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The Implementation of Group Method to Improve Students' Outcomes in Learning Simple Plane

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Abstract

This research was conducted to find out the implementation of group method can improve student learning outcomes in grade V at math in simple plane material. The type of this research is classroom action research which conducted in 2 cycles and each cycle consisted of 2 meetings. The techniques of data analysis were used quantitative and qualitative technique. Based on the research findings, it concluded that the use of group method can improve students' mathematics learning outcomes on the subject matter of simple plane in grade V semester I of SD Negeri 101762 District Paya Bakung Hamparan Perak school year of 2012/2013 with the difference of the average improvement between cycle II with Cycle I is 23,38 (80,81 - 57,43 = 23,38) and the difference of percentage is 40,54% (86,49% - 45,95% = 40,54%).

Keywords: group method; learning outcomes; simple plane.

1. Introduction

Generally, learning can be interpreted as a process of behavior change and due to individual interaction with the environment. So behavior change is the result of learning. It means that someone is said have been learned, if he/she can do something that can't be done before.

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The behavior has large meaning. It includes knowledge, understanding, skills, attitudes, thinking skills, respect for things, interests and so on. Some of behavior can be observed but some it can't be observed. Observable behavior or appearance is called "behavioral performance". While that is can't be observed is called "behavioral tendencies". According to [1] Learning is a complex process that occurs in every person throughout his or her life. The learning process occurs because of the interaction between a person and his/her environment. Therefore, learning can happen anytime and anywhere. One sign that a person has learned is a change in the person's behavior that may be caused by a change in his or her level of knowledge, skill or attitude. In accordance with it [2] says that, learning is divided into two parts, namely: learn according to traditional view and learn to adhere to the modern view. Learning according to traditional view is an attempt to gain some knowledge while learning according to the modern view of behavior change through the interaction with environment.There are some different points of view about learning according to the some expert. But apart from the differences, there is also a similar meaning found that is definition and the concept of learning that always shows to a process of behavior change that is obtained through practice and certain experiences. This shows that behavioral changes occur because of experience and practice that are intentionally performed. Learning outcomes are everything that students get as a consequence of the effort that has been done so that the behavior changes in the concerned with the achievement of results, both qualitatively and quantitatively [3]. It means that the success or failure of the achievement of learning goals depends on how the learning process experienced by students. [4] He explains that, learning outcomes are the abilities that students gain after through learning activities. From various understanding of learning hence change of behavior that could be from do not know to know, the emergence of new knowledge, change in attitude and habit, change of view, craze and others. Activities and efforts to achieve behavior is a learning process whereas the change of behavior itself is the result of learning. Nowadays learning mathematics for students or learners is an unavoidable requirement. Mathematics seems to be a basic need for education in general. But, is math acceptable to everyone? A simple question that is not easy to answer. For students who like mathematics, the presence of mathematics in education is certainly not considered a burden. However, for students who are less fond of mathematics the presence of mathematics is regarded as an addition to the burden of learning. Some even think that mathematics as something scary, because it is difficult to learn.

This is the teacher's task to realize a suitable system, method or strategy in the process of teaching and learning. Besides that, it should also be supported by a mathematics material that makes the students can easily and quickly understand. Some ways that are easily absorbed by students is the presentation of material that involves a real example in daily life. In addition, the teacher also give an evaluation of the material that has been studied to the students that is an example of a problem that begins from the easiest problem, then the increasingly high probability the difficulty level.

Learning outcomes are determined by the use of appropriate learning methods in accordance with the given material. According to [5] "The study may reveal aspects of the process of thinking *(cognitive domain)* can also reveal the psychological aspects, namely the aspect values or attitudes *(affective domain)* and aspects of skills *(psychomotor domain)* attached to each individual learner." Learning outcomes are the acquisition of the learning process of students in accordance with the purpose of teaching. The teaching process is a conscious activity to make students learn.

The result of preliminary observation at SD Negeri No.101762 Paya Bakung based on interview with the teacher at V grade found that mathematics learning result of grade V students from last semester test is still low. Minimum completeness criteria of mathematics subjects in Elementary School No.101762 Paya Bakung is 65, whereas from the initial observation results obtained average student learning outcomes in the previous semester is 36.50 and from 32 students only 6 people (18, 75%) stated that it has been passed it and 26 people (81.25%) of students declared unfinished and still under the minimum completeness criteria specified in the school.

Based on the observation is known that the factors causing the low ability of learning mathematics of students is a factor of the students themselves and factors of classroom teachers itself (who doubles as a math teacher). The factors that cause from the students themselves are the students tend to be bored to follow math lessons, when the teacher explained the students were not serious to follow the lesson. Students were less active in learning math.

While the factors that cause the students has low ability in learning math is the lack of creativity of teachers in using tools or materials that can help students to understand the subjects.

2. Research methods

This research is classroom action research which consisted of two cycles for the material of simple plane. This classroom action research conducted on VB grade students of Elementary School at Paya Bakung No.101762 district of Hamparan Perak, Deli Serdang. The study was conducted on a month divided into 2 cycles. The first cycle was held on the second week, while cycle II was held on the third week

The subjects of this study are VB students of Elementary School No. 101762 at Paya Bakung, Hamparan Perak, Deli Serdang which consisted of 37 students where 20 male students and 17 female students**.**

3. Research result

The first step was done before giving the treatment was assessment or identification of the problem to be examined by doing pre-test.

Pre-test was given in the form of 10 essay test, with the aim to know the level of understanding of students about the material of simple plane.

The average test result achieved by the students was 26.08 and there was 1 student who got the value 65 or declared passed the minimum criterion curriculum, while 36 students stated unfinished because got value <65.

From the data that has been described above we can concluded that before giving the treatment and after giving the treatment there was the significant improvement of the students' outcomes whether viewed from test results and non test results. For more details can be seen below. The improvement of pre-test result, cycle I and cycle II can be seen in table below.

Table 1: Comparison of pretical classical data between cycle I and cycle II

	Pre-test		Cycle I		Cycle II	
	The number of students	%	The number of students	%	The number of students	%
Completed	1	2.70	17	45.95	32	86.49
Not yet completed	36	97.30	20	54.05	5	13.51

From the data above, it can be seen that there is an improvement of students' learning outcomes, where the pre-test data was obtained by one student who has passed/completed (2,70%) and 36 unfinished students (97,30%) from all students. After doing the action using group method got result from cycle I, 17 students has been completed in learning (45,95%) and 20 student unfinished (54,05%), whereas in cycle II, 32 students has been completed in learning (86,49 %) And 5 students unfinished (13,51%). The data above are seen in classical, when viewed by group, it can be obtained results as shown in the table below.

Table 2: Achievement of Grouped Learning in Calculating Trapezoidal Area

Group	Percentage of Learning Outcomes	
	Cycle I	Cycle II
I.	20%	80%
II	20%	80%
III	40%	80%
IV	40%	100%
V	20%	70%
VI	80%	100%

From the table above it can be seen that, there is improvement percentage of the students' learning outcomes from cycle I to cycle II for all groups.

Table 3: Achievement of Grouped Learning Results Calculate Kite Area

Group	Percentage of Learning Outcomes	
	Cycle I	Cycle II
I.	80%	100%
II	70%	100%
III	20%	80%
IV	60%	100%
V	60%	100%
VI	100%	100%

From the table above it can be seen that, there is improvement percentage of the students learning outcomes from cycle I to cycle II for all groups, except in group VI which still got 100

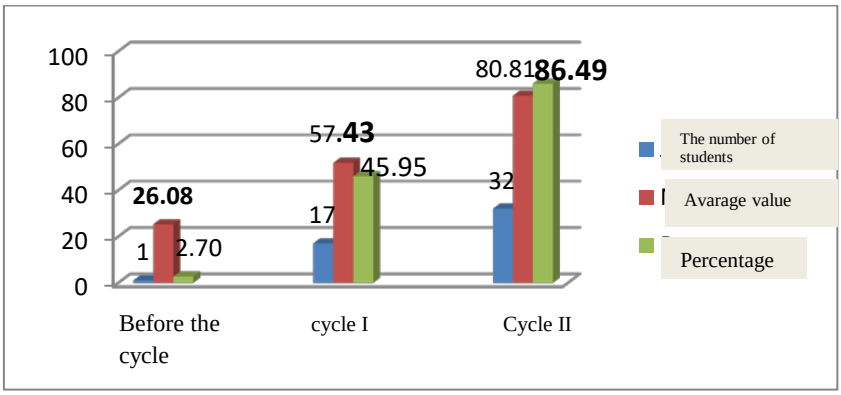

Figure 1: Diagram of Students' Achievement in Learning Outcomes before and After Cycle

The improvement of students' outcomes can be seen from the observations that have been done. It will be described in the following table.

Table 4: The Comparison of Cycle I Observation and Cycle II

Subjects Observed	Observation Results	
	Cycle I	Cycle II
Teacher	70.83%	80,55%
Student	37.83%	89.18%

From the observation that has been done by the observer, the data showed the improvement of learning outcomes and interaction of students and teachers. After observation, the teacher got improvement activity from 70.83% (in cycle I) to 80.55% (in cycle II). Likewise, students who gained an improvement in activity from 37.83% (in cycle I) was increased to 89.18% (in cycle II).

Table 5: The Comparison of Observation Results among the Group in Cycle I and II

Group	Percentage	
	Cycle I	Cycle II
I.	33.33%	100%
II	66.66%	83.33%
III	0%	50%
IV	50%	100%
V	16.66%	100%
VI	66.66%	100%

From the table above it can be seen that in the second cycle, all the groups involved in the learning process was improved when it compared to the results in cycle I.

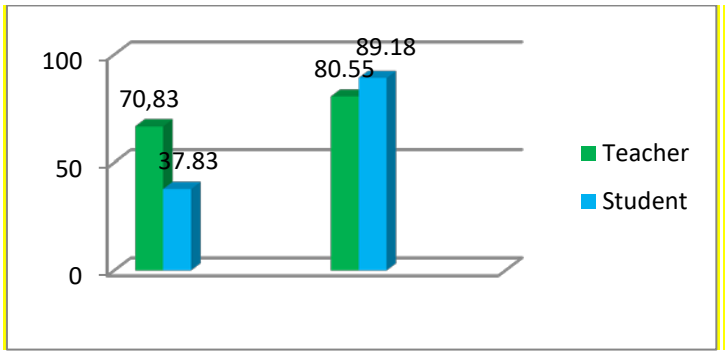

Figure 2: The Comparison Diagram of Observation Results in cycles I and II

4. Discussion

Based on the findings of research results and the data analysis that has been done prove that the use of group method can improve the students' outcomes in learning mathematics. As the results of the analysis [6] revealed that students many cringe and groan when told that they need to work in a group. However, group work has been found to be good for students and good for teachers. Employers want college graduates to have developed teamwork skills.

The confidence to believe that mathematics is a science that is easy to learn is the main thing for those who are afraid of mathematics to be able to explore math. Teacher is a facilitator in presenting materials must believe that knowledge of mathematics definition is an important aspect in math itself, based on the results of the analysis [7] the results indicate that teachers believe knowledge of mathematical definitions is an important aspect of mathematical knowledge for teaching, but they don't regard it as important to actually know the mathematical definitions themselves.

This study was in line with the previous research that was conducted [8] showed that the core learning strategies pairs or small groups is effectively based on the minimum criteria for completeness of comprehending ability, achievement and self-efficacy were established, but there was no significant difference between the grouping strategy. Repeated measures analysis of variance showed that the complexity of the learning materials influence the students' outcomes significantly.

The more complex the learning material, the use of small group strategies is better than pairing. From the data analysis above, it showed that the students are generally very motivated to cooperate and complete the assigned task [9]. Cooperative learning involves students working together in small groups to achieve common goals. It is widely recognized as a teaching strategy that promotes socialization and learning among pupils from kindergartens to different colleges and subject areas. This method can also be used at any level of education ranging from kindergarten to advanced lever in various fields of study in accordance with the analysis [10]

The result of the study found that the mean grade obtained by the students in the pre-test is (26,08), after giving the treatment in cycle I with group method the value improved to (57,43) and in second cycle it improved to (80,81). From the implementation of pre-test, cycle I and cycle II, the number of students who passed or completed the value above is 65from 37 students, the students who completed or passed the minimum criterion curriculum are 32 students (86.49%) while the number of students who are not completed at the end of cycle II is 5 students (13.51%). Thus, it can be concluded that the improvement of student learning outcomes at V grade of SD Negeri No.101762 Paya Bakung after implementing group methods there are 33 Of students (89.18%) passed the minimum criterion curriculum from the pre-test, post test I and II while there are 4 students (10.82%) didn't passed the minimum criterion curriculum from 37 students.

5. Conclusion

Based on the findings of research and discussion that have been discussed in the previous part, it can be concluded that:

1. The use of group method can improve students' learning outcomes of mathematics on the subject of simple plane area in V grade Elementery School No.101762 Paya Bakung Hamparan Perak District, Deli Serdang.
2. The result of student's mathematics outcomes before giving the treatment obtained an average of 26,08 with the completeness percentage 2,70% at cycle I after giving the treatment from the result of the post test obtained average 57,43 with the percentage of mastery 45,95% and the class is stated not yet passed the minimum criterion curriculum. After the development in cycle II obtained the average of the students' learning outcomes is 80.81 with percentage 86.49% completeness and the class has been stated achieve learning mastery.
3. The difference of the average value between cycle II compared to cycle I was 23,38 (80,81-57,43 = 23,38) and difference of percentage was 40,54% (86,49% - 45,95% = 40 , 54%).

6. Suggestion

It is suggested that:

1. Teachers should use the group method as an alternative presenting the learning to ease transferring the subject matter in order to improve students' understanding of the material simple plane area.
2. It is expected that the teachers really prepare the steps of implementing the method of group work starting from the formation of students group, explaining the steps of learning that will be done as well as provide motivation and guidance to students to have mutual responsibilities as members of the group.
3. It is expected that teachers will continue this research to obtain more comprehensive and useful results as a counterweight to theory as well as reform and innovation for the educational world especially the use of methods or learning models that can engage students in learning actively.

7. Limitations of Research

The limitation of this study is only done in one school only. So this research only involves a limited number of subjects. There are 37 students in one class. So the results can't be generalized to groups of subjects with large numbers**.**

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