the increase in student learning outcomes in the Basic Competencies of Understanding Occupational Safety and Health and the Environment (K3LH) in Building Work in Class X DPIB SMK Negeri 2 Mandrehe. This research is Classroom Action Research (CAR). This research was conducted at SMK Negeri 2 Mandrehe with the research subjects being class X students of the Department of Building Modeling and Information Design (DPIB) semester I of the 2022/2023 Academic Year with a total of 12 students. Research instruments (1) Observation sheet, consisting of (a) Student activity observation sheet in the learning process (b) Observation sheet in the learning process of teacher respondents. (2) Student learning outcomes test, and (3) Photo documentation. The results of the study: (1) in the first (first) cycle, the average observation of the learning process (teacher respondents) was 74.99%, (2) the average percentage of observations of students' activeness in the learning process, namely 48.54%, had not reached the target set determined, the average student learning outcomes is 66.89 classified as sufficient category, the percentage of student learning completeness is 41.66%. (2) in cycle II (second)) the average observation of the learning process (teacher respondents) was 83.92%, (2) the average percentage of observations of students' activeness in the learning process was 812.95% had not reached the target set, the average student learning outcomes, namely 84.19, are classified as good categories, the percentage of student learning completeness is 100%, has reached the set target of 70%. From the research findings above, it can be concluded that applying the Cooperative Learning learning model to the Basic Competencies of Understanding Occupational Safety and Health and the Environment (K3LH) in Building Work can improve student learning outcomes for Class X-DPIB SMK Negeri 2 Mandrehe in the 2022/2023 Academic Year.

Keywords: Cooperative Learning Learning Model, Student Learning Outcomes

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INTRODUCTION

One reflection of the quality of education in schools is student learning outcomes achieved by students in these schools. The acquisition of learning outcomes is largely determined by whether the activities in learning are good or not as long as the educational program is carried out in class which in reality is never free from problems. The problem of the teaching and learning process generally occurs in the classroom, the class in this case can mean all the activities carried out by the teacher and his students in a room in carrying out teaching and learning activities. Classes in a broad sense include the interaction of teachers

and students, teaching and learning techniques and strategies, curriculum implementation and evaluation. Thus student learning outcomes in one particular subject is one indicator of the quality of education in the school concerned. Kunandar (2015: 62) states that "Learning outcomes are competencies or abilities about both cognitive, affective and psychomotor that are achieved or mastered by students after participating in the teaching and learning process".

Education is always undergoing renewal in order to find an effective and efficient curriculum structure, education system and teaching methods. These efforts include improving curriculum facilities and infrastructure. According to Agung Hartono (2018: 132) "Education is a directed process of child socialization". In the Law of the Republic of Indonesia Number 20 of 2003 concerning the national education system that: National education states that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by himself, the community, the nation, and the State.

Education can be interpreted as a process of changing the behavior of students so that they become adults who are able to live independently and as members of society in the surrounding natural environment where the individual is located. Education that is able to support development in the future is education that is able to develop the potential of students, so that those concerned are able to own and solve the educational problems they face. The concept of education is increasingly important when someone has to enter life in society and in the world of work, because someone has to enter life in society and the world of work, because the person concerned must be able to apply what is learned in school to deal with problems faced in everyday life. currently or in the future.

Vocational high schools must have competence in accordance with their majors when entering the world of work. One of the subjects in vocational high schools, especially at SMK Negeri 2 Mandrehe, is the Basics of Building Construction and Soil Measurement Techniques. This subject is very important to be mastered by students because it relates to the world of work. Realizing the goals of national education teachers must strive to improve student learning outcomes by using learning models, learning methods, learning strategies, and learning approaches in accordance with applicable curriculum guidelines. According to Sunarto and Agung Hartono (2018: 121) that: "talent allows a person to achieve achievements in a certain field, but training, knowledge, experience and encouragement or motivation are needed so that this can be realized". To find out the potential of students, teachers can use evaluation of learning outcomes as a basis for consideration.

Based on the results of observations of researchers at SMK Negeri 2 Mandrehe Class X competence in building information and modeling design expertise in the basics of building construction and surveying techniques on competency standards in understanding occupational safety and health and the environment (K3LH) in building work, from short interviews with several class X DPIB students, the researcher obtained information that one of the factors for student learning difficulties lies in the lack of understanding of the delivery of learning material delivered by the teacher. The learning method that is often used is the lecture method which is still very conventional. While the Cooperative Learning learning model has not been optimally applied to learning the basics of building construction and surveying techniques, thereby reducing student activity in the learning process which results in student learning outcomes not meeting the Minimum Completeness Criteria (KKM), namely 70. Short interviews conducted with eye teachers lesson, providing information that there are still many students who do not have textbooks on understanding occupational safety and

health and the K3LH environment in building work regarding explaining occupational safety and health procedures and protecting the environment in building work due to inadequate supporting book facilities. In order to be able to convey lessons well so that students can more easily understand lessons, a teacher besides having to master the material, he is also required to be skilled in choosing and using the right teaching model for the situations and conditions he faces. A teacher is highly demanded to be able to have a general understanding of his weaknesses.

Seeing the conditions above, the learning that occurs has not shown the maximum student learning activity. Of course, if this is allowed to continue, it will result in students becoming more passive and lazy to learn, especially the basics of building construction and land surveying techniques. To address this problem in the teaching and learning process, it is necessary to find an alternative to increase student learning activities and outcomes, so that they can achieve the expected learning objectives. Efforts made to improve student learning outcomes and student activities are by using learning models, one of which is to improve the learning process by applying the Cooperative Learning learning model.

According to Aris Shoimin (2017: 45), "Cooperative Learning learning model is a learning model in which students study in small groups that have different ability levels. In completing group assignments, each group member works together and helps to understand a learning material. Learning is not finished if one of the friends in the group has not mastered the lesson material. Through this learning model, students are trained to share knowledge, experiences, assignments and responsibilities. So, the cooperative learning learning model is a learning activity by means of groups to work together to help each other construct concepts and solve problems. This can increase student learning motivation and be more active in mastering subject matter so that later student learning outcomes increase and learning can run effectively.

The purpose of this research is to: Describe the learning process in the basic competencies of understanding occupational safety and health and the environment (K3LH) in building work by applying the Cooperative Learning learning model at SMK Negeri 2 Mandrehe in the 2022/2023 academic year. To find out the results of increasing the learning of class X students of SMK Negeri 2 Mandrehe on the basic competencies of understanding occupational safety and health and the environment (K3LH) in building work through the Cooperative Learning learning model

RESEARCH METHODS

This type of research is Classroom Action Research (CAR). This research was conducted with the aim of improving the learning process in order to achieve maximum learning objectives. Therefore, the object of this research action is: Application of the Cooperative Learning Learning Model in the Basic Competencies of Understanding Occupational Safety and Health and the K3LH Environment in Building Work. Improving student learning outcomes in basic competencies Understanding occupational safety and health and the environment (K3LH) in building work. The location of this research was carried out at SMK Negeri 2 Mandrehe which is located in Tetehosi Village, Mandrehe District, West Nias Regency. The subjects of this study were 12 students of Class X Semester 1 of the Modeling Design and Building Information Expertise Program at SMK Negeri 2 Mandrehe.

In accordance with the plan, this action research was carried out in the odd semester of the 2022/2023 school year, namely in July-August 2022. For the implementation of this research, schedule it according to the schedule set by the school so that teaching and learning activities run according to schedule and material learning can be achieved. The duration of the

action in this study was carried out for about two months. For the implementation of the action in each cycle, 2 meetings are planned and 1 meeting is given for the achievement test. The time allocation for each meeting is 3 x 45 minutes. For data collection in this study, research instruments were used, as follows:

1. Observation. Observation is used to observe the learning process in class. As for the observation sheet that the researcher used as an instrument, namely: Observation of the learning process for teachers. This observation was used to find out about the teacher's activities in implementing the learning process. Observation of students in the learning process. This observation is used to determine the activity of students in learning activities.
2. Interview. the interview is a direct communication conducted by the interviewer to obtain information from the interviewee in the form of questions used to find out how students respond to learning carried out using the Cooperative Learning learning model.
3. Photo documentation. This instrument is in the form of photos about the implementation of learning. Documentation is used to show a concrete picture of the implementation of the learning process.
4. Learning Outcomes Test. The learning outcomes test is in the form of a subjective description test arranged based on the test grid. Before the test is used as a research instrument, it must first be validated by an experienced subject teacher and tried out in a different school or class with the test requirements.

As for the actions or stages in implementing Classroom Action Research (CAR), as follows: Planning (Planning), each meeting prepares: Prepares a learning implementation plan (RPP) that is in accordance with the Cooperative Learning learning model, Prepares observation sheets, Interview guide sheets, Worksheets Students, Prepare learning result tests, Documentation/photos, Actions (Action), Implementing action, namely learning activities by applying the Cooperative Learning learning model, Observation Stage, Subject teachers as observers paying attention to the suitability of learning steps through the Cooperative Learning learning model carried out by researchers during the learning process takes place by filling in the observation sheet. Reflection. Based on the results of interview observations and evaluation of student learning outcomes, researchers and teachers hold discussions to reflect on weaknesses and successes and restate what has been done in the implementation of each cycle.

This research was conducted in two cycles. The first cycle uses the Cooperative Learning learning model. The second cycle was carried out based on the reflection of the first cycle. Implementation of the first cycle and the second cycle will be described as follows:

1. Cycle I (First). The first cycle consisted of 2 meetings and 1 meeting for the learning outcomes test. Each meeting is carried out using the Cooperative Learning learning model. Where the learning steps are listed in the lesson plan. During cycle I, the subject teacher as an observer fills out a sheet containing observations in accordance with the learning steps taken while the researcher acts as a teacher. At the last meeting of cycle I, a learning achievement test was carried out. From these tests obtained data about learning outcomes. If the target has been completed, the action research activity is complete, but if it is still not finished, the weaknesses and deficiencies in the implementation of learning with the Cooperative Learning learning model are stated, which will be perfected in cycle II.
2. Cycle II (Two). By evaluating the results of the implementation of the first cycle, if it turns out that it has not achieved the maximum results as previously expected, then it will be continued in the next cycle without ignoring the steps in the previous cycle that were taken in the first cycle and added with other actions that are deemed capable. support learning success.

RESEARCH RESULTS AND DISCUSSION

This classroom action research was carried out at SMK Negeri 2 Mandrehe which is located in Tetehosi Village, Mandrehe District, West Nias Regency. The research subjects were class X students of SMK Negeri 2 Mandrehe with a total of 12 people in the building information and model design expertise program (DPIB). Before the research is carried out, the researcher can consult first with the head of SMK Negeri 2 Mandrehe and with his approval to do the research.

This classroom action research was conducted using the Cooperative Learning learning model. The application of the Cooperative Learning learning model in this study shows an increase in student learning outcomes, improvement in the learning process, and learning that is carried out to become student-centered. The research was conducted using the services of an observer, a productive subject teacher who assisted in observing both students and researchers during the research to ensure that the research was carried out properly. Research activities are carried out in conjunction with productive learning and do not interfere with other learning processes.

The discussion of research results is for the discussion of research results that have been regulated in the previous section. Discussion of research results is based on research objectives, literature review, previous results, and research limitations. Discussions are organized in different ways to make the discussions more focused. Namely, restatement of key issues, general responses to key issues, analysis of data to interpret results, comparison of results and theory, research implications, results and limitations of results analysis and interpretation.

The main problem of this study is: At SMK Negeri 2 Mandrehe the application of the cooperative learning model has not been implemented optimally. Student learning outcomes in the basic competencies of understanding occupational safety and health and the environment (K3LH) in building work with a Minimum Completeness Criteria (KKM) of 70. To overcome this problem, one of the efforts of the researchers is to apply an optimal cooperative learning model to improve the process learning. As discussed in Chapter I, the formulation of the research problem is "Is the application of the Cooperative Learning learning model able to improve student learning outcomes in the basic competencies of understanding occupational safety and health and the environment (K3LH) in building work at SMK Negeri 2 Mandrehe?". In this study, the cooperative learning model is expected to be a solution to overcome the problems of the learning process and improve student learning outcomes. In addition, the application of the cooperative learning model is expected to increase students' interest and activeness in participating in the learning process. The cooperative learning model is a learning model in which students study in small groups with different abilities and work together in groups to understand the learning material provided to each group.

To examine the improvement of student learning processes and improvement of learning outcomes, researchers optimally apply the cooperative learning model and conduct research. During the learning process, subject teachers as observers observe the process of observing the ongoing learning process. After the learning activities are completed, the teacher (researcher) conducts tests to assess student learning outcomes according to the learning process. Test results are processed to significantly improve student learning outcomes through the optimal application of cooperative learning models.

Based on the tests given to students, it can be seen that the percentage of student learning outcomes in cycle I had not reached the KKM given the following reasons: The learning system they developed had never been experienced before, so students had to adapt to follow the learning process. There are still many weaknesses in the learning process

carried out by researchers, as evidenced by the results of observations of subject teachers, namely 71.42% (Appendix 17d, Table 15). However, after making improvements based on the results of the researchers' reflections in Cycle I, Cycle II showed that students were more interested and involved in the learning process so that student learning outcomes increased. General answers to the main research questions through the application of optimal cooperative learning models are: Application of optimal cooperative learning models can improve student learning outcomes. The application of cooperative learning models improves student learning outcomes.

Several insights were gained while conducting this research. In other words, the application of the cooperative learning model increases student learning activities, and students with different ability levels work together in groups to increase the activity of students with lower ability levels and increase student learning activities. Learning outcomes can be improved by applying cooperative learning models. As explained in Chapter 2, the basic theory that forms the basis for conducting this research is the cooperative learning model. This learning model is a learning model that allows students to work together in groups with different levels of ability to exchange information about their learning material.

Based on the explanation above, the researcher compared the results with the theory. From the results of the research that has been done, it was found that the cooperation of students in groups has increased even though they have different abilities, each student is able to account for their respective assignments because they are supported by other group members, students who are less achievers have new insights and experiences from the assignments given. so that they are able to show their abilities, each student is actively involved in the group because they have their respective tasks and improve student mastery of the learning material given to their group.

In the world of education, this research means that by applying the cooperative learning model, students can understand the content of the material given by their teacher. The cooperative learning model emphasizes that students are more active in their groups and willing to work with other group members. Through this classroom action research, through the Cooperative Learning Model it is hoped that teachers can improve the learning process and improve the quality of teaching. The results of this study are not absolute because of several limitations. For this reason, it is necessary to disclose the limitations of this study, especially those related to the analysis and interpretation of research results. Based on this, the following research limitations are included so that readers can have the same perspective as the research. Some of the restrictions that occur are:

1. A learning process using the cooperative learning model in this study still has various weaknesses.
2. Although learning with the co-learning model aims to increase activity and the ability to collaborate with students in the learning process, its implementation is still not optimal, especially in terms of student activity and participation, all of these weaknesses need to be improved.
3. Eligibility for this research is limited to students of Class X DPIB SMK Negeri 2 Mandrehe. That is, the goal is to improve student learning outcomes in basic skills in understanding occupational safety and health and the environment (K3LH) in building work, following the procedures and rules for implementing the cooperative learning model.
4. The research was conducted in an odd semester of the 2022/2023 academic year.
5. Limited manpower, time and reference book support to conduct research.

CONCLUSION

From research conducted in class X DPIB SMK Negeri 2 Mandrehe with basic competencies in understanding occupational safety and health and the environment (K3LH) in building work regarding the application of cooperative learning models it can be concluded that: Observation of the learning process (teacher respondents) in cycle I achieved an average of 74.99%, but increased in cycle II an average of 83.92%. Observations of student activity during the learning process in the first cycle averaged 48.54%, while the second cycle increased by an average of 83.95%. The average student learning outcomes in cycle I was 66.89, but the average student learning outcomes in cycle II increased. So that 84.19 is in the good category. The completeness of student learning outcomes in cycle I was only 41.66% while the percentage of completeness of student learning outcomes in cycle II reached 100% so that it fulfilled the specified 70%. From the results of the study, by applying the Cooperative Learning learning model optimally in the Subjects of Fundamentals of Building Construction and Land Measurement Techniques with the Basic Competence of Understanding Occupational Safety and Health and the Environment (K3LH) in Building Work can improve student learning outcomes of Class X DPIB SMK Negeri 2 Mandrehe Academic Year 2022/2023.

Based on the results, discussion and conclusions of this study, some suggestions from researchers are: For subject teachers, they should apply the Cooperative Learning learning model optimally in the learning process so that student learning outcomes can increase, especially in the basic competencies of understanding occupational safety and health and the environment (K3LH) on building works. For schools, it should further improve competency training and motivate subject teachers so that they are better at planning and selecting learning models used in carrying out the learning process. For future researchers, they should continue and develop this research, especially in the application of the Cooperative Learning learning model in the basic competencies of understanding occupational safety and health and the environment (K3LH) in building work.

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