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Peer Group Learning Method to Improve the College Student's Achievement

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Abstract

This research aimed to find out the effectiveness of peer group learning method in improving the college students' achievement. This research uses one group pretest and posttest design. The population is non-formal education students of State University of Padang who take Education Statistics Subject in January-June 2017, consists of two classes each of which is control group and experimental group. There are 30 students in the control group and 41 students in the experimental group. The data obtained from the students' learning result during January-June 2017 and analyzed using t-test statistical technique. The purposes of the research are (1) peer tutor is a strategy to help fulfilling the students' need; (2) peer tutors will be proud of their role and they will learn from their experiences as tutor; and (3) peer tutor's help can eliminate the students' clumsiness. The research findings indicate that the students' learning result with conventional learning method is unsatisfactory, the peer group learning method can improve the students' learning result, and there is a significant difference between the students' achievement learned with the conventional method and learned with the peer group method.

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INTRODUCTION

Education plays an important role to improve the quality of a nation. The quality of nations is marked and measured by the quality of their education. It is due to the primary function of education that is to educate the nation as stated in UU RI No. 20 2003 about national education system. It is clearly stated that national education is to develop the ability, build the character and dignified civilization of the nation to educate the nation (Tobias, Wales, Syamsulhakim, & Suharti, 2014).

At this time, education in Indonesia has some problems. One of them is about the low quality of education (Suryadarma, 2011; Tobias et al., 2014; UNESCO, 2010). It can be seen from the low students' achievement (Castelli, Darla M., Elisabeth Glowacki, Jeanne M. Barcelona, 2015). High or low achievement in the learning activity in educational institutions is influenced by many factors both internal and external. The internal factors come from the students themselves (Vibulphol, 2016; Zhu & Zhou, 2012). Besides, the external factors are parenting factors, environmental factors, facilities and infrastructures of the educational institutions (Afshari, Bakar, Luan, Samah, & Fooi, 2009), and learning method (Agbo, 2015; Duruji, Azuh, & Oviasogie, 2014; Mege, 2014).

Good educational institutions should create active, creative, and communicative learning (Wang, 2010). As an agent of education, the educator should find out the best and suitable learning activities for the students. There should be other factor supports in creating good quality of learning (Mpofu, 2007). It is because learning is a deliberate attempt aimed and controlled to enable learning activity for the learner or lead to settled changes in the self-learner (Rowe, 1986). That kind of learning is organized by a person or a team who has the ability and competence in designing or developing the learning sources needed (Sims, 2006).

To support the learning activities, it is also needed adequate infrastructures (Vincent, 2006). However, it is found that the learners (college students) have learning difficulty leads to the low participation and motivation (Saeed & Zyngier, 2012) and make their achievement low (Lai, 2011) (Moore, Grabsch, & Rotter, 2010). It is found in Education Statistics Subject in Nonformal Education Program, Faculty of Education, Universitas Negeri Padang. The students feel that Education Statistics is a difficult and scary subject. They find difficulty in doing practices/tasks given. They are already afraid and confused in that course from the beginning of the semester.

The impact of the condition above is only 40% of students do the exercises correctly. Therefore, it needs to find an alternative to create the active, effective, and fun learning process. One of methods can be used is peer group learning. The success of the teaching program can be supported by enabling all potentials of the educational institutions such as all learning sources beside the teachers (lectures) (Organisation for Economic Co-Operation and Development, 2009). Moreover, the learning sources are not always a lecturer, but can be anyone else such as others, senior, classmate, or family. Those learning sources called tutors. There are two kinds of tutor i.e. peer tutor and higher tutor. The peer tutor is the smarter peer while the higher tutor is a tutor from the higher class (Fougner, 2012; Topping, 1996).

Through being a peer tutor, the college student does not only become the learning object but also the learning subject (Felder & Brent, 2005). As the learning subject, the students become the learning sources for others. They do repetition and re-explain the learning materials to their friends. Thus, they understand the materials more (Wiliam, 2013). Learning with peer tutor can eliminate the students' clumsiness. The language used by the peer tutor is easy to understand. Moreover, there is no reluctance, low self-esteem, shame, etc. that makes the students do not hesitate to ask about their difficulty in learning.

In line with that: (1) peer tutor is a strategy to help fulfilling the students' need. This is a cooperative approach, not competitive, in which the respect and understanding are nurtured among students work in group; (2) peer tutors will be proud of their role and they will

learn from their experiences as tutor. It helps to reinforce what they learned and acquired because of their responsibility. The students who learn with peer tutor also develop their ability to listen, concentrate, and understand the materials in a meaningful way; (3) Peer tutor's help can eliminate the students' clumsiness. The language used is easier to understand. There is no reluctance, low self-esteem, shame, etc. to ask about their difficulty or ask for a help.

METHODS

This research is quasi-experimental design with one group pretest-posttest design. This design has a control group, but it cannot fully control the external variables that affect the treatment process. The quasi-experimental design used since the difficulty to obtain a control group used for research. The sample consists of two groups: control group and experimental group. The control group treated using conventional learning method while the experimental group using peer group learning method. For more details, the design of this research is shown in the table 1 below.

Table 1. Research Design

GROUP	PRETEST	TREATMENT	POSTTEST
Experimental	O1	T1	O2
Control	O3		O4

O1 = pretest of experimental group
O2 = posttest of experimental group
O3 = pretest of control group
O4 = posttest of control group
T1 = class using the peer group learning method

The population of this research is non-formal education students of State University of Padang who take Education Statistics Subject in January-June 2017, consists of two classes each of which is control group and experimental group. There are 30 students in the control group and 41 students in the experimental group. The procedure is divided into three stages: preparation stage that includes the preparation of learning tools, achievement test, and observation guideline; implementation stage that divides the students into some groups with peer tutor in each; completion stage covers analyzing the data, testing the hypothesis, summing up the hypothesis testing, discussing and concluding the research result. Furthermore, descriptive analysis technique (percentage) is used to analyze the observation result of the students' achievement. Meanwhile, t-test is used to test the hypothesis with the significance level of 0.05.

RESULTS AND DISCUSSIONS

This section presents the research finding and discussion. However, before presenting the research finding, it is necessary to describe the pretest result of the control group and experimental group. From the pretest result, it is shown that the highest achievement of control group is categorized moderate that is 47% or 14 out of 30 students of the control group. The result can be seen in Table 2.

Table 2. *Pretest Result of Control Group*

Interval	Category	Frequency (f)	Percentage (%)
74-80	Very high	4	13
67-73	High	8	27
60-66	Moderate	14	47
53-59	Low	2	7
46-52	Very low	2	6
		30	100

Based on the pretest result of the experimental group, it is known that the highest result of the experimental group is categorized moderate that is 41% or 17 out of 41 students of the experimental group. The result can be seen in Table 3.

Table 3. Pretest Result of Experimental Group

Interval	Category	Frequency (f)	Percentage (%)
76-83	Very High	4	12
68-75	High	8	20
60-67	Moderate	17	41
52-59	Low	6	15
45-51	Very low	5	12
		41	100

From table 2 and 3, it is known that the pretest results of students' achievement of Education Statistics Subject both control group and experimental group are categorized moderate. They are 47% or 14 out of 30 students of the control group and 41% or 17 out of 41 students of the experimental group. Furthermore, it is carried out an analysis to determine whether there is significant difference in the achievement of Education Statistics Subject between students learned using conventional method and peer group method.

Based on the t-test towards the pretest results of control and experimental group, the t value is equal to 1.144. It is converted using t table with df 69: for the significance level of 5 % is 2:00 and for the significance level of 1% is 2.65. It shows that the t value is smaller than t table for the significance level of 5 % and 1%, i.e. $1.144 < 2.65$ and $1.144 < 2.65$. Therefore, the stated hypothesis "there is significant difference between the achievements of control group and experimental group" is rejected.

Regarding to the finding above, it can be concluded that there is no significant difference in the achievement of Education Statistics Subject between the control and experimental group. Moreover, it can be said that before given the treatment, the learning ability of both groups is the same (homogeneous). Here is presented the research finding related to the achievement of students who learned with conventional method and peer group learning method based on the posttest result and hypothesis testing. The posttest result of the control group learned using conventional learning method is as table 4 below.

Table 4. The Posttest Result of the Control Group Learned Using Conventional Method

Interval	Category	Frequency (f)	Percentage (%)
74 - 82	Very high	4	13
69 - 73	High	6	20
60 - 68	Moderate	10	33
50 - 59	Low	7	23
41 - 49	Very low	3	10
		30	100

The table above shows that the percentage of control group's achievement learned using the conventional method is categorized moderate that is 33% or 10 out of 30 students. Comparing to the pretest result, the students' achievement is getting low from high and moderate to low and very low. Therefore, it can be said that the students' achievement using the conventional learning method is unsatisfactory. Then, for comparison with the achievement of students learned using conventional method, it shows the posttest result of experimental group learned using peer group method as in Table 5.

Table 5. The Posttest Result of the Experimental Group Learned Using Peer Group Method

Interval	Category	Frequency (f)	Percentage (%)
80 - 86	Very high	8	20
73 - 79	High	21	51
66 - 72	Moderate	6	15
59 - 65	Low	4	9
52 - 58	Very low	2	5
		41	100

Noting the table above, the highest achievement is categorized high that is 51% or 21 out of 41 students of experimental group learned using peer group method. Thus, it can be said that peer group learning method can improve the students' achievement. According to the t test result, the t value is 3.726. Then, it is converted using t table with df 69: for the significance level of 5% is 2:00 and for the significance level of 1% is 2.65. It means that t value is greater than t table for the significance level of 5% and 1%, i.e. 3.726> 2:00 and 3.726> 2.65. Therefore, the stated hypothesis "there is significant difference between the achievements of students learned using conventional method and using peer group method" is accepted.

Based on the findings above, it can be concluded that there is significant difference between the achievements of students learned Education Statistics Course using conventional learning method and using peer group learning method.

The research finding can be discussed as follows. First, the achievement of students learned using conventional method is categorized moderate. It means that their achievement is average, not satisfying improvement. It might be due to the fact that cooperation among students in the conventional learning method is considered a taboo. The cooperation is often interpreted as cheating. In addition, the students' relationship in the learning process is competitive, not cooperative.

Even if there is a group assignment, the individual accountability is often overlooked that makes the assignment is done by a member of the group only while the others depend themselves on their friend who assumed as a contractor.

(Sardiman, 2003) states that one of factors that leads to the learning success is competition. Both individual and group competition can improve the students' achievement. The students with good achievement (read: college students) will motivate the other students to compete others. Thus, competition is one way to compete each other to improve the students' achievement.

There should be motivation to compete among the students because competition is expected to trigger the students' spirit to learn. Having high learning spirit will produce the high achievement of the students. The high achievement can be in the form of good score of a subject; in this case is Education Statistics Subject.

Second, the achievement of students learned using peer group method is categorized high. It means that peer group learning method is effective to improve the achievement of Nonformal Education students who take the Education Statistics Subject. The improvement is because the existence of the competition between the control group and experimental group. As stated by (Sardiman, 2003) that both individual and group competition can improve the students' achievement. It makes the students more active and motivated to learn to obtain the high achievement.

The motivation can come from inside or outside the individual. The motivation comes from the individual itself is called intrinsic motivation. Besides, the motivation comes from outside the individual is called extrinsic motivation. Furthermore, (Sardiman, 2003) states that motivation can develop creativity and imagination and make people keep trying to get what they want.

In term of learning, motivation in self-learners will drive them to learn hard since there is competition. The better achievement of others raises the learning spirit and encourages the desire to be better than the others. In other words, the competition between the control group and experimental group can be used as a tool to improve the students' achievement including Education Statistics Subject.

Third, there is significant difference between the achievements of students learned using conventional method and peer group method. It can be understood based on the meaning of learning itself. Psychologically, learning is behavioral changes as result of interaction with the environment to meet the needs of life. Moreover, (Slamento, 2010) states that learning is a process attempted by people to obtain the behavioral changes as result of their own experience in the interaction with their environment.

Another definition comes from (Purwanto, 2009) that learning is behavior which changed. It includes various aspects, both physically and physiologically such as changes in understanding, problem solving or thinking, skill, ability, habit, or attitude. Spears in (Sukardi, 2008) states that learning covers various actions: observing, reading, applying, and listening to achieve a goal. Then, Cronbach in (Suryabrata, 2002) states that the best learning is by experiencing. In experiencing, the students use their senses to observe something used in their life.

The importance of applying the peer group learning method is due to the fact that the learning process should put the students as learning subject who have their own basic potentials, not as learning object who established arbitrarily by the educator (Sukardi, 2008). The students need extrinsic motivation to develop their internal potentials. Every educator should have an understanding that all learners have various potential to be success. The various potentials the students have often create problems in understanding a concept. Sometimes, they understand quickly and find difficulty, but they are reluctant and afraid to ask to the educator. Thus, the peer group learning method is the best way to achieve the better students' achievement.

Peer group learning method is an early effort to anticipate the learning difficulty and

prevent the further impact on the students' achievement. It is considered as an attractive and interactive method to solve the learning difficulty. Through this method, the students will be openly and interactively under the teacher guidance and motivated to master the learning materials presented. The nature of students' participation in the peer group learning method needs active participation from the students as learning subject, not as object to create the effective and meaningful learning process.

CONCLUSION

The students' achievement in Education Statistics Subject learned using conventional method is not significantly improved because there is no individual or group competition that encourages the students' motivation to learn. In contrast, the students learned using peer group method show the improvement in their achievement from moderate category to high category. It is because the learning includes the individual or group competition to improve the students' achievement. Therefore, the peer group learning method is more effective to improve the students' achievement in Education Statistics Subject compared to the conventional method. Through peer group learning method, the students are placed as learning subject who have various characteristics and potential to be success. Thus, they do not hesitate to ask about their difficulty, especially to their peers.

It is suggested to the Education Statistics Lecturers to apply the peer group learning method in their class. Furthermore, the students who have high speed in Statistics Education Subject are expected to help their peers in the learning process. Lastly, the related parties are suggested to provide adequate facilities in the learning process to make the implementation of peer group learning method perform well in the classroom.

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