

Cooperative Stad Type Using Microsoft Power Point in Learning To Improve Motivation And Achievement Learning Mathematics

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Abstract

A study aimed (1) the students to have motivation (2) in students' mathematics learning achievement had increased. The implementation was carried out in several cycles and the subjects were class XII MIPA 4 students at SMA Negeri 1 Susut year 2021/2022. There were 18 male students and 16 female students from 34 students in this class. These data were: the use of a questionnaire on students' learning motivation in learning mathematics to find out motivational data and learning achievement was searched using tests. The results showed that: (1) students had learning motivation (average score of 69.71 belonging to the sufficient category in activity I increased to 79.35 in the high category in activity II); (2) there was an increase in student learning achievement (the average value of 69.41 in activity I increased to 76.68 in activity II). Overall learning achievement increased from 88% in activity I to 100% in activity II. Based on the results of the research, the Cooperative Model with Microsoft Power Point has increased learning motivation and learning achievement in mathematics in class XII MIPA 4 SMA Negeri 1 Susut on Even Semester year 2021/2022. For this reason, this learning model deserves to be considered as a learning model in the classroom.

Keywords: STAD Cooperative Type; Microsoft Power Point; Learning Motivation; Learning Achievement

Introduction

Education has the main goal of increasing students' knowledge, basically education has the goal of forming and developing the potential possessed by students to become human beings who have the will, ability, skills, and maximum creativity. Therefore, quality education certainly has a major role in supporting the development of human development in Indonesia. One of the compulsory subjects to be taught at all levels, from elementary to higher education is mathematics.

According to PP RI No. 19 of 2005 concerning SNP (National Education Standards) which describes the planning, implementation and supervision of education as the basic foundation of quality learning (Asep & Ifan, 2008). The quality of education is reflected in the existence of quality human beings, character, and the view to achieving the desired goals and being able to adjust conditions quickly and precisely and efficiently in various existing conditions. Therefore, motivating students in learning is very important in the educational process and will be better in all aspects of life. In the future development can be achieved if the development process occurs, namely being able to increase the competence of students, so that they can face and solve a problem they face. Education has a concept that will feel increasingly important when they have to enter the world of work and in society, because those concerned must be able to use the education obtained at school to deal with and solve problems faced in everyday life.

Developing national education and increasing the potentials of students so that they become fully intelligent human beings are the goals of education. Conscious and directed effort to create a good learning atmosphere and have spiritual strength, self-control, personality, intelligence, noble character, and the skills needed by himself, society, nation and country is an aim of education.

The students' mathematics scores are still low and the standard of completeness that has not been achieved optimally has resulted in the educational goals not being achieved in accordance with what was planned. These problems can be caused by various factors, including the low interest and motivation in learning of students, as well as the inactivity of students in learning activities. teach in class. This can be seen from the lack of activity and communication of students in participating in the learning carried out. The difficulties of these students are also related to the learning strategies used by the teacher. The teacher's factor that is less varied in presenting mathematics subject matter and not yet using varied, fun learning models and media will cause students to dislike mathematics. In learning practice, especially mathematics, motivation is an important element of effective teaching or successful teaching (Nur, 2003). Hudojo (1998) suggests that, motivation is the driving force that exists within a person to carry out certain activities to achieve a goal. Meanwhile, Sardiman (1986) argues that, learning motivation is the overall driving force within students that causes learning activities, so that the desired goals of the learning subjects can be achieved.

When viewed from the source, motivation consists of two parts, namely intrinsic motivation and extrinsic motivation. Intrinsic motivation is motivation that arises from within the student concerned without external stimulation. Activities are initiated and carried out because of direct encouragement related to these activities. Meanwhile, extrinsic motivation is motivation that arises as a result of external stimuli or being influenced by other people. The characteristics of someone who has motivation are diligently working on math assignments, tenacious in facing difficulties, showing interest in various problems, working alone more often, getting bored quickly with routine tasks, being able to defend opinions, not easily letting go of things that are believed, and often reading and solving problems from questions (Sardiman, 1986).

Motivation plays an important role in the teaching and learning process. Good motivation will give better results in learning. To be able to influence students to be motivated in learning, teachers need to pay attention to several things that can increase student motivation (Nur, 2003). Increasing interest to convince students is very important and interesting subject matter. For example: opening a lesson by connecting the subject matter with the surrounding environment or the daily life of students. Maintain student curiosity. Using a variety of interesting and educative presentation models, such as the use of computer media, demonstrations, and the like.

Learning mathematics basically aims to improve the ability to master numbers and calculations and as a basis for studying other subjects. Along with the changes in the curriculum, the objectives of learning mathematics are divided into four main objectives (Depdiknas, 2006), namely as follows:

1. Train the way of thinking and reasoning in drawing a conclusion.
2. Develop creative activities involving imagination, intuition and discovery by developing divergent thinking, originality, curiosity, predictions, conjecture and experimentation.
3. Develop the ability to solve problems.
4. Develop the ability to convey information and communicate ideas.

Cooperative learning is an option to be able to assist in achieving the goals of learning mathematics. As written by the National Council of Teacher Mathematics (NCTM) (Sharan Shlomo, 2009) which states Small groups provide a forum where students ask questions, discuss ideas, make mistakes, learn to listen to the ideas of others, offer constructive criticism, and summarize their findings in writing. Based on the initial data obtained from the results of daily tests in the previous semester, the following data is obtained. From these data it can be seen that only 18 people met the minimum

completeness criteria, namely 67, and 16 people who did not meet the completeness score. Whereas in learning mathematics there are 4 principles that must be adhered to (Ministry of National Education, 2003), namely:

1. Mathematical material is made in sequence or each math topic is based on a certain sub-topic.
2. A learner can understand a mathematical topic if he has understood and mastered the supporting sub-topics or prerequisite material.
3. Differences in ability between students in learning or understanding a mathematical topic in solving problems is determined by differences in mastery of the prerequisite material subtopics.
4. Mastery of a new topic by a learner depends on mastery of the topic and previous material.

So that for further learning mathematics these 16 students will experience difficulties in understanding the difficulties in the next math topic. Based on the author's observations, there is also a relationship between the activity of students in class, both in working on practice questions and answering questions with the results of daily tests obtained by students. Students who actively work on practice questions and answer questions get higher scores in daily tests than students who are not active. Seeing this, learning is needed that can activate students as a whole, both those who are smart, moderate, and those who are less intelligent. For this reason, the author tries to change the learning process from the conventional one (only lectures and practice questions) to group study using the Student Teams Achievement Division (STAD) method or the achievement division of student groups.

The author chose this method because this method is in line with other cooperative learning methods, that students work together to learn and are responsible for their own learning and also the learning of others. Based on this background, the following problem formulation can be formulated: How can the STAD-type cooperative learning method with Microsoft Power Point increase students' motivation, achievement and mathematics learning activities.

This study aims to Increase the motivation to learn mathematics in class XII MIPA 4 SMA N 1 Susut for the 2021/2022 academic year through the application of the STAD type cooperative learning method with Microsoft Power Point in learning mathematics. Knowing the learning achievements of class XII MIPA 4 SMA N 1 Loss in the 2021/2022 academic year after the STAD type cooperative learning method has been implemented with Microsoft Power Point in mathematics learning Knowing the responses of students in class XII MIPA 4 SMA N 1 Declining for the 2021/2022 academic year STAD type cooperative learning with Microsoft Power Point in learning mathematics.

The benefit of this research is that using the STAD-type cooperative learning method assisted by Microsoft Power Point will motivate students to learn mathematics and help improve their mathematics learning achievement. The teachers involved in this study will receive learning alternatives to increase students' motivation and achievement in learning mathematics Stimulating and cultivating teacher ideas and creativity in designing learning that is more fun for students.

Method

This research is a Class Action Research (CAR). The research was carried out in 2 (two) cycles, with each cycle consisting of 4 (four) stages, namely action planning, action implementation, observation/evaluation and reflection. This research was conducted at SMA Negeri 1 Susut. The subjects of this study were students in class XII MIPA 4 SMA Negeri 1 Susut for the 2021/2022 academic year, with a total of 34 students

consisting of 17 boys and 17 girls. This research was carried out collaboratively between math teachers at SMA Negeri 1 Susut. This research was carried out starting on January 17, 2022 every Tuesday and Thursday according to the lesson schedule for class XII MIPA 4. The objects of this study were students' mathematics learning achievements, students' motivation to learn mathematics, and students' responses to the application of the STAD learning method with Microsoft Power Points. This learning model will be more effective in increasing motivation and achievement, with Microsoft Power Point media it will make learning more interesting and educative because there are games of colors, letters, pictures, graphics, and other animations so that students are more stimulated and challenged to find out more information. contained in the learning process. In addition to making learning more effective, the activity and involvement of students will also increase. By increasing the activity and involvement of students in learning, it can help students in the process of remembering the concepts being studied. So that by implementing this innovative learning model, it is hoped that students will be able to increase their motivation and achievement in learning mathematics.

Data on students' understanding of mathematical concepts were analyzed descriptively, namely by using the average test scores of students' mathematics learning outcomes with the formula:

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n}$$

Information:

\bar{X} = The average value of students' mathematical concepts.

$\sum_{i=1}^n X_i$ = Total value of students' understanding of mathematical concepts.

n = Total of students.

To find out students' motivation towards learning mathematics after the application of the STAD cooperative learning method assisted by Power Point will be analyzed descriptively on the opinions of students contained in the student learning motivation questionnaire. Data on students' learning motivation were analyzed based on the average score of students' learning motivation, mean ideal/ideal average (MI) and ideal standard deviation (SDI), where

Mean Ideal = (maximum score + minimum score).

Ideal Standard Deviation = (maximum score + minimum score).

The average score of students' learning motivation is analyzed by the formula:

$$\bar{M} = \frac{\sum_{i=1}^n M_i}{n}$$

$$P_i = \frac{\bar{X}_{i+1} - \bar{X}_i}{\bar{X}_i} \times 100 \%$$

Information:

\bar{M} = Average score of students' learning motivation.

$\sum_{i=1}^n M_i$ = Total score of students' learning motivation.

n = Many students.

Indicators of Success: The application of the STAD cooperative learning method assisted by Microsoft Power Point is said to be successful if it meets the following success criteria:

1. The average value of students' understanding of mathematical concepts is at least 67, the absorption capacity of students classically is at least 67%, the learning completeness of students classically is at least 75%, and the increase occurs in the average value of students' mathematics learning achievement from cycle to next cycle.
2. The average score of students' motivation to learn mathematics has increased from each cycle to the next and is at least in the high category.
3. Students' responses to the learning carried out are at least in the positive category.

Results and Discussion

1. STAD Type Cooperative Learning Model

The learning model is a learning process that is presented from the beginning to the end of learning typically by a teacher. The learning model according to Joyce and Weil in Rusman (2012) argues that a learning model is a plan or pattern that can be used to form (long-term learning plans), design learning materials and guide learning in class or others.

The learning model is a pattern that is used as a reference in designing learning in the classroom. According to Arends (Agus Suprijono, 2009), the learning model refers to the approach to be used, including learning objectives, stages in learning activities, learning environment, and classroom management. Through the learning model the teacher can help students get information, ideas, skills, ways of thinking, and expressing and issuing ideas. The learning model aims as a guide for learning designers and teachers in planning fun learning activities. So the learning model is a plan or pattern in learning that is made by the teacher in the classroom, so that the class becomes interactive, meaningful and fun.

The cooperative model is a learning model that prioritizes group learning and emphasizes collaboration in it. The purpose of the cooperative model is that students' academic learning outcomes increase and students can accept a variety of themes and improve social skills. The basis of cooperative learning (Muslimin et al, 2000) is as follows:

- a. Each member of the group has responsibility for everything that is done in the group.
- b. Each group member must know that all group members have the same goal.
- c. Each member of the group must have the same duties and responsibilities.
- d. Each group member will be evaluated.
- e. Each group member shares leadership and requires skills to learn together during the learning process.
- f. Each group member will be asked to be individually responsible for the material handled in the group.

Cooperative learning has the following characteristics:

- a. Students in groups divide learning material according to the basic competencies to be achieved.
- b. Groups are formed from students who have different abilities, high, medium, and low ability levels. If possible, group members come from different ethnicities or religions and pay attention to gender equality.
- c. More emphasis on group rewards than on individuals.

There are various types of cooperative learning put forward by experts including Slavin (1985), Lazarowitz (1988), or Sharan (1990) which are the Jigsaw type, the NHT (Number Head Together) type, the TAI (Teams Assaited Individualization) type, and the STAD type. (Student Teams Achievement Division). STAD type cooperative learning was developed by Slavin et al. The steps for implementing STAD type cooperative learning are as follows:

- a. The teacher conveys learning material to students according to the basic competencies to be achieved. Teachers can use various options in conveying this learning material to students. This step does not have to be done in one meeting.
- b. The teacher gives tests individually so that the initial value of students' abilities will be obtained.
- c. The teacher forms small groups consisting of 4-5 members each, where each group member has heterogeneous academic abilities (high, medium and low). If possible, group members come from various cultures or tribes and pay attention to gender equality.
- d. The teacher gives assignments to each group related to the material that has been given, discusses it in groups together, cooperates with each other among members, and discusses the answers given by the teacher. The main goal is to ensure that each group can master the concepts and materials. The task material for the group is prepared by the teacher so that the expected basic competencies are achieved. Group study time one or two meetings.
- e. The teacher gives a test to each student individually.
- f. The teacher gives awards to groups based on the acquisition of an increase in individual learning outcomes from the initial value to the next quiz value.
- g. Learning Media Microsoft Power Point.

The word media is a word that comes from the word medium which means intermediary or introduction. According to Santoso (in Rohani, 1997), the media is said to be all forms of intermediaries used by the teacher to convey an idea or idea, so that the idea or idea can be accepted by students. Djamarah and Zain (2002) state that media is a tool that can be used as a channel for messages to achieve learning objectives.

The media has a function to pave the way for achieving the goals of a lesson. Learning activities with the help of the media are expected to produce more effective and efficient processes and better learning outcomes than without the help of the media. Hamalik (2005) suggests that the use of learning media in the teaching and learning process can increase desire and interest, generate motivation and even bring a psychological influence on students. The use of learning media will be more effective in the learning process and delivery of messages and content of a lesson at that time. In addition to helping increase student motivation and interest, learning media can also help students improve understanding of concepts, as well as increase student concentration by conveying interesting messages. Nana Sudjana (Djamarah & Zain, 2002) suggests the benefits of learning media in the student learning process, as follows.

- a. Learning will attract more students' attention so that it can foster learning motivation.
- b. Learning materials will be clearer in meaning so that they can be better understood by students and enable students to master and achieve learning objectives.
- c. Teaching methods will be more varied, not solely verbal communication through the narration of words by the teacher, so that students are not bored and the teacher does not run out of steam, especially if the teacher teaches at every lesson.
- d. Students can do more learning activities because they not only listen to the teacher's explanation, but also other activities such as observing, doing, demonstrating, acting, and so on.

One of the software that is a product of Microsoft® is Microsoft Power Point which is devoted to the development or creation of slides for presentations. Microsoft Power Point has several tools called tools, which help the slide designer to design slides so that they appear more attractive and educative and easy to control when making presentations. With various tools that are owned and provided by Microsoft Power Point, the material presented via slides will be more varied in color, motion and animation,

which can attract students' attention in the learning process and keep students' attention to stay focused on the material displayed by Teacher.

Motivation is very important in determining how much students get the information presented to them. Students that are motivated to learn something will use better cognitive processes in learning a material, so that students will absorb and get the material better (in Nur, 2003). For this reason, it is necessary to apply a learning method that requires students to be more innovative and able to increase student learning motivation which leads to increased student achievement in learning mathematics. One of the learning models that can be applied is the STAD type cooperative learning model with Microsoft Power Point. Based on the results of previous research, it was stated that the STAD type cooperative learning model could improve students' mathematics learning achievement. Student achievement increases because of good motivation.

The learning method will be more effective in increasing students' motivation and learning achievement in mathematics if there is a role for the media. In this study, the media used is Microsoft Power Point with the use of a computer. Learning mathematics using Microsoft Power Point media is stated to be able to increase students' motivation and achievement in learning mathematics. Microsoft Power Point media will make learning more interesting because there are games of colors, letters, pictures, graphics, and other animations so that students are more stimulated to find out the information contained in the learning process. In addition to making learning more effective and efficient, the activity and involvement of students will also increase. By increasing the activity and involvement of students in learning, it can help students in the process of remembering the concepts being studied. So by using this innovative learning model, it is hoped that there will be an increase in students' motivation and learning achievement in mathematics.

2. The Effectiveness of STAD Type Cooperative Learning Method with Microsoft Power Point in Increasing Motivation and Learning Achievement in Mathematics

In learning mathematics, what the teacher does is strive for learning that is oriented towards growing the activities and thinking of students to rediscover mathematical concepts, formulas or principles. While the use of media in learning mathematics is very supportive, because by using learning media students more easily understand abstract mathematical concepts. To achieve the goals of learning mathematics, it is necessary to develop a pleasant mathematics learning process, pay attention to students' wishes, build knowledge from what students know, create a classroom atmosphere that supports learning activities, provide activities that are in accordance with learning objectives, provide challenging activities, provide activities that provide expectations of success, appreciating every student achievement.

Apart from that, in studying mathematics students need different contexts and situations so that the teacher's efforts are needed to: (1) provide and use various teaching aids or learning media that attract students' attention; (2) provide opportunities to learn mathematics in various places and circumstances; (3) provide opportunities to use mathematics for various purposes; (4) develop an attitude of using mathematics as a tool to solve mathematics both at school and at home; (5) appreciate the contribution of tradition, culture and art in the development of mathematics; (6) help students assess their own mathematical activities.

Optimal mathematics learning will have implications for learning achievement, where in theory achievement is the result of something that has been done, created, both individually and in groups. While learning is an activity that is carried out consciously to get a number of impressions from the material that has been studied. Thus, a fairly simple

understanding can be taken regarding learning achievement, namely the results of educational assessments about the progress of students after carrying out learning activities (Djamarah, 1991). Learning achievement is a result obtained by students in participating in learning at a certain time in the form of values (Ministry of Education and Culture, in Ni'mah, 2007). In line with learning achievement, Poerwanto (1986) makes the notion Learning achievement is the result achieved by a person in the learning effort, according to Winkel (1996) Learning achievement is evidence of successful learning or the ability of students to carry out their learning activities according to the target they achieve (Sunartombs, 2009).

From some of the meanings that have been conveyed, it can be concluded that learning achievement is the result achieved by students after the students concerned experience a learning process at school within a certain period of time in the form of an assessment. Learning achievement is something that integrates the learning process, because learning activities are a process, while achievement is the result of a learning process. A person's learning achievement can be seen from the level of success in studying the subject matter expressed in the form of grades, each field of study after experiencing the learning process. Learning achievement of students can be known after an evaluation process is carried out. Evaluation is used to measure students' learning achievements in the form of achievement tests of learning outcomes. The learning achievement test is a test that is made in a planned and measurable manner to reveal the maximum performance of the subject (students) in mastering the material or material that has been taught.

The increase in student learning achievement through the application of the STAD type cooperative learning method with Microsoft Power Point can be seen starting from the initial reflection stage, students can be seen from the results of the first daily test on the Enumeration Rules material (appendix 1). Based on the specified minimum completeness criteria (KKM), namely 67, out of 34 students only 17 students have completed it while 17 other students have not completed it, so that the completeness is 50%. The class average achieved was only 56.80 so that the classical absorption was 56.80%. The results obtained are not in accordance with what has been determined, namely 100% completeness and a minimum absorption of 75%. The results of the students' first daily mathematics test were used as material for consideration in determining the heterogeneous members of the next study group.

Meanwhile, students were given a motivational questionnaire in measuring students' motivation to learn mathematics. Based on the determined motivational questionnaire (appendix 3), the total score of students' motivation to learn mathematics is 1861 (appendix 4) with the number of students being 34 people, so that the average score of learning motivation is 51.69. This average is in the sufficient category. Based on the results obtained from cycle I to cycle II, it can be seen that students' mathematics learning achievement was observed from the average learning achievement, absorption, and learning completeness of students in a classical manner that met the established success criteria, namely the average value of understanding mathematical concepts students at least 67 and increasing, absorption capacity of at least 67%, and classical learning mastery of at least 75%. In addition, students' motivation to learn mathematics has also met the established success criteria, namely the average score of students' learning motivation is at least in the high and increasing category.

The results showed that there was an increase in students' understanding of mathematical concepts from cycle to cycle. Where the success criteria have been achieved in cycle II with the average value of students' mathematics learning achievement is 76.68 and there is an increase from cycle 1 to cycle 2, the absorption of students classically is 76.68%, and the learning completeness of students classically is 100 %.

From the results of the implementation of the actions in the first cycle regarding the motivation and achievement of students in learning mathematics, the research results obtained showed that the results of the implementation of the actions in the first cycle did not meet the specified success criteria. This was because there were still some obstacles in the actions of the first cycle as described in the research results in the first cycle.

The constraints experienced were then discussed by the researcher with the teacher and supervisor to find a solution. Through this reflection activity, it was agreed that several solutions would be implemented to overcome these obstacles as material for improvement for the implementation of actions in cycle II. The solutions are as follows.

- a. For the constraints of students' reluctance to discuss in groups, based on the results of interviews with the students concerned, they were not used to their group mates, but henceforth they promised to discuss as well as possible to obtain good individual and group scores.
- b. The problem with students not being active in working on LKS was responded by giving LKS in groups of a number of group members, so that there was no reason students did not work on LKS because they did not hold LKS.
- c. Regarding the obstacle of unavailability of LCD projectors in class, the researcher responded by entering class earlier for Thursday's schedule while for Tuesday's schedule it remained as usual, this was due to the mathematics schedule in class XII MIPA 4 on Thursday the first hour, while on Tuesday the third hour, so that it clashes with other teachers.
- d. The teacher emphasized to students to make more use of their groups so that every member in the group was actively involved. Teachers also approach students more intensively who did not carry out discussions well, then guide and motivate them.

Based on the corrective actions that had been taken, it turned out that the motivation and achievement of students' mathematics learning can be increased more optimally in cycle II. This can be seen from the results of research in cycle II which had increased from the previous cycle and has met the specified success criteria. In general, the implementation of learning mathematics with the STAD-type cooperative learning model assisted by Microsoft Power Point had been going according to plan. The learning process in cycle II was better, where students were familiar with the application of the STAD type cooperative learning model assisted by Microsoft Power Point.

The cooperative model type STAD assisted by Microsoft Power Point that was applied was able to increase students' mathematics learning achievement because this learning syntax can increase students' learning motivation, so that students were more enthusiastic about learning which in turn can increase mathematics learning achievement. Here students are divided into heterogeneous study groups. Studying in groups will minimize students' deficiencies in mastering a concept because students can discuss with each other in their groups. In addition, usually students who feel lacking in mastering concepts will prefer to ask their friends rather than the teacher. Furthermore, students' mathematics learning achievement can also be improved by having stages where the teacher emphasizes important concepts and reduces the difficulties experienced by students after students present the results of discussions in groups. Furthermore, students are given a quiz to determine the level of achievement in learning mathematics students.

This condition is in line with the theory of Constructivism as a philosophy which emphasizes that our knowledge is our own construction. Piaget (in Dahar, 1989) emphasized that children acquire a lot of knowledge outside of school, and education should pay attention to this and support this natural process. knowledge is not about the world apart from the observer but is a human creation that is constructed from experiences or the world as far as the experience is experienced. This formation process goes on

continuously with each time holding a reorganization because of a new understanding. Based on the constructivism view above, in every process of learning mathematics carried out students must be able to create their own knowledge through the process of forming the necessary schemes, categories, concepts and knowledge structures. Students need stimulation to be able to construct their own knowledge obtained through interaction with their environment, so that students are able to understand concepts, create mental structures and apply them in learning experiences in mathematics, so that students become active in interacting in their environment. Then the result of interaction with the environment is transformed into his mind with structure.

Learning using the STAD type cooperative learning model is carried out by forming participants into heterogeneous learning groups, namely small groups consisting of 4-5 students of different genders, races, ethnicities and abilities (Artini, 2016). The results of implementing the actions from cycle I to cycle II on students' motivation to learn mathematics as a whole showed an increase in students' motivation to learn mathematics in each cycle. Where the success criteria have been achieved in cycle II, namely the average score of students' motivation to learn mathematics is in the high category and has increased from cycle I. The score of students' responses to the STAD type cooperative learning model assisted by Microsoft Power Point shows that the smallest value is 30 and the value the largest was 46. There were 2 students who gave very positive responses to applied learning, 20 students gave positive responses to applied learning, 12 students gave positive responses to applied learning, and no participants students who give less or very less positive responses to learning. With the average response score and the distribution of students' responses to the learning set, a conclusion can be drawn that the learning set gets a positive response from students.

From the results of observations while carrying out the research, the students seemed enthusiastic and worked well together in groups working on the questions on the LKS. However, there were also weaknesses in applying this learning, namely it required quite a lot of time. So the teacher must package the LKS so that it is more easily understood by students and controls the use of time.

Based on the description above and the improvements that occur in each cycle, it illustrates that the STAD-type cooperative learning method with Microsoft Point is able to improve students' achievement and motivation to learn mathematics. The results of these students' responses indicate that the success criteria have been achieved, namely the students' responses to the learning methods applied are in a positive category.

Conclusion

The application of the STAD type cooperative learning method with Microsoft Power Point is able to improve students' mathematics learning achievement. Students' motivation to learn mathematics after the learning model has been established has increased. Student responses to the use of the STAD type cooperative method with Microsoft Power Point were included in the positive category. The success criteria have been achieved in cycle II, namely the average score of students' motivation to learn mathematics is in the high category and has increased from cycle I. Student response scores on the STAD type cooperative method with Microsoft Power Point show that the smallest value is 30 and the largest value was 46. Most of the students who showed a very positive impression of the applied learning, as many as 2 students, who gave a positive response to the learning set as many as 20 students, gave a fairly positive impression of the learning set as many as 12 students, and did not there are students who give less or very less positive impressions of learning. With the average value and distribution of students' impressions determined by the applied learning, it can be concluded that the applied learning gets a positive impression from students.

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