IMPROVING THE RESULTS OF MATH LEARNING THROUGH SCRAMBLE COOPERATIVE MODEL WITH THE APPROACH OF CONTEXTUAL TEACHING AND LEARNING MODEL

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Abstract

This research is motivated by the desire of the author to enhance students' skills and learning design that is not centered on the teacher. Thus, this study aims to improve students' mathematics learning outcomes through Scramble Cooperative Learning Model with Contextual Teaching and Learning (CTL) Approach at the class VIIIB SMP Negeri 1 Latambaga. The study was conducted on 28 April 2015 s / d dated May 28, 2015. The subject of this research is class student of SMP Negeri 1 Latambaga VIIIB. This research is a Classroom Action Research conducted in two cycles with study procedures: (a) Conducting planning to implement the learning process, (b) Implement the action in accordance with the plan, (c) Conducting observations of students and teachers during the process of the action takes place, (d) Conducting evaluations / tests to students in each end of the cycle, (e) to reflect and analyze the shortcomings and weaknesses during the first cycle for the plan of action on the second cycle. The results obtained are in action first cycle, the learning outcomes of students increased from an average score of initial tests before action is 68.25 into 77.71 or 78.12% with the percentage of completeness that 25 of the 32 students received grades ≥75, it this has not shown success according to defined indicators of success. In the second cycle of the results obtained are as many as 27 students get value ≥75 with an average value of 83.15 or with a percentage of 84.37%. This means that the results of the research for cycle I and cycle II. It can be concluded that the results students grade VIIIB of SMP Negeri 1 Latambaga on material geometry through cooperative learning model scramble with CTL approach that took effect on improvement of learning outcomes.

Keywords: *Math Learning Outcomes, Cooperative Learning Model Scramble approach Contextual Teaching and Learning (CTL).*

A. Introduction

Education is one of the things that should be put forward for every citizen who wants progress of his people, because the science education can be developed. Besides, education geared towards the creation of quality human resources. This indicates that human resources become very dominant in the learning process, it also means that managing human resources is a very important area to implement the learning process in schools.

Mathematics is the science that aims to educate children to think logically, critically, systematically, has the objective nature, honest, disciplined in solving the problems of everyday

life both in the field of mathematics and other fields of study, so it is important mathematics is taught. But the reality on the ground, learning of mathematics is not as expected. A lot of the background factors of the case, including the lack of involvement of the student in the learning of mathematics and the use of the methods in learning.

Learning activities should be able to provide and encourage the widest possible choice of approaches liveliness inaccuracies or learning strategy is very possible involvement of the student becomes not flourish, even be it loses its activity. Furthermore, the level of activity of students in a learning process also is a measure of the quality of learning itself. The success of a teacher will be assured, if the teacher was able to take his students to understand the problem through all stages of the learning process, because that way the student will understand the things that are taught. Thus, in the teachers' learning process should be able to use the models and teaching approaches that can guarantee successful learning as has been planned.

Based on observations of mathematics learning in junior class VIIIB Negeri1 Latambaga by the number of students 32 people on Monday, 27 April 2015 found five gaps, namely: (1) Students are rarely asked the teacher about the subject matter that has been submitted by teachers. (2) Students are reluctant to work on the problems on the blackboard. Students want to work on the problems on the board only when designated by the teacher. (3) Students are rarely raised the idea or ideas. (4) Cooperation in solving exercises students are lacking. (5) Most of the students there were bantering and less attention to the teacher's explanation. Gaps found in class VIIIB caused namely: (1) Students are embarrassed to ask questions and do not understand the material presented by the teacher. (2) Learning strategies used are conventional and students feel fear either to work on the problems on the board. (3) Teachers rarely use learning strategies that encourage students to develop the mindset and express ideas. (4) The students prefer to work on the problems individually. (5) The strategy used by teachers tends to be monotonous and less innovative.

Sutikno (2009: 8) suggests there are several factors that affect the learning process, both factors that come from within the individual learning (internal) as well as factors that come from outside (external) or it could be a combination of both factors. Elucidations of these factors are the following:

1. Factor of the individual (internal)

     Factors that come from within the individual (internal factors) are classified into 2 of the physical or physiological factors greatly influence the process and the learning achievement of children. Which includes physical factors are factors of health and disability factors. In addition, psychological factors that can affect students' learning process must be considered. These factors include: intelligence, motives, interests, emotions, talents, maturity, and readiness.

2. External Factors

     The success of learning is also strongly influenced by factors outside the student (external factors). The external factors that affect the learning process can be classified into three namely: family factors, school factors, and community factors.

     Based on data from test results semester of the year 2014-2015 were obtained from the curriculum of SMP Negeri 1 Latambaga. The information was dealing with the math learning outcomes of class VIIIB. In the subject matter prior to implementation of the study (pre-cycle), where the number of students who achieve the level of mastery learning only 53% of 32 people, considering the high value of KKM in SMP Negeri 1 Latambaga of 75 as determined by the school so as to have mathematical achievement is unsatisfactory.

     Based on the results of these observations, the researchers tried to apply an alternative action that form the application of learning models that prefer the liveliness of the students, giving students the chance to develop the potential and creativity to the maximum, as well as providing great opportunities for students to work together among the other student with the other students. One of the learning models used is a model of cooperative learning approach Scramble mode Contextual Teaching and Learning (CTL).

As noted by Taylor in Huda (2013: 303) states that, Scramble is one model of learning that can improve students' concentration and speed of thought. In line with the issues raised in the school SMP Negeri 1 Latambaga writer tries to do research to find solutions to the problems that have been raised previously by the model of Cooperative Learning Type Scramble approach Contextual Teaching and Learning (CTL) that is expected to improve the learning of

mathematics and further improve learning outcomes and learning is not only centered on the teacher, but the students can be more active.

Based on the explanation or clarification of the author, it was motivated to carry out action research by combining models and learning approaches that are expected to improve learning outcomes in the classroom. So the authors raised the title of the study.

B. Literature Review

Winkel (1987: 77) states that the learning outcomes are intellectual abilities that have become private property that allows that person to do something or leave a particular achievement.

One of the outcomes of learning is mastery learning materials or so-called achievements. It is the result of an activity that has been done, created either individually, in pairs or in groups. Many activities are usually used as a target to get an achievement. Based on these achievements need to be developed in a group learning one such learning is cooperative learning. Hartono (2013: 101) states cooperative learning or (in Bahasa; gotong-royong, ed) is a form of teaching that divides students into groups that cooperate with one another to solve the students' problems. Cooperative learning is a learning approach that focuses on the use of small groups of students to work together to maximize the learning conditions for achieving the learning objectives.

There are five elements that must be applied to achieve maximum results in cooperative learning: (a) positive interdependence; (B) individual responsibility; (C) face to face; (D) communication among members; (E) the evaluation process groups (Lie, 2005: 31). There are many types of cooperative learning one of them is Scramble is a method of teaching by distributing a booklet and answer sheet accompanied by alternative answers provided. Students are expected to seek the answer and the solution to a problem that exists. Widodo (2009: 1). Scramble is one type of cooperative learning that is presented in the form of a card as follows:
1. The teacher presents the material according to the basic competence to be achieved.
2. Distributing student worksheet (LKS).

Scramble type of cooperative learning was developed and accompanied by LKS. It would be more meaningful when LKS developed associated environmental problems of students. According to Kunadar (2007: 17) contextual learning is a teaching that allows students strengthen, expand, and apply knowledge and skills in a variety of school settings and out of school to solve the whole problem that exists in the real world.

Mulyasa (Hartono, 2013: 83) Contextual Teaching and Learning is a learning concept that emphasizes the link between the worlds of learning materials to learners in real life, so that learners are able to connect and apply the competencies of learning outcomes in everyday life.

C. Methodology
1. Types of Research
    This study is a class action (Classroom Action Research). Classroom action research is action research done in class by having a repeating cycle.
2. Time and Place of Research
    This research has been carried out on April 28, s / d May 28, 2015 the second semester of academic year 2014/2015 in class VIIIB SMP Negeri 1 Latambaga.
3. Subject of Research
    Subjects in this study were students VIIIB SMP Negeri 1 Latambaga the academic year 2014/2015, which consisted of 32 male students.
4. Research Instruments
   This study uses two types of data collection instruments are: the observation sheet and achievement test.
5. The procedure of Research
    The procedure of classroom action research is planned in cycles, with each cycle carried out in accordance with the change to be achieved on the factors investigated. The procedures of this study are as follows:
    a. Planning
    b. Implementation of Actions
    c. Observation and Evaluation

d. Reflection.

    This study was designed based on the Lewin's model. Chart of design of this study are as follows:
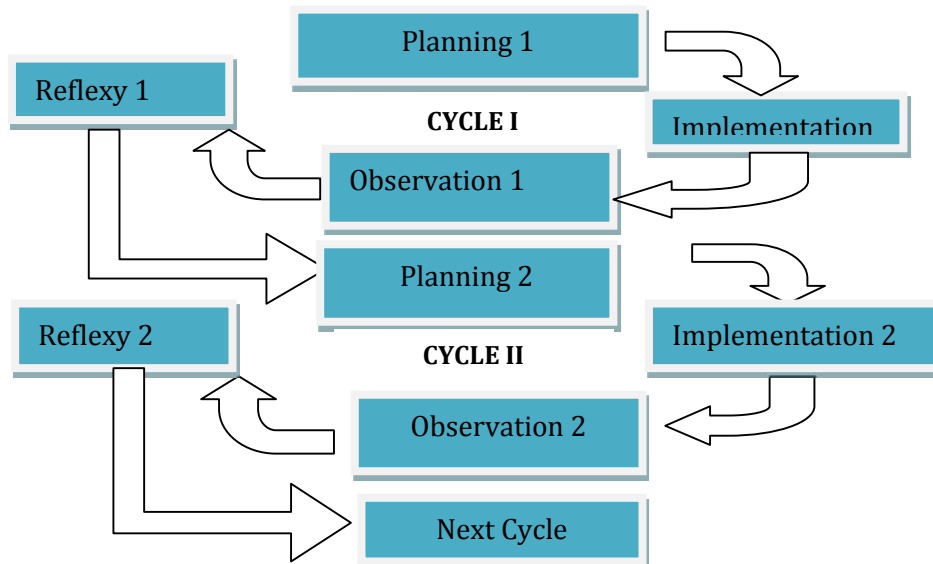
Figure 1. Planning and model of Classroom Action Research (CAR)
(Elliot in Nugroho 2010: 43)

5. Technique of Data Collection
    1. Data collection techniques needed in this research are:
       Data concerning activity of students in the learning process, the data obtained from observations during the learning process takes place through cooperative learning model of Scramble mode with Contextual Teaching and Learning (CTL) approach using observation sheet of students and teachers.
    2. Data on students 'mathematics learning outcomes through tests taken by the students' learning outcomes.
6. Technique of Data Analysis
    Data obtained from this study were analyzed using descriptive quantitative analysis; the analysis is based on the percentage of student learning outcomes. Whereas qualitative descriptive analysis, namely, analysis of data obtained from the observation of the activities of teachers and students' activity, then calculated the percentage and converted into the qualification as well as for student learning outcomes assessment criteria shown in the following table:

Table 1. Qualification Assessment Activities for Teacher and Students

No	Percentage%	Qualification
	86-100	Very Good
	76-85	Good
	66-75	Enough
	56-65	Poor
	≤ 55	Very Poor

Table 2. Student Learning Outcomes Assessment Criteria

No	Interval	Increased Level
1.	90 – 100	Veri High
2.	80 – 89	High

3.	65 – 79	Enough
4.	55– 64	Low
5.	< 54	Very Low

Depdiknas (2003: 15)

D. Finding and Discussion
1. Findings

The resulting increase in mathematics learning outcomes through cooperative learning model of Scramble mode with Contextual Teaching and Learning (CTL) approach students in cycle 1 and 2 that is shown in Table 3 and Table 4.

Table 3. Improved Learning Outcomes Mathematics in Cycle 1

No	Obtained Value	Number of Students (Frequency)	Percentage	Value Qualification
1	90 – 100	5	15,62%	Very Good
2	80 – 89	11	34,37%	Good
3	65 – 79	11	34,37%	Enough
4	55 – 64	3	9,37%	Poor
5	< 54	2	6,25%	Very Poor
Total		32	100%	
Mean		77,71		
Standard of Deviation		13,20%		Enough
The percentage of classical completeness		78,12%		

Based on the table 3, it can be seen that there are 5 students get value of 90-100 (15.62%), 11 students scored at 80-89 (37.37%), 11 students scored at 65-79 (34, 37%), and 3 students scored at 55-64 (9.37%), and 2 students scored at <54 (6.25%). At this stage, the overall percentage of the implementation of the first cycle is 78.12%.

Table 4. Improved Learning Outcomes Mathematics in Cycle 2

No	Obtained Score	Number of Student (Frequency)	Percentage	Value Qualification
1	90 – 100	9	28,12 %	Very Good
2	80 – 89	13	40,62 %	Good
3	65 – 79	8	25 %	Enough
4	55 – 64	-	0 %	Poor
5	< 54	2	6,25 %	Very Poor
Total		32	100 %	
Mean		83,15		
Standard of Deviation		12,30%		Good
The percentage of classical completeness		84,37%		

Table 4. Based on these, it can be seen that there are 9 students get value of 90-100 (28.12%), 13 students scored at 80-89 (40.62%), 8 students scored at 65-79 (25%), and 2 students scored at <54 (6.25%). At this stage, the overall percentage of the implementation of the second cycle is 84.37%. Based on the analysis of students' mathematics learning outcome, it can describe the mastery of mathematics learning results from the initial test that is shown in Table 5.

Table 5. The completeness of results of Math Learning Grade VIII B of SMP Negeri 1 Latambaga

Description	Pre-test	Cycle 1	Cycle 2
Mean	68,25	77,71	83,15

| The percentage of classical completeness | 46,87% | 78,12% | 84,37% |

Table 5 shows that the value of the classical mastery learning at pretests of 46.87% with an average of 68.25. In the first cycle of 78.12% with an average of 77.71, the second cycle of 84.37% with an average of 83.15. Furthermore, the average completeness student learning outcomes in pretests to the first cycle increased 9.46. In the first cycle to the second cycle increased 5.44. So it can be concluded that improvement of student learning outcomes from pretests to the second cycle is at 14.9. While for the completeness in the classical student learning outcomes in pretest to the second cycle can be seen in the following figure:
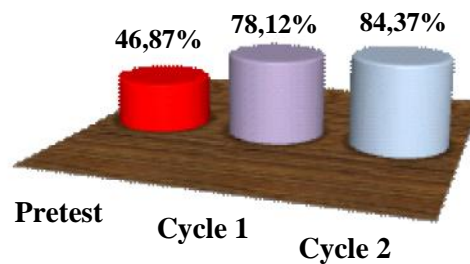

Figure 2 shows that the completeness of student learning outcomes in the classical style in pretest to the first cycle increased by 31.25%. In the first cycle to the second cycle increased 6.25%. So it can be concluded that improvement of student learning outcomes in the classical style of pretest to the second cycle of 37.5%.

Based on these descriptions, can be concluded that by using model Cooperative Learning of Scramble Type of Contextual Teaching and Learning (CTL) approach can improve students' learning outcomes, although not very satisfactory, but it is considered good enough for higher than before using the Cooperative Learning model of Type Scramble of Contextual Teaching and Learning (CTL) approach.

The performance indicators in this study have been achieved due to (1) observations of teachers and students has increased or improved each meeting, and (2) the value of the evaluation results in the classical also increased after the implementation of the model of Cooperative Learning Type Scramble of Contextual Teaching and Learning (CTL) approach in two cycles.

Thus, the answer to the problems of this research has revealed that using cooperative learning model Scramble mode approach Contextual Teaching and Learning (CTL) can improve learning outcomes and the ability VIIIB grade students of SMP Negeri 1 Latambaga.

2. Discussion

This study was successfully after the implementation of the second cycle having reached the predetermined performance indicators. In preliminary tests, 15 students received grades ≥ 75 and 17 students still take into by the value of <75 or classically 46.87% of students do not reach KKM with an average value of 68.25. In the first cycle, students who received grades ≥ 75 is 25 people or classical learning completeness 78.12% with an average value of 77.71. In the first cycle can be said to have increased when compared to the results of the student prior to the action with an increase of 31.25%. The low value of students on initial tests and the first cycle because students are still less familiar grouped and less familiar with the explanation of the teacher but did not dare to ask and many students are paying less attention to the teacher's explanation, and there are still some students was still splashing-joke with friends. Because the learning outcomes do not meet the performance indicators established in the classical mastery learning which at least 80%, the study continued in the second cycle.

After the second cycle, the acquisition of student scores increased by an average value was 83.15 with classical learning completeness 84.37%, while the first cycle of students

are only able to obtain an average value is 77.71 with 78.12% classical completeness. This means an increase of 6.25% on the completeness study. From the 32 students, 27 students who took the test scored at ≥75 evaluation. Based on observation and evaluation, the research was stopped in the second cycle, as indicators of the success of this research has been reached with the achievement of the performance indicators of ≥ 80% in this study is 84.37%, meaning researchers have reached the destination.

The results are consistent with research (Handini: 2012) which concludes that by applying the model of cooperative learning Scramble mode can improve learning activities and student learning outcomes by 77.41%. (Fitriany: 2013) concluded that the learning approach Contextual Teaching and Learning (CTL) can improve student learning outcomes 80%. Furthermore, the opinion supported Johnson (2012: 62). That by learning Contextual Teaching and Learning (CTL) succeeded because the system is asking students to act in a natural way. How it fits with the function of the brain, basic human psychology, and the three principles of the universe discovered by modern physicists and biologists. These principles are interdependent, different, and self-regulated.

Based on the description, it can be concluded that through a cooperative learning model Scramble type of Contextual Teaching and Learning (CTL) approach can improve students' learning outcomes at class VIIIB of SMP Negeri 1 Latambaga.

3. Conclusion

Based on the results of research and discussion, it can be concluded that with the implementation of the model of Cooperative Learning type Scramble invitation of Contextual Teaching and Learning (CTL) approach, can improve student learning outcomes in mathematics, especially on basic competence calculate surface area and volume of cubes and blocks graders VIIIB SMP Negeri 1 Latambaga learning year 2014/2015. This is indicated by the value after the first cycle measures increased compared with the initial 68.25 into 77.71. But this has not reached the predetermined performance indicators. Furthermore, the average value of students after the second cycle of increase compared with the value of the average student on the implementation of the first cycle that action be 83.15 and 77.71 have fulfilled predetermined performance indicators that more than 80% of students have scored at least 75.

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