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Cooperative learning model of snowball throwing to improve the activity and learning achievemens

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Abstracts. The aims of this research were to improve the activity and learning achievements of Cooling System subjects in class XI Light Vehicle Engineering (TKR) of Muhammadiyah 1 Imogiri Vocational School using the Cooperative Snowball Throwing type model. This research was a Classroom Action Research (CAR). The subject of this study was the tenth-grade students of Light Vehicle Engineering at Muhammadiyah 1 Imogiri Vocational School in the year 2017/2018, amounted to 29 students, while the object of this classroom action research was the application of the Snowball Throwing a type cooperative learning model. The data collection techniques used were observation and test. The instruments used were test sheets and observation sheets. The data analysis techniques used descriptive and quantitative analysis to determine the percentage of activity and learning were an achievement. The results of this research show that: (1) the application of the Snowball Throwing type cooperative learning model could improve students' activity in the cooling system subjects. The result shows that the activeness score in the first cycle (48.8%) and increased in the second cycle became (68.2%), and (2) The application of the Snowball Throwing type cooperative learning model could improve the learning achievements of the Cooling System. The results show that the results of the pre-cycle test were 13.79%. Students who completed the first cycle of KKM were 13 students with a percentage of 44.9%. The test results in cycle II increased from cycle I. Students completed cycle II as many as 23 people with a percentage of 79.3%

Keywords: snowball throwing, student activity, and student learning achievements.

Introduction

Indonesia places vocational education (SMK) as one of the important parts of the national education system. The existence of these Vocational Schools is to prepare graduates who are ready to work and be independent in entrepreneurship. In the success of this, it is necessary to have effective and varied learning strategies, so that there is no saturation and students' needs for science are fulfilled. The role of the teacher becomes important in the use of a good learning model. Learning is not only centered on the teacher, but involves students during learning activities. The learning model that should be done as students dig their own information, solve problems from a concept that is learned (student centered). This will arouse student activity during the learning activities.

Khanifatul (2012: 37) states that students will more easily take part in learning if learning is in a pleasant atmosphere. One way that can be done by the teacher so that the creation of a pleasant learning atmosphere is to encourage students to be actively involved. Activity according to Rusman (2012: 101) can be either physical or psychological activities. Physical activities can include reading, listening, writing, practicing skills and so on. While psychic activities, for example, use the repertoire of knowledge possessed in solving problems faced, comparing one concept with another, concluding the results of experiments and other psychological activities. According to Dimiyati (2009: 114) that the activeness of students in learning takes a variety of activities from physical activities to psychological activities, meaning learning activities involve physical activity and moral activity. Based on the opinions of experts above, it can be concluded that the notion of student activity is student activity involving physical and psychological activities in understanding a lesson. Physical

activity can be in the form of reading, taking notes, writing. While psychic activity can be in the form of thinking, understanding, and concluding a concept.

According to Ahmad Susanto (2013: 5), student learning outcomes are abilities acquired by children after going through learning activities. Because learning itself is a process of someone trying to obtain a form of behavior that is relatively fixed. Aunurrahman (2013: 37) states that learning outcomes are characterized by changes in behavior. Although not all behavior changes are the results of learning, learning activities are generally accompanied by changes in behavior. According to Rusman (2012: 123) Learning outcomes are a number of experiences gained by students that cover cognitive, affective, and psychomotor domains. Learning is not only mastering the theoretical concepts of subjects, but also mastery of habits, perceptions, pleasure, interests, social adjustment, kinds of skills, ideals, desires and hopes. According to Oemar Hamalik in Rusman (2012: 123) states that learning outcomes can be seen from changes in perceptions and behaviors including improvements in behavior.

Based on the opinions of the experts, it can be concluded that learning outcomes are abilities possessed by someone after he learns something. Ability includes cognitive, affective, and psychomotor domains (Evaline, 2011: 8).

Imogiri Bantul Muhammadiyah 1 Vocational School, in the subject of the Cooling System, the teacher still uses the lecture model with blackboard media to explain the lesson to students. This is because classroom facilities and infrastructure such as LCDs, projectors and 3-dimensional learning models do not support. The use of this conventional learning model causes students to be less enthusiastic about the subjects delivered. They tend to talk to their peers, play cellphones, and work on other subject reports because they feel bored. In class XI TKR B, of the total 29 students, less than 10 students actively asked and answered questions from the teacher in learning activities. Students remain silent when given the opportunity to ask or answer questions.

The weakness of the lecture model, one of which is that it is difficult for teachers to know whether all students have understood what he explained. It is evident from the results of the daily cooling system basic competency test scores on the TKR B XI class subjects, out of 29 students, 14 students have not been able to achieve the minimum completeness criteria (KKM) 75. Inactivity of students during the lesson becomes a cause of low learning outcomes students of class XI B.

The low learning outcomes are caused by learning that is still centered on the teacher and the presentation of material that is less attractive, so that students are not actively involved in the process of learning, so the learning process is less effective and efficient. One effort that can be done to anticipate these problems is by choosing the right learning model so that the process of learning in the classroom feels very pleasant. Snowball Throwing is one type of cooperative learning model. The selection of the snowball throwing learning model is considered appropriate, because this learning model is able to involve the activity of students through the game of rolling and throwing "snowballs" or paper (Kokom Komalasari, 2010: 67).

Besides this learning model will also explore the courage of students to write questions and answer questions at once. Hamzah B.Uno (2011: 102) states that the snowball throwing learning model is a learning activity model that gives individuals the opportunity to argue, then combined in pairs, in groups, and finally in a classical way to get views from all students or students in the class. The advantages of the snowball throwing learning model are increasing teacher efficiency in managing creative classes, training the leadership of students in groups, training students' self-confidence in expressing opinions in the learning process, encouraging students to be more active and creative in learning, creating an atmosphere of teacher interaction with students and the interaction of students with good students, and improve student learning outcomes both individually and in groups (Huda, 2011).

Based on what has been described above. Then the research is done with the formulation of the problem, namely increasing the activity and learning outcomes of Cooling System subjects of class XI Light Vehicle Engineering (TKR) Muhammadiyah 1 Imogiri Vocational School by using the Cooperative Snowball Throwing type model.

Methode

The type of research used is a type of classroom action research. Action research is a type of research that focuses on aspects of planning, organization, coordination, implementation, supervision and evaluation. Class action research (PTK) according to Saur Tampubolon (2013: 15) is a problem solving that utilizes real action in the form of a cycle through the process of the ability to detect and solve problems. This type of classroom action research was chosen because classroom action research is one of the techniques so that learning always experiences improvement through continuous improvement.

The research design used in this study was the research design of Kemmis & Massachusetts (1988) in Dadang (2013: 46). There are 4 research processes, namely planning, action, observation, and reflection.

The procedure for classroom action research consists of pre-research and cycle action research. Pre-research is an initial reflection before cycle action research is conducted and Cycle Action Research is based on the results of evaluation of research data analysis, initial test results, and collaborator team discussions, can be designed learning tools for teaching material (learning material) Repairing the cooling system and its components (KD2).

This Classroom Action Research was conducted at Muhammadiyah 1 Imogiri Bantul Vocational School, D.I Yogyakarta Province. The research was conducted on the subject of Cooling Systems in class XI. This research was conducted in April to May 2018. The timing of the study refers to the school's academic calendar and is in accordance with the schedule of the Cooling System subjects at Muhammadiyah 1 Imogiri Bantul Vocational School.

The object of this study was students of class XI B Muhammadiyah 1 Imogiri Bantul Vocational School in the first semester of the 2017/2018 academic year, totaling 29 students. The sample selection technique uses purposive sampling technique. Purposive sampling technique is a way of taking subjects based on the subjective decisions of researchers based on certain considerations. Class XI B was chosen because the class has the lowest average student activity of the other classes from the observations that have been made (class A, class C and class D). The subject in this study is something that can be observed when the snowball throwing learning model is implemented, which is the activity and learning outcomes of students.

Data collection techniques used are observation and test techniques. The type of observation used in this study is the type of participant observation. Observation of this type according to Nana (2013: 85) is that observers must involve themselves or participate in activities carried out by individuals or groups observed. The technique of collecting data using the test method is a data collection technique in which the object under study is asked to do certain tasks given by the researcher. This technique is generally used to evaluate student learning outcomes. In this study a formative test was used. The form of the test chosen is a test multiple choice objective. The instruments used in this study were observation sheets and learning outcomes test sheets. Observations used are structured observations, these observations are systematically designed about what will be observed and planned. The learning result test sheet in the form is a type of ordinary multiple choice test (multiple choice).

Data analysis techniques in this study the data used is quantitative data, then the data analysis technique uses descriptive statistics. This is seen from the mean, median, and mode values

Results and Discussion

Research result

Based on student learning outcomes in the pre-research stage of 29 students showed the average value (mean) achieved was 60.83 with a median value of 56, and the most frequently occurring values (modes) were 56 and 80 (respectively). each of these values appears 2 times). From these results can be categorized in Table 1. achievement of student learning outcomes in accordance with the completeness criteria at least the following:

Tabel 1. Achievement of Student Learning Outcomes Based on KKM

Category	Total students	Percentage
complete	4	13,79%
Not complete	25	86,21%
Total	29	100%

Of the 29 students of class XI B who took the pretest test, only 4 students or with a percentage of 13.79% were able to achieve the minimum completeness criteria (KKM). The KKM value that has been set is 75. While the students who have not finished are 25 students or 86.21%. This shows that more than 50% of students do not understand the material that has been taught. The average student who is low and at least students who are able to achieve the KKM value indicate that there needs to be improvement to improve student learning outcomes.

Based on student learning outcomes in the first cycle of 29 students showed the average value (mean) achieved was 74.34 with a middle value (median) which is 68, and the value that appears most often (mode) is 668 and 75 (the value appears 5 times). From these results can be categorized in Table 2. achievement of student learning outcomes in accordance with the completeness criteria at least the following:

Tabel 2. Achievement of Cycle I Student Learning Outcomes Based on KKM

Category	Total students	Percentage
Complete	13	44,9%
Not complete	16	55,1%
Total	29	100%

This study is considered successful if the snowball throwing learning model is able to improve student learning outcomes. The success indicator set by the researcher is if the complete value can be achieved 75% of all students in class XI B. The learning results in the first cycle show that of 29 students of class XI B who participated in the posttest of the first cycle, students were able to achieve the minimum completeness criteria 13 students or 44.9% of the total class. While students who have not completed as many as 16 students or 55.1%. This shows that the achievement of student learning outcomes in the first cycle is still low, it can be seen that less than 50% of students in class XI B are able to achieve KKM scores.

The following is the value obtained by students in cycle II. Based on student learning outcomes in the pre-research stage of 29 students showed the average value (mean) achieved was 81.2 with a middle value (median) which is 80.0 and the value that appears most often (mode) is 88 (the value appears 8 times). From these results it can be categorized in the table of student learning achievement in accordance with the following completeness criteria:

Tabel 3. Achievement of Student Learning Outcomes Based on KKM

Category	Total students	Percentage
Complete	23	79,3%
Not complete	6	20,7%
Total	29	100%

This study is considered successful if the snowball throwing learning model is able to improve student learning outcomes. The success criteria determined by the researcher is that if the complete value can be reached 75% of all students in class XI B. The learning results in the second cycle show that of the 29 students of class XI B who participated in the second posttest, students who achieved the minimum completeness criteria (KKM) 23 students or 79.3% of the total class. While students who have not completed as many as 6 students or 20.7%. This shows that the complete value has been achieved more than 75% of all students in class XI D. The snowball throwing learning model is proven to improve student learning outcomes.

The following are the results of student activeness values for cycle II in Table 4.

Tabel 4. Category of Student Activity Cycle II

No	Category	Score	Total students	Percentage
1	very less	5-8	-	-
2	less	9-12	-	-
3	enough	13-16	11	37,9%
4	well	17-20	14	48,3%
5	very good	21-25	4	13,8%
	Total		29 students	100%

Based on the table above, it can be seen the observations of student activeness in cycle II. Students who get a score in the category of Students who show active attitudes with enough categories are 11 students or 37.9%. Students who get scores with good categories are 14 students or 48.3%. The remaining 4 students or 13.8% began to show active attitudes with very good categories.

The snowball throwing learning model can be successful if students 'activeness during the class learning process reaches 65% of all students in class XI D. While the presentation of students' activeness in the first cycle is as follows:

$$\text{Percentage} = \frac{\text{Student activity score}}{\text{total student activity score}} \times 100\%$$

$$\text{Percentage} = \frac{495}{725} \times 100\ \%$$

$$\text{Percentage} = 68{,}2\%$$

The observations of student activeness in the second cycle showed an increase compared to the previous cycle. Increased activity of students from the first cycle to the second cycle of 14.3%, which is from 48.8% to 63.1%. It also proves that the snowball throwing learning model in the second cycle has succeeded in increasing student activity. The overall student activity score was 68.8% with sufficient, good, and very good categories, while the success criteria set by the researcher was 65%. Therefore, at this stage there is no need to increase activeness in the next cycle, and the snowball throwing learning model is proven to be able to increase the activity of students in cycle I. Cycle I the overall percentage of students is 48.8%. Cycle II the overall percentage of students was 68.2%. Increased activity of students in each of these cycles can be caused by careful planning that researchers have formulated.

Discussion

Activity of Student Learning

Based on the data in the first cycle, and the second cycle, each of them has an activity score category. Cycle I was included in the less active category with a score (48.8%), but an increase in scores, and in the second cycle increased with a score (68.2%) in the active category. This shows that activeness in students' cooling system learning increases in cycle II.

Student learning outcomes

In the initial conditions (pre-cycle) there were still many students who had not yet reached the specified KKM score of 75. Of the 29 students only 4 (13.79%) had scores above the KKM while 25 (86.21%) students had not achieved mastery . Although there has been an increase in the number of students who have reached KKM in the first cycle compared to the pre-cycle, but the number of students who have reached KKM has not reached the specified percentage of completeness

In the first cycle there were still many students who had not yet achieved the specified KKM score of 75. Of the 29 students only 13 (44.9%) had scored above the KKM while 16 (63.1%) students had not achieved mastery. Although there has been an increase in the number of students who have reached KKM in the first cycle compared to the pre-cycle, but the number of students who have reached KKM has not reached the specified percentage of completeness

After the cycle II action was carried out the results experienced an increase in the results of the cycle I action. Based on the data obtained from the pre cycle, cycle I and cycle II there was an increase in student completeness. In the pre cycle there were 4 (13.79%) students who completed and there were 25 (86.21%) that were not completed. In the first cycle the number of students who achieved the KKM score experienced an increase, there were 13 (44.9%) students who completed and 16 (63.1%) who had not achieved mastery. In cycle II students' completeness increased, there were 23 (79.3) students who completed or 6 (20.7%) who were still incomplete.

In the second cycle there were still students who scored under the KKM. The implementation of learning using the method of Snowball Throwing learning can run smoothly according to what is planned and get the desired results. This can be seen from the increase in the average value of student learning outcomes.

Conclusion

Based on the results of the research obtained, it can be concluded that the application of the Snowball Throwing type cooperative learning model can increase the activity and student learning outcomes in the cooling system subjects.

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