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The Implementation of the Cooperative Model Reviewed from Motivation Towards Learning Achievement of Class XII Students at Guppi High School

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Abstract : This type of research is an experimental research involving two experimental groups. The sample in this study was class XII. 1 as experimental class 1 and class XII. 2 as experimental class 2. Data were collected using questionnaires, tests, and observation sheets. The data were then analyzed descriptively and two-way analysis of variance (ANOVA) and continued with a post hoc test. The results of the study showed that (1) the average mathematics learning achievement of students using the Talk Stick cooperative learning model was 88.7 out of an ideal value of 100 with a very high category, (2) the average mathematics learning achievement of students using the Example Non-Example cooperative learning model was 87.6 out of an ideal value of 100 with a very high category, (3) there was a significant difference in mathematics learning achievement between students with high, medium, and low learning motivation with a significance of 0.001, and (4) there was no interaction between the cooperative learning model and motivation on mathematics learning achievement with a significance of 0.306.

Keywords : cooperative, model, learning, achievement, motivation

1. INTRODUCTION

Mathematics is one of the supporting factors in achieving educational goals in educating the nation and state. "Mathematics is a way of logical thinking presented in numbers, space, and forms with existing rules that are inseparable from human activity", (Amir and Risnawati, 2016: 9). Student success in learning depends on the way the subject matter is presented and the learning model applied by the teacher. There are several factors that influence student learning achievement, one of which is motivation. Seeing the reality and demands of education that are guided by the current 2013 curriculum, teachers are required to apply the curriculum as much as possible. The learning model that adheres to constructivism that is relevant to the characteristics of mathematics and the objectives of mathematics learning is cooperative learning (Manullang, 2017: 5). The cooperative learning model can meet students' needs in critical thinking, solving problems, and integrating knowledge with experience. The talk stick type cooperative learning model and the example non-example type cooperative learning model are appropriate for application to the subject of functions. The talk stick type cooperative learning model is a cooperative learning model with the help of a stick, the group holding the stick must first answer questions from the teacher after students have studied the main material, then the activity is repeated continuously until all groups get a turn to answer

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questions from the teacher. In addition to practicing speaking, this learning model will create a pleasant atmosphere and make students active. Meanwhile, the example non-example type cooperative learning model is an alternative learning model that uses examples in everyday life and not examples in everyday life through image media related to the material to be delivered. Through this model, students are given the opportunity to analyze and discuss examples of images that are arranged and designed, then presented in front of the class. The use of images is arranged and designed so that students can analyze the image regarding what is in it. In addition, the example non-example type cooperative learning model fully involves students in the learning process, so that from the beginning of learning preparation to learning evaluation it can provide meaningful learning to students.

2. LITERATURE REVIEW

Understanding Cooperative Learning Models

The concept of cooperative learning is broader, encompassing all types of group work including forms that are more teacher-led or teacher-directed. Suprijono (2009: 61) states that cooperative learning models are developed to achieve learning outcomes in the form of academic achievement, tolerance, accepting diversity, and developing social skills.

Lungdren (Isjoni, 2009: 16) put forward elements in the cooperative learning model, namely:

a. Students must have the perception that they "sink or swim together";

b. Students must have responsibility for other students or students in their group, in addition to responsibility for themselves in learning the material being faced;

c. Students must think that they all have the same goal;

d. Students divide tasks and share responsibilities among group members;

e. Students are given an evaluation or award that will also affect the group evaluation;

f. Students share leadership while they gain skills in working together during learning;

g. Each student will be asked to be individually responsible for the material handled in the cooperative group.

Cooperative Learning Model Type Talk Stick

The cooperative learning model type talk stick is a learning model with the help of a stick, where the stick is ± 30 cm long and whoever is given the stick first must answer questions from the teacher, after the students have studied the main material, (Mardiana & Arapu, 2015:5). Talk stick is one of the cooperative learning models that emphasizes active participation from students so that the learning process will be fun and not monotonous and only centered on the teacher. In addition to practicing speaking, this learning will create a pleasant atmosphere and make students active, Suprijono (Sriyanti, 2015: 23).

Understanding the Example Non Example Cooperative Learning Model

The example non example cooperative learning model is an alternative learning model that uses examples in everyday life and not examples in everyday life through image media related to the material to be delivered. Through this model, students are given the opportunity to analyze and discuss examples of images that are arranged and designed, then presented in front of the class. The use of images is arranged and designed so that children can analyze the image regarding what is in it. In addition, the example non example cooperative learning model fully involves students in the learning process, so that from the beginning of learning preparation to learning evaluation, it can provide meaningful learning to students, (Kurniati, 2019: 24-25).

Understanding Learning Motivation

Dimyati and Mudjiono (Kamaluddin, 2017:4) define motivation as a mental drive that drives and directs human behavior including learning behavior. While Emily (Kamaluddin, 2017:4). Motivation comes from the word motive which means the power within an individual, which causes the individual to act and do (Hamzah, 2007: 3). In this case, he emphasized that motives cannot be observed directly, but can be interpreted from their behavior, in the form of encouragement, stimulation, or power generation to do something.

Function, Role, and Importance of Motivation in Learning Mathematics

Motivation is the key to learning. Learning motivation is important for both students and teachers. Pintrich, & Schunk (Gasco et al, 2014: 1026 - 1031) "Motivation plays a key role in learning; it will largely explain academic performance because it is a

construct that integrates thoughts and feelings. It can be understood as a process that directs us to the target or goal of an activity that incites and maintains".

3. METHODS

This type of research is an experimental research involving two groups, namely experimental group one and experimental group two. Experimental group one was taught using the talk stick type cooperative learning model and experimental group two was taught using the example non example type cooperative learning model. The instruments used by the researcher were: Learning achievement test, Mathematics learning motivation questionnaire, Learning implementation observation sheet. There are three techniques used to collect data in this study, namely test techniques, observation, and questionnaires. The data that has been collected using test instruments and non-test instruments, are then analyzed descriptively (learning implementation data, student activities in learning, student motivation, and student learning achievement) and inferentially to answer the research hypothesis.

4. RESULTS

Hypothesis test results

Table 1. The results of the 2-way variance analysis using SPSS 24.0

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1100,167[a]	5	220,033	3,989	0,004
Intercept	254566,157	1	254566,157	4615,204	0,000
motivasi	992,959	2	496,479	9,001	0,001
model	41,201	1	41,201	0,747	0,392
motivasi * model	134,006	2	67,003	1,215	0,306
Error	2537,275	46	55,158		
Total	407911,000	52			
Corrected Total	3637,442	51			
a. R Squared = ,302 (Adjusted R Squared = ,227)					

The results of hypothesis testing 1 can be seen in table 4.15. Based on table 4.15 in the model row, a significance value (sig) = 0.392 is obtained which is more than 0.05. This indicates that H_0 is accepted, which means that there is no significant difference in mathematics learning achievement between students taught using the talk stick type cooperative learning model and the example non example type cooperative learning model. The results of hypothesis testing 2 can be seen in table 4.15. Based on table 4.28 in the motivation row, a significance value (sig) = 0.001 is obtained which is less than 0.05. This

indicates that H_0 is rejected. In other wordsH_1 is accepted, which means there is a significant difference in mathematics learning achievement between students with high, medium, and low learning motivation. The results of hypothesis 3 testing can be seen in table 4.15. Based on table 4.15 in the motivation * model row, a significance value (sig) = 0.306 is obtained which is more than 0.05. This shows that H_0 is accepted, which means there is no interaction between the cooperative learning model and motivation on mathematics learning achievement of class XII MA Darussalam.

Comparison test between row means

To find out the average learning achievement in each high, medium, and low motivation group, see table 2

Table 2. Description of the Average Learning Achievement of High, Medium, and Low Motivation

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
motivasi_tinggi	7	94,43	6,925	2,617	88,02	100,83	81	100
motivasi_sedang	35	89,20	7,745	1,309	86,54	91,86	72	100
motivasi_rendah	10	80,20	6,356	2,010	75,65	84,75	74	93
Total	52	88,17	8,445	1,171	85,82	90,52	72	100

Based on table 2, it is obtained that the average mathematics learning achievement of students who have high motivation is 94.43 with the lowest score being 81 and the highest score being 100. For moderate motivation, the average learning achievement is 89.20 with the lowest score being 72 and the highest score being 100, while the average mathematics learning achievement of students who have low motivation is 80.20 with the lowest score being 74 and the highest score being 93.

Table 3. Post Hoc Test Results

	(I) motivasi belajara matematika	(J) motivasi belajar matematika	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
LSD	motivasi_tinggi	motivasi_sedang	5,229	3,068	0,095	-,94	11,39
		motivasi_rendah	14,229*	3,652	0,000	6,89	21,57
	motivasi_sedang	motivasi_tinggi	-5,229	3,068	0,095	-11,39	0,94
		motivasi_rendah	9,000*	2,657	0,001	3,66	14,34
	motivasi_rendah	motivasi_tinggi	-14,229*	3,652	0,000	-21,57	-6,89
		motivasi_sedang	-9,000*	2,657	0,001	-14,34	-3,66
*. The mean difference is significant at the 0.05 level.							

Based on table 3, for high motivation with moderate motivation, the significance value is = 0.095. A significance value of more than 0.05 can be concluded that the mathematics learning achievement of students who have high learning motivation with those who have moderate motivation is not significantly different. For high motivation with low motivation, the significance value is = 0.000. A significance value of less than 0.05 can be concluded that the mathematics learning achievement of students who have high learning motivation with those who have low motivation is significantly different. The average difference is 14.229. For moderate motivation with low motivation, the significance value is = 0.001. A significance value of less than 0.05 can be concluded that the mathematics learning achievement of students who have moderate learning motivation with those who have low motivation is significantly different. The average difference is 9.

5. DISCUSSION

This empirical finding supports the theoretical review put forward by Sardiman (Kamaluddin, 2017:5) that learning motivation is a non-intellectual psychological factor that can increase passion, pleasure and enthusiasm in learning. Students with high motivation will have a lot of energy to carry out learning activities. In the learning process, of course there are things that want to be achieved which many experts call learning achievement. The drive to achieve this learning achievement is called achievement motivation (*achievement motivation).* Schiefele dan Csikszentmihalyit (Kamaluddin, 2017:6) menyatakan bahwa "... *achievement motivation as a preference for high standards of performance or as the willingness to work hard and persistently to reach these standards".* Achievement motivation is the desire or wish to do something persistently and earnestly to achieve a certain standard.

6. CONCLUSION

Based on the results of the research and discussion, several conclusions can be drawn, namely (1) The average mathematics learning achievement of students using the talk stick type cooperative learning model is 88.7 out of an ideal score of 100 with a very high category. (2) The average mathematics learning achievement of students using the example non-example type cooperative learning model is 87.6 out of an ideal score of 100 with a very high category. With the average mathematics learning achievement of students using the talk stick type cooperative learning model of 88.7 and the average mathematics learning achievement of students using the example non-example type cooperative learning model of 87.6 out of an ideal score of 100 with a very high category, it should be used as an alternative learning model to be applied to students in mathematics learning, especially on the subject of functions. (4) There is a significant difference in mathematics learning achievement between students who have high, medium, and low learning motivation with a significance of 0.001 in students (5) There is no interaction between the cooperative learning model and motivation on the mathematics learning achievement of class XII students. There is no interaction between the cooperative learning model and motivation towards students' mathematics learning achievement in class. It is hoped that other researchers can conduct further research on the interaction between the cooperative learning model and motivation towards students' mathematics learning achievement.

LIMITATION

There is no interaction between the cooperative learning model and motivation towards students' mathematics learning achievement in class. It is hoped that other researchers can conduct further research on the interaction between the cooperative learning model and motivation towards students' mathematics learning achievement.

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