TEAMS GAME TOURNAMENT (TGT): A LEARNING MODELS TO IMPROVE MOTIVATION OF STUDENTS IN LEARNING MATHEMATICS

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Abstract

This study aims to increase the motivation to learn mathematics through the use of the TGT (Teams Games Tournament) Model in fifth grade students of SDN Tanjungjati 2, Bangkalan. This type of research is a collaborative classroom action research model using the Kemmis and Mc Taggart cycle model. The subjects of this study were fifth grade students of SDN Tanjungjati 2, Bangkalan. This classroom action research was conducted in 2 cycles. Data collection techniques using observation and questionnaires. The criteria for the success of this action research were the suitability of the teacher to apply the TGT learning model and the percentage of student motivation to reach ≥ 75%. The results showed that the TGT learning model could increase the learning motivation of grade V SDN Tanjungjati 2, Bangkalan. The learning is to get a learning experience, name the material, demonstrate the results, repeat the material, and celebrate success. In the pre-cycle, the students' average motivation to learn mathematics obtained a percentage of 54.60%. After being given the action, it increased to 68.40% at the end of cycle I, and at the end of cycle II increased to 95.60%.

Keywords– Motivation to learn mathematics, Cooperative Learning, Teams Games Tournament.

1. Introduction

Efforts to optimize learning are the main duties and responsibilities of a teacher. The demand to increase professionalism for teachers is not only fulfilling the mandate of the law but is the most important part in developing idealism and professionalism. So the teacher keeps trying to improve his performance as a moral responsibility. One proof that teachers are oriented towards improving performance is by always looking for solutions to learning problems. Efforts to study and find learning models, strategies and approaches are imperative, along with the development of the world of education which is always colored by dynamics and changes. Not all teachers have the ability to find something new or make innovations in learning, but at least the teacher tries to implement new models which of course have gone through various studies and have proven their superiority.

During the observation carried out on February 27, 2019 at SDN Tanjung Jati 2 in grade V, the observer made observations when the subject in the class was mathematics. On that day the students happened to receive material about flat shapes from the teacher, namely calculating the area and perimeter of a square, rectangle, triangle, kite and rhombus. When learning activities take place, there are some students who play alone, chat, and don't pay attention to the teacher when explaining the formula. This happens because students are bored or not interested in the delivery of the formula given by the teacher. The second problem that was found was the students' low learning motivation. Student learning motivation is still relatively low when the teacher gives the opportunity to students to ask questions, not a single student raises a finger to ask, and vice versa If the teacher gives questions to students when learning, there is no visible student who raises a finger to answer the question

Based on several explanations regarding the observation activities that took place in class V SDN Tanjungjati 2, a problem can be drawn that when mathematics is a subject, students are less motivated by learning mathematics. According to interviews with class teachers, he admitted that he rarely used innovative learning models. Based on the problems experienced by grade V

students at SDN Tanjungjati 2 regarding motivation, the researcher would like to propose the title Classroom Action Research entitled "Efforts to Increase Student Motivation by Using the Teams Games Tournament (TGT) Model in Mathematics Learning at SDN Tanjungjati 2". This research is expected to increase student motivation in learning mathematics.

2. Method

The subjects in this study were the fifth grade students of SDN Tanjungjati 2 Kamal, Bangkalan, totaling 25 students, consisting of 16 male students and 9 female students. In this study, researchers designed actions to be carried out according to the cycle model proposed by Kemmis and Mc Taggart.

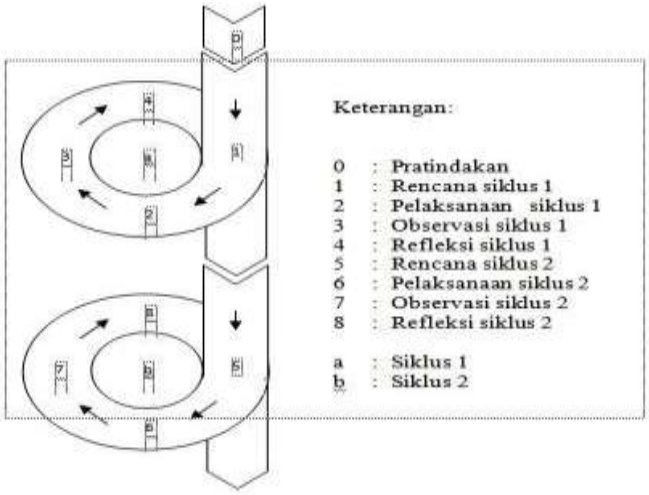

Figure 1. Kemmis dan Taggart Desain

The description of this research design is as follows:

Cycle 1

1. Plan

Activities carried out in the planning stage are as follows:

a. Initial observations

Observations made by researchers aim to determine the initial conditions in order to obtain an overview of the conditions and problems that arise in the research subject

b. Identification of problems

Problem identification is done after the researcher makes observations of the research subject. Identifying these problems will determine the boundaries of the problem and become the basis for a mature HTA planning

c. Develop a research plan

At this stage, the researcher compiles a research plan in the form of an action plan that will be carried out in the research, namely making a learning implementation plan using the Teams Games Tournament (TGT) learning model, compiling an observation format, and compiling a questionnaire measuring mathematics learning motivation

2. The implementation and observation stage

   At this stage, the implementation of the action carries out learning activities in accordance with the plans that have been made. The action was carried out by the researcher as a grade V teacher at SDN Tanjungjati 2 and asked 4 people to be observers. At the stage of implementing the action, the researcher used the Teams Games Tournament (TGT) learning model while the observer observed the activities of students and teachers during the learning process

3. Reflection

   Reflection is carried out by looking for the causes of obstacles that occur during implementation. Therefore, the researcher must analyze the constraints and success rates of the indicators and the achieved motivation to learn mathematics to decide what plans to do in the next cycle.

Next cycle design

Activities carried out in the next cycle are carried out based on the results of reflections taken from cycle 1. The next cycle is an improvement from the activities in the previous cycle. The stages carried out are the same as those carried out in the previous cycle. Researchers plan and implement improvements based on the causes and constraints faced when implementing the action, then analyze the data, and compare the initial

conditions and the final conditions of the cycle. The results of these comparisons then conclude whether the cycle continues or is stopped. The cycle will be terminated if these cycles show an increase in the motivation to learn mathematics of fifth grade students of SDN Tanjungjati 2.

The data collection techniques used in this study were students' mathematics learning motivation questionnaire and observation.

1) Questionnaire student's motivation to learn mathematics

This questionnaire was used to measure and determine the motivation to learn mathematics of the fifth grade students of SDN Tanjungjati 2 Bangkalan in participating in learning using the TGT model. The questionnaire used by researchers is a type of checklist. The checklist used uses the alternative answer "yes and no"

Data collection using a questionnaire was carried out by researchers when mathematics learning was completed before class learning was dissolved, so that it did not interfere with the learning process. This questionnaire was given to students, but the filling was guided by the researcher without any intervention from the researcher.

2) Observation sheet

In this Classroom Action Research, observation aims to monitor the appropriateness of the use of the TGT learning model in the process of teaching and learning mathematics in class V SDN Tanjungjati 2 Bangkalan. Researchers used systematic observation using tools in the form of teacher observation sheets and student observation sheets. The things that were observed were: how the teacher's activities in using the TGT learning model, and how did the students respond during the lesson using the TGT model used by the teacher in mathematics learning. The criteria for the success of action research can be seen from the teacher and student aspects. The success of the teacher is seen in the suitability between the implementation and the TGT learning model strategy in mathematics teaching and learning activities. Meanwhile, the student's success was seen in an increase in their motivation to learn mathematics. Increased motivation

to learn mathematics in students is seen and marked by the achievement of indicators of motivation to learn mathematics, namely learning motivation which students get on average reaches ≥ 75% (Depdiknas, 2008).

3. Result and Discussion

A. Description of Pre Action

The initial activity before carrying out research is to find information about the initial conditions of students. This information was obtained by the researcher assisted by the teacher by distributing questionnaires to fifth grade students of SDN Tanjungjati 2 to determine students' motivation to learn mathematics before being given action. The questionnaire contains 20 questions consisting of 5 indicators of motivation to learn mathematics. When filling out the questionnaire, students receive guidance from the teacher. The results of the pre-action questionnaire with indicators are as follows.

Table 1. The results of the questionnaire on student's motivation to learn mathematics in pre-cycle indicators

Indikator	Butir	Jumlah skor perolehan	Skor ideal	Presentase %	Kategori	Keterangan
Senang terhadap pelajaran matematika dan guru matematika	1	18	25	72	Tinggi	Belum Tercapai
	2	19	25	76	Tinggi	Belum Tercapai
	3	15	25	60	Sedang	Belum Tercapai
	4	16	25	64	Tinggi	Belum Tercapai
	Jumlah	**68**	**100**	**68**	**Tinggi**	**Belum Tercapai**
Kemauan siswa mengerjakan soal-soal matematika, PR dan memperoleh nilai baik	5	10	25	40	Rendah	Belum Tercapai
	6	13	25	52	Sedang	Belum Tercapai
	7	14	25	56	Sedang	Belum Tercapai
	8	21	25	84	Sangat Tinggi	Tercapai
	9	10	25	40	Rendah	Belum Tercapai
	10	12	25	48	Sedang	Belum Tercapai
	11	11	25	44	Sedang	Belum Tercapai
	12	8	25	32	Rendah	Belum Tercapai
	Jumlah	**99**	**200**	**50**	**Sedang**	**Belum Tercapai**
Kesadaran siswa untuk belajar matematika dan mendalami bahan	13	12	25	48	Sedang	Belum Tercapai
	14	22	25	88	Sangat Tinggi	Tercapai
	15	14	25	56	Sedang	Belum Tercapai
	Jumlah	**43**	**75**	**64**	**Tinggi**	**Belum Tercapai**
Kesadaran siswa untuk tidak mencotek	16	11	25	44	Sedang	Belum Tercapai
	Jumlah	**11**	**25**	**44**	**Sedang**	**Belum Tercapai**
Dorongan dari orang tua siswa dan untuk berprestasi	17	12	25	48	Sedang	Belum Tercapai
	18	13	25	52	Sedang	Belum Tercapai
	19	14	25	56	Sedang	Belum Tercapai
	20	8	25	32	Rendah	Belum Tercapai
	Jumlah	**47**	**100**	**47**	**Sedang**	**Belum Tercapai**
Jumlah			**500**	**54,60%**	**Sedang**	**Belum Tercapai**

Based on the table above, the motivation to learn mathematics of grade V SDN Tanjungjati 2 in pre-cycle has a moderate category with an average percentage of 54.60%. In addition, it can be seen that all or all five indicators of motivation to learn mathematics are achieved. The indicator of the student's ability to do math homework is very high. Students' awareness of learning is also very high, but in other indicators the results are low, medium and high. Based on the questionnaire data above, it can be concluded that the average mathematics learning motivation of SDN Tanjunjati 2 students both indicators and individually before being given action is included in the moderate category.

b. Description of Action Results

a. Cycle 1

Activities carried out in the planning stage are making lesson plans and other tools such as observation sheets of learning activities for teachers and student activity. The results of the observations show that in general the teacher has carried out all the strategies in TGT learning. However, the implementation is not optimal because there are still obstacles that occur during the implementation of cycle 1. These constraints are as follows: The teacher's voice is less audible so that students sitting behind do not hear, the teacher does not invite students to pray before closing the lesson, so it is not suitable for the lesson plan, Teaching time mismatch, while teaching, takes a long time because you have to try to calm busy students.

The results of observations in cycle 1 show that students have responded actively to the teacher in using the TGT learning model. Students have started to look happy and motivated because the TGT model media used by the teacher is enough to foster student motivation. In addition, students are also more active because the activities in learning are centered on the students themselves, so that overall it can be concluded that the results of student observations related to the use of the TGT learning model are good and can increase students' motivation to learn mathematics.

However, there are still obstacles in learning in cycle I, namely: Students are not yet brave enough to come forward when answering questions, Students do not understand the material that the teacher delivers through writing on the blackboard.

The results of reflection from the observation data indicate that the learning cycle I is not optimal. The researcher and the teacher evaluate the implementation of learning to be improved in the next cycle. Evaluation was also carried out with students to discuss previous activities, namely the causes of students who were still less active and experienced a slight increase in motivation in learning mathematics. Researchers, teachers and students discussed so that activities at the next meeting can further increase student motivation and activity equally. Determine the design of learning activities that are more fun, namely TGT learning with the addition of image media.

Table 2. The Results of the Student's Mathematics Learning Motivation Questionnaire by Indicators in Cycle 1

Indikator	Butir pernyataan	Jumlah skor perolehan	Skor ideal	Presentase %	Kategori	Keterangan
Senang terhadap pelajaran matematika dan guru matematika	1	19	25	76	Tinggi	Tercapai
	2	22	25	88	Sangat Tinggi	Tercapai
	3	16	25	64	Tinggi	Belum Tercapai
	4	19	25	76	Tinggi	Tercapai
	Jumlah	**76**	**100**	**76**	**Tinggi**	**Tercapai**
Kemauan siswa mengerjakan soal-soal matematika, PR dan memperoleh nilai baik	5	12	25	48	Sedang	Belum Tercapai
	6	17	25	68	Tinggi	Belum Tercapai
	7	18	25	72	Tinggi	Belum Tercapai
	8	22	25	88	Sangat Tinggi	Tercapai
	9	13	25	52	Sedang	Belum Tercapai
	10	14	25	56	Sedang	Belum Tercapai
	11	14	25	56	Sedang	Belum Tercapai
	12	16	25	64	Tinggi	Belum Tercapai
	Jumlah	**126**	**200**	**63**	**Tinggi**	**Belum Tercapai**
Kesadaran siswa untuk belajar matematika dan mendalami bahan	13	15	25	60	Sedang	Belum Tercapai
	14	24	25	96	Sangat Tinggi	Tercapai
	15	19	25	76	Tinggi	Tercapai
	Jumlah	**43**	**75**	**77**	**Tinggi**	**Tercapai**
Kesadaran siswa untuk tidak mencotek	16	15	25	60	Sedang	Belum Tercapai
	Jumlah	**15**	**25**	**60**	**Sedang**	**Belum Tercapai**
Dorongan dari orang tua siswa dan untuk berprestasi	17	16	25	64	Tinggi	Belum Tercapai
	18	19	25	76	Tinggi	Tercapai
	19	17	25	68	Tinggi	Belum Tercapai
	20	14	25	56	Sedang	Belum Tercapai
	Jumlah	**66**	**100**	**66**	**Tinggi**	**Belum Tercapai**
Jumlah			**500**	**68,40%**	**Tinggi**	**Belum Tercapai**

Based on table 2 above, the motivation to learn mathematics of grade V SDN Tanjungjati 2 in Cycle 1 has a high category with an average percentage of 68.40% but it has not been achieved. In addition, it can be seen that all or the five indicators of motivation to learn mathematics have been achieved. The indicator of the student's ability to do math homework is very high. Student's awareness of learning is also very high, but in other indicators the results are low, medium and high. Based on the questionnaire data above, it can be concluded that the average mathematics learning motivation of SDN Tanjunjati 2 students both indicators and individually before being given action is in the high category but has not been achieved.

b. Cycle 2

Based on the results of reflection in cycle 1, then in cycle 2 the improvement plan carried out by the researcher was to make lesson plans and other tools such as observation sheets of learning activities for teachers and student activity. The results of observations in cycle 2 show that the teacher is able to use the TGT learning model well. The teacher has applied learning that activates all students by providing equal opportunities to speak and express opinions. In addition, the teacher is able to adjust the activity time with the time in the RPP, the teacher has also memorized the sequence of activities so that the activity can run effectively.

The results of observations of students in cycle 2 showed that there had been an increase in student motivation and activity in class. This is shown in the number of students who answered the games. Students have also seen a visually significant increase in motivation in the mathematics learning process at the end of cycle 2. This can be seen in the activities and statements of many students who say that they will always study diligently if the learning is always fun like that. It has shown that they have high motivation towards learning mathematics when using the TGT learning model. In this second cycle, there were no significant obstacles to students. So it can be concluded that in general the use of the TGT learning model in cycle 2 is better and can be said to be successful than cycle 1.

The results of the reflection from the observation data show that the learning from cycle 2 is better than cycle 1. The teacher is able and can use the TGT learning model. Researchers, teachers and students evaluate the implementation of learning to see if there are obstacles that occur and find the cause. However, after conducting a joint evaluation, there were no significant obstacles, there were only minor obstacles such as the desire of students to increase class hours because they were too happy to learn.

The results of the mathematics learning process using the TGT learning model in cycle 2, then assessed the students' motivation to learn mathematics using a questionnaire. Assessment of the success of cycle 2 is carried out by giving questionnaires to students. The results of the indicator questionnaire obtained in cycle 2 are as follows.

Table 3. The results of the Student's Mathematics Learning Motivation Questionnaire by Indicators in Cycle 2

Indikator	Butir pernyataan	Jumlah skor perolehan	Skor ideal	Presentase %	Kategori	Keterangan
Senang terhadap pelajaran matematika dan guru matematika	1	24	25	96	Sangat Tinggi	Tercapai
	2	25	25	100	Sangat Tinggi	Tercapai
	3	23	25	92	Sangat Tinggi	Tercapai
	4	24	25	96	Sangat Tinggi	Tercapai
	Jumlah	**96**	**100**	**96**	**Sangat Tinggi**	**Tercapai**
Kemauan siswa mengerjakan soal-soal matematika, PR dan memperoleh nilai baik	5	23	25	92	Sangat Tinggi	Tercapai
	6	24	25	96	Sangat Tinggi	Tercapai
	7	23	25	92	Sangat Tinggi	Tercapai
	8	25	25	100	Sangat Tinggi	Tercapai
	9	22	25	88	Sangat Tinggi	Tercapai
	10	22	25	88	Sangat Tinggi	Tercapai
	11	23	25	92	Sangat Tinggi	Tercapai
	12	24	25	96	Sangat Tinggi	Tercapai
	Jumlah	**186**	**200**	**93**	**Sangat Tinggi**	**Tercapai**
Kesadaran siswa untuk belajar matematika dan mendalami bahan	13	24	25	96	Sangat Tinggi	Tercapai
	14	25	25	100	Sangat Tinggi	Tercapai
	15	25	25	100	Sangat Tinggi	Tercapai
	Jumlah	**43**	**75**	**99**	**Sangat Tinggi**	**Tercapai**
Kesadaran siswa untuk tidak mencotek	16	24	25	96	Sangat Tinggi	Tercapai
	Jumlah	**24**	**25**	**96**	**Sangat Tinggi**	**Tercapai**
Dorongan dari orang tua siswa dan untuk berprestasi	17	25	25	100	Sangat Tinggi	Tercapai
	18	23	25	92	Sangat Tinggi	Tercapai
	19	23	25	92	Sangat Tinggi	Tercapai
	20	23	25	92	Sangat Tinggi	Tercapai
	Jumlah	**94**	**100**	**94**	**Sangat Tinggi**	**Tercapai**
Jumlah			**500**	**95,60%**	**Sangat Tinggi**	**Tercapai**

Based on the table above, the motivation to learn mathematics of grade V SDN Tanjungjati 2 in Cycle 2 is in a very high category with an average percentage of 95.60% and it has been achieved. In addition, it can be seen that all or the five indicators of motivation to learn mathematics have been achieved. The indicator of the student's ability to do math homework is very high. Students' awareness of learning is also very high, but in other indicators the results are low, medium and high. Based on the questionnaire data above, it can be concluded that the average mathematics learning motivation of SDN Tanjunjati 2 students both indicators and individually before being given action is in the very high category and has been achieved. Based on the results of the research, the motivation to learn mathematics of grade V SDN Tanjungjati 2 at the end of the first cycle experienced an increase from the pre-cycle results, but not optimal. In the first cycle, students' motivation to learn mathematics grew after playing games answering questions in front of the class when representing advanced groups. Activities of giving experiences to students are always visible at every meeting. The teacher uses concrete objects in the form of flat-shaped objects that are in the environment around students so that students can identify their properties directly so that students really understand the material they are learning. However, after the observation and reflection from the first cycle, the increase in students' motivation to learn mathematics as a whole was not maximized due to obstacles and one of the indicators of student mathematics learning motivation had not been achieved. The obstacle is that students are not yet brave enough to come forward when answering questions, and students do not understand the material that the teacher delivers through writing on the blackboard.

In addition, teachers and students are still awkward, lose their focus on learning when the observer documents the activities, and the teacher has not adjusted the timing of the activities to the plans that have been prepared. The teacher also still lacks mastery of the material and forgets some of the activities in the lesson plans, especially the student success stage, so that

sometimes the teacher replaces them with other activities. This was caused by the teacher's negligence in remembering and paying attention to the sequence of activities and time adjustments to the lesson plans. Therefore, in cycle 2 observers need to reduce activities that interfere with the focus of learning. In addition, teachers need to learn material from many learning sources, remember well the sequence of activities and timing of implementation and make improvements by compiling learning plans that emphasize student motivation both verbally and providing opportunities for students to speak and express opinions and answer questions. This activity can be seen in the demonstration that was carried out by students at each meeting in cycle 2, namely providing opportunities by the teacher for all students to share knowledge with each other. In addition, students also share the information they have with other friends on the knowledge they have and don't have by other friends.

In the second cycle there was also an increase in motivation to learn mathematics. This can be seen from the increase in students who have the category of motivation to learn mathematics from 68.40% high but not yet reached to 95.60% which is very high and achieved. Therefore, the motivation to learn mathematics individually is said to have increased after the implementation of the TGT learning model. The increase in the motivation to learn mathematics of grade V SDN Tanjungjati 2 students after applying the TGT learning model was obtained based on the results of a questionnaire on the motivation to learn mathematics. Pre-cycle = 54.60%, Cycle 1 = 68.40%, Cycle 2 = 95.60%. Based on the recapitulation of the mathematics learning motivation questionnaire, the average grade V SDN Tanjunjati 2 students in pre-cycle, cycle 1 and cycle 2. Student's motivation to learn mathematics has increased. From the research results, it is proven that the TGT learning model can increase students' motivation to learn mathematics. This can be seen from the increase in students' average mathematics learning motivation in pre-action by 54.60%, in cycle 1 it increased by 68.40%, and in cycle 2 it increased again by 95.60% so that it

was in accordance with the research success criteria, namely learning motivation. Mathematics of students on average was ≥75% (Depdiknas, 2008).

4. Conclusion

Based on the results of research and discussion of the motivation to learn mathematics through the TGT learning model in class V SDN Tanjungjati 2 students, it can be concluded that the TGT learning model can increase the motivation to learn mathematics of class V SDN Tanjungjati 2. In pre-cycle, the average motivation to learn mathematics 54.60%. In cycle 1, the teacher applies the TGT learning model so that there is an increase in students' mathematics learning motivation by 68.40%. However, there are still obstacles that cause student learning motivation to not achieve the criteria of success evenly. After these constraints are fixed, there is an increase in student learning motivation by 95.60% at the end of cycle 2.

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