The Difference of Students’ Learning Outcomes between STAD Model and Discussion Model on Economics Subject

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Abstract
This research aims to identify the difference of students’ learning outcomes between STAD cooperative learning model and discussion model on economics subjects. This research was conducted at class X Senior High School 1 in Surabaya. It was an experimental study using a Nonequivalent Control Group Design research design. The total numbers of students were 140 students. Samples were taken by using purposive random sampling technique. 69 students were analyzed as sample. They were divided into two classes. One class was as a control class (X IPS3) with 35 students and another was as experimental class (X IPS1) with 34 students. Collecting data used post test and pre test. Findings show that there are differences on students’ learning outcomes significantly between STAD cooperative learning model (experimental class) and discussion (control class) on economics subjects. It is proven by the results of the calculation of the Z test was greater than 0.05 (4.679 > 0.05), hypothesis is accepted and the mean score at experimental class is higher than the control class (82.29 > 74.03). Thus; the implementation of STAD method gives good influence on students’ learning outcomes.

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INTRODUCTION

One of the problems in the learning process at school was the students' low understanding of a subject. Trianto (2007) explained that “it is sad to see the bad scores most students get. It happens since the conventional method does not touch the dimension of students; it is the real meaning of studying”.

Based on Trianto (2007), he said that “In the more substantial meaning, so far; the learning process is dominated by the teacher and does not give access for students to develop independently through innovation and thinking process”. Therefore; students’ activities inside the class were getting decreasing. As we know that learning activities were students’ activities to get the changes; such as behavior and skills changes to develop themselves to be more advances so they got the benefits of the activities. To develop the students physically and mentally, students should be active in the teaching learning process at the classroom. It means that students did not only wait the teacher’s explanation but they should be active to understand the materials and finally their learning outcomes were getting better.

Based on constructivism, knowledge can be transferred from the teachers to other people because each person has his own scheme or knowledge to be understood. The shaping of knowledge was a cognitive process which happened when the assimilation and accommodation process to achieve the learning goal (Amaludin, 2010). It means that the learning activities were to activate students at the classroom.

Activating students at the classroom or involving students at learning activities was an effective way to improve students’ understanding on the learning materials. The active learning was the learning which enabled students active in the learning process either among students or between students and teacher in the learning process (Nurseto 2009). Nurseto (2009) explained that many teachers assumed that the active learning was very fun for students and made students fast to think, trained students to be confident, taught the responsibility and it could be applied on daily life.

One of learning models which involves the students’ activeness is cooperative learning model with the Student Team Achievement Division (STAD) type. This method in some researches is effective to increase students’ outcomes and also able to improve students’ activeness. Amaludin (2010) in his research found that STAD based on constructivism was more effective than conventional method. It is a line to Van Wyk (2012), he found that students which were active in the learning process got higher post test scores. These indicated that STAD on economics subject could be an alternative way to improve students’ activeness in the classroom.

One of the reasons to use STAD on economics subject was the ease of the method to be applied. The applicable learning made teacher and students easy to implement the active learning. Majoka (2010) said that among cooperative learning methods, STAD was easier to be applied and could be done on many subjects from elementary grade until university level.

On cooperative learning model with STAD (Student Teams-Achievement Divisions) type, all students had the opportunity to develop and to think through discussion and cooperative practices among students. The group discussion was expected to improve students’ motivation in learning. STAD was effective to increase students’ motivation because it emphasized the rewards as a reinforcement which was combined with the fun and interesting board media (Nurafni, 2010).

SMA Negeri 1 Arosbaya is the senior high school at Bangkalan district. It has two departments, Natural Science and Social Science. One of the competencies at Social science is Economics which is given to students of grade X, XI and XII. Economics is the core subject so students need to have good score so they can continue to the higher education.

So far, the learning activities on economics subject in SMA Negeri 1 Arosbaya were based on text book, the teachers gave explanation, students made notes and also there was a question and answer session and finally, gave the exercise or homework. The usage of lecturing and discussion in the learning was very dominant. The conventional learning made students passive at the classroom. Students just focused on the lecturing and made notes.

Students’ passiveness at the classroom could be seen from the number students who were sleepy at the learning process. Beside that, students focused on taking notes and listened to the teacher’s talk. They did not share their experiences in learning. It indicates that the alternative learning model is needed.

Schools need to apply various learning models because they can provide the meaningful learning experience to students. One of the learning models often used was the cooperative learning model. According to Solihatin and Raharjo (2009: 5), they said that “the cooperative learning model is a learning model which helps students
develop their understanding and attitude which is appropriate with the real life in the community, it teaches students to work together among members of the group which will improve their motivation and productivity to achieve the learning outcomes”. It is in line with the opinions about cooperative learning model proposed by Suratno (2013). He said that the cooperative learning was an active learning model, which enabled students learn and work together in small groups; helped each other to learn a material.

The active learning is also better used in this model, students are encouraged to be more active in the learning activities and they can help each other. The rivals become much less pronounced with these learning activities because it requires students to help each other. Students are actively involved in the learning process which consequently gives the positive impact on the quality of interaction and communication; it also motivates students to improve their learning outcomes. Therefore, the cooperative learning model is great to be implemented since it encourages students to work together and help each other to do the tasks.

There are many types of cooperative learning, one of them is STAD. According to Slavin, Student Team Achievement Division (STAD) was a cooperative learning model developed by Slavin and his friends at Johns Hopkins University. Slavin (2011) said that “STAD Model is the simplest and the best model of cooperative learning for the teachers who are new to the cooperative approach”.

The elaboration of the cooperative model for STAD type can be concluded that it is the cooperative learning model in which students are grouped into 4-5 members based on the skill level and gender. The main components of STAD are presentation, team, quiz, scores of individual progress, team recognition.

Through STAD learning, students in groups are also taught to compete each other. It is certainly good to improve students’ achievement motivation. It is said by Santoso which was cited by Suratno (2013) that the last step of STAD learning model was to give reward to the best team.

Then, there are some advantages and disadvantages of STAD model. Santoso (in Suratno, 2013) said that the advantages of STAD method were: (1) It can be used for the facts materials and did not require the high reasoning but it depended on the level of education and students’ characteristics, (2) It improved the ability to cooperate and built the positive relationships among students, so students could appreciate others’ opinion in looking to the issue, (3) Students in one group were responsible for the ability of the members, so students had to help each other who did not understand the material or the problems, (4) It could improve students’ motivation in learning because if there were unable members, they should be helped and if there were passive members, they would be reminded by other members because their inactiveness influenced the group achievement, (5) It could improve students’ participation and academic achievement, (6) It could improve students’ communication skills. On the other hand; the weaknesses of the STAD method were: (1) It took a longer time if the teacher or students were not accustomed to using this learning method, (2) teacher should understand and prepare the materials in using STAD method, (3) Teachers should prepare the students’ activity sheet which was listed the materials which all students in one group should understand, (4) It was effective if it was only few students (under 30 people).

Then, discussion method is also an alternative way to activate students at the classroom. Discussion method can also be used by teachers to train students in cooperation and self-expression. According to Tohirin (2007) “group discussion is a method which students have the opportunity to solve the problems together”. It is similar to Usman’s opinion (2008), he stated that “Group discussion is an orderly process which involves a group of people in face to face interactions informally with various experiences or information, conclusion, or problem solving”.

Discussion method was more easily implemented than STAD cooperative method. It made teachers in SMA N 1 Arosbay more likely to use the discussion as an alternative learning method. Then; discussion method does not have to put teamwork in a group discussion, group only focuses on delivering those experiences. It is good because it does not make any competition among students.

Discussion method which is commonly used is a small group discussion method (buzz-group). Buzz-group enables every student gets the opportunity to express his ideas to solve the problems together. In the implementation, students are divided into small groups of a large group, and then from the discussion of each small group, they will report the discussion results to the large group.

Buzz group discussion is a large group which is divided into small groups of about 4 to 6 people, to discuss a particular problem in a short time; it is only 5 minutes or no more than
15 minutes. Buzz session should then be followed by a whole class discussion to conclude the findings. A leader who has been appointed by each buzz group reports its findings to the large group. Then; a list can be created by combining the useful ideas from each group.

But the implementation Buzz Group also had the problems. The most commonly problem happened at SMA N 1 Arosbaya was the students’ low interest of discussion. It made less enthusiastic discussion groups and they did not have intention to discuss more seriously.

Based on the explanation above, it can be said that the problem of the discussion was less active students in the discussion process on economics subjects in SMAN 1 Arosbaya so students’ learning outcomes were not optimal. Thus, it needs cooperative learning in SMA Negeri 1 Arosbaya, the STAD model is expected to make students more active in learning so they can achieve maximum learning outcomes at economics subject. The research question is “Is there any differences on students’ learning outcomes between STAD model of cooperative learning and discussion method on economics subject in SMAN 1 Arosbaya”.

**METHOD**

It was an action research with the experimental approach. In the implementation of STAD learning has some steps to collect the data. The steps of STAD type of cooperative learning (Trianto, 2007) were Table 1.

Table 1 shows the phases of cooperative learning. Then, researcher calculated the individual’s achievement using analytical tests. The calculations were as Table 2.

In the Table 2 of individual development, the researcher confirmed the score changes from pre-test to post-test and the difference between the experimental and control classes.

In addition, the researcher also needed to know the progress of each group in the STAD, as the stages are: a) calculating the group score, it was calculated by making the average score of group members development, i.e. by summing all the scores developments received by group members of the group, b) categorizing the results of the acquisition of the score into a few group development.

### Table 1. Phases of STAD Type of Cooperative Learning

<table>
<thead>
<tr>
<th>Phases</th>
<th>Teacher’s Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1 Outlining the objectives and motivating students</td>
<td>Delivering all the learning objectives and motivating students to learn</td>
</tr>
<tr>
<td>Phase 2 Presenting / delivering the information</td>
<td>Presenting the information to students by demonstrating the materials or giving the reading material</td>
</tr>
<tr>
<td>Phase 3 Organizing students in groups</td>
<td>Explaining to students how to make groups and help each group to make the efficient transition.</td>
</tr>
<tr>
<td>Phase 4 Guiding the group work and studying</td>
<td>Guiding the groups when they do their work</td>
</tr>
<tr>
<td>Phase 5 Evaluating</td>
<td>Evaluating the study results about the materials which has been taught or each group presents his work</td>
</tr>
<tr>
<td>Phase 6 Giving rewards</td>
<td>Finding the ways to appreciate the effort and the learning outcomes of individuals and groups.</td>
</tr>
</tbody>
</table>

Source: Trianto, 2010

### Table 2. The Scoring of Individual Achievement

<table>
<thead>
<tr>
<th>Test Scores</th>
<th>Achievement Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 10 points below the initial score</td>
<td>5 points</td>
</tr>
<tr>
<td>10 points down to 1 point below the initial score</td>
<td>10 points</td>
</tr>
<tr>
<td>Initial score to 10 points below the initial score</td>
<td>20 points</td>
</tr>
<tr>
<td>More than 10 points above the initial score</td>
<td>30 points</td>
</tr>
<tr>
<td>Perfect score (without regarding to the initial score)</td>
<td>30 points</td>
</tr>
</tbody>
</table>

Source: Trianto, 2010
Besides STAD cooperative learning, the researchers also implemented discussion method as the comparison model of STAD. The discussion method was buzz group. Because of the small group discussions (buzz-group), every student got the opportunity to express his ideas to solve the problems together. In carrying out the discussion, students were divided into small groups of a large group, and then from the discussion of each small group will report the discussion results to the large group.

The definition of a buzz group discussion is a large group which is divided into small groups of about 4 to 6 people, to discuss a particular problem in a short time (5 minutes or not more than 15 minutes). Buzz session should be followed by a whole class discussion to conclude the findings. A leader who has been appointed by each buzz group reported its findings to the large group. Then a list could be created by combining the useful ideas from each group.

The steps of group discussion were: a) The teacher, possibly along with students, selected and determined the problems/ issues and the parts of the problems which needed to be solved in the learning activities. b) The teacher helped students to form small groups. The number of groups was adjusted for the issues to be discussed. c) Teachers shared the issue to each small group. One group discussed the issue. d) The small groups did the discussion of the problem for 5-15 minutes. e) If the time was over, the leader of each group delivered a report in front of all groups. f) An appointed student noted the main points of the report which had been submitted. Furthermore, the students were asked to add, subtract, or comment on the report. g) The teacher asked the small group to summarize the results of the final discussion. h) The teacher and students could evaluate the process and the discussion results.

Then, the study compared the students’ learning outcomes using STAD cooperative method and the discussion method. The researcher marked the students’ learning outcomes of experimental group with learning model type STAD was \( X_1 \), whereas the students’ learning outcomes of control group with the discussion method was \( X_2 \). After that, the classes got the different treatment, i.e. STAD cooperative learning model and discussion method.

Pretest was taken before the both groups got the treatments. Pretest was done to obtain data before getting the treatment. Pre-test was also intended to ensure that the both classes as a research subjects had the same character.

\[ X_1 = \text{Students’ learning outcomes with STAD type learning model} \]
\[ X_2 = \text{Students’ learning outcomes with discussion method} \]

The groups do the discussion based on a subject or a question, which the group members or discussion participants are honestly attempting to derive conclusions after listening and learning, and also considering the opinions rose on the discussion. The aspects of assessment in this class were same to the aspects of the experimental class. The different aspects of the experimental class were on the formation of discussion groups, the lack of reward for the active group and there was no presentation. The application of discussion learning was classically conducted on the control class.

It was an experimental research. Sugiyono (2011) explained that an experimental study was a research method used to search the influence of a specific treatment against the other in uncontrolled conditions. The design of experimental research used in this study was nonequivalent control group design. According to Sugiyono (2011), he stated that the research implementation with this design, the researchers selected the classes based on certain considerations, such as the score average was almost same so it can be said that both groups had the same ability. Then, pretest was done to know the initial state of the difference between the experimental and control groups. If the pretest results of both groups were not different significantly, it could be said that it was good. The experimental group was then treated with STAD Cooperative learning model. After getting the treatment, the post tests carried out to know the score difference between experimental group and the control group. The learning outcomes of this study were only related to the cognitive domain.

The population of the study was all X grade IPS students at SMA Negeri 1 Arosbaya, they were 140 students. The samples of the study consisted of two IPS classes would be taken as the experimental group and the control group based on the average scores of the same class. Then; Class X of IPS 3 were the experimental group and class categories (good team, super team, and awesome team) c) giving rewards to each team.
X of IPS 1 were the control group.

The technique of the study was primary data, they were taken by a) test method was a measuring instrument which had the objective score standard so it could be used extensively for doing the pretest and post test in the form of multiple-choice test on the material of cooperative school. The test type of the study was a test given by the economics teacher. b). Interview techniques used was an unstructured interview to collect data through direct contact between the researcher and the informants without using the guidelines. The informants were the principals and the economics teacher.

RESULT AND DISCUSSION

It was an experimental study done by providing different types of treatments for two classes which had the same characters. The expected outcome of the treatment was the comparison between those treatments; i.e. STAD type cooperative learning and discussion method.

Pre-tests were done when the two classes did not get any treatment by the researcher. It means that the classes only gained the usual learning experience. Both classes had the same conditions and did not receive any treatment. Based on the recapitulation, the mean of pre test at the experimental class processed by Ms Excel program was 64; the minimum score was 47; and the maximum was 72. It means that most students at experimental class got the scores less than KKM ≥ 75, so the mean score of experimental students was less than KKM.

The low scores of pre-test were also found at the control class. Based on the recapitulation of the mean score of pre-test at the control group was 60; the median score was 62; The minimum score was 47; and the maximum score was 68. Referring to the recapitulation of the scores, most students at the control class did not pass the KKM score ≥ 75 so that the mean score of control students did not pass the KKM.

Both pre-test scores were analyzed by the different test (Z test) between the experimental class and the control class. After obtaining the calculations results (Z-count) then the Z-count score was compared with 0.05. If the Z-count was greater than 0.05, it can be stated there was no significant difference of students’ learning outcomes between experimental class and control class before having the treatment. If it was so, the researcher can give treatment for each class. There was no difference of pre-test indicated that the control class and experimental class had the same condition.

Based on the description of the score data of experimental and control classes, they were tested by the two different sides of the two classes. This analysis was performed by Ms Excel analysis data program and selected on Z test Two sample for Means and the result showed that Z-count was 2.610, then the Z-count was compared to 0.05. Because Z-count was greater than 0.05 (2.610> 0.05), it can be stated there was no significant difference to the pre tests of the experimental and control classes. Thus; the treatments could be given to each group.

Based on those findings, both classes quantitatively had the same situation in terms of their scores at pre-test. These circumstances indicated that the two classes were the same characteristics before getting the different treatments in both classes. Furthermore; the findings at the field showed that both classes had the similar situation in the terms of students’ activity and participation in the teaching and learning process.

Then, the recapitulation showed that the mean score of experimental class at post test was 82; the median score was 83; the minimum score was 73; and the maximum score was 90. They were 10 students who had scores from 70 to 75; they were 25 students who passed the KKM score ≥ 75. Pos test was conducted after the experimental class got the treatment of STAD. When it was compared with the previous results at pre test, the students' scores improved significantly. It indicated that there was a change in the learning outcomes experienced by students after getting the treatment of STAD.

It was in line Karim’s opinion (2007), he explained that the differences of students’ learning outcomes on mathematics in Turkey happened after students got STAD treatment. The difference of students’ learning outcomes was also significant. Another study conducted by Awofala (2012) found that there were significant difference of learning results between pre-test and post test after getting STAD cooperative learning on mathematics subject in Nigeria.

The difference of students’ learning outcomes between pre-test and post test indicated that the learning process has increased. The findings also showed that STAD was able to make the differences on students' activeness, participation and other positive attitude in discussions and problem solving in groups.

Based on the recapitulation, the mean score of the control class at post test was 76; the median score was 78; the minimum score was 70; and the maximum score was 83. Referring to the
recapitulation showed that there were 13 students who got scores from 70 to 75. There were 21 students who passed KKM score $\geq 75$. By looking at those differences between the pre-test and post test at the control class, it could be concluded that there were significant differences at the control class. It means that discussion method also gave good influences in improving students' learning outcomes.

The differences between the pre-test and post test results indicated that discussion method was also effective in improving students' learning outcomes. Lusianti (2014) did research to find the effectiveness of the use of discussion method with a syndicate group approach in improving students' learning outcomes on economics subject in SMP N 2 Banyubiru Semarang. In her research, Lusianti found that students' involvement was getting better on some aspects; visual activities, oral activities, listening activities, motor activities and writing activities.

The findings also showed that at the control class where the discussion method applied, the activities were still low; students' activities in groups were low because of the domination of a few students in the group. It also showed that each student could not perform well in expressing his opinion.

Both figures of the experimental class and control class were then performed by the different test. To perform this test, the data were processed by Ms Excel program on Z test Two sample for Means. After, they were processed and obtained results of calculations (Z-count) then the Z-count was compared with 0.05. If the Z-count was greater than 0.05, it can be stated there was a significant difference of students' learning outcomes between experimental class and control class, and vice versa.

Based on the description of the post test scores of experimental and control classes, then, they were tested by the two different sides of the two classes. This test was performed by the data analysis program Ms Excel on Z test Two sample for Means with the result of Z-count = 4.679 then the results were compared with 0.05. After comparing the scores, Z-count was greater than 0.05 (4.679 > 0.05), so it can be stated that there was a significant difference between the post test scores of experimental class and post test scores of control class.

Based on these data description, the hypothesis testing can be implemented. For testing the hypotheses about students' learning outcomes, Z-test analysis was used to calculate the Z count. Ms Excel on the selection of Z test Two sample for Means was used to do the Z test, then the calculation results was compared with 0.05. If the calculation result is greater than 0.05 then the hypothesis was accepted, and vise versa.

The hypothesis of this study was there was a difference of students' learning outcomes between STAD cooperative learning model and discussion method on economics subjects in SMAN 1 Arosbaya. The result of the Z test was 4.679 then the results were compared with 0.05 was1.96. Since the result was greater than 0.05 (4.679 > 1.96), it can be stated that there was a significant difference and the hypothesis was accepted. It means that there was a significant difference on students' learning outcomes between experimental and control classes.

Based on the results above, it could be said that the use of STAD cooperative model had the significant difference comparing with the use of discussion model in the learning process. It was in line with the research result conducted by Suratno (2013) at SMA N 10 Batang Riau on economics subjects, he found that there was different learning result between the use of STAD cooperative learning method and conventional method. The students' learning outcomes using STAD learning model got the higher level of completeness score compared with control class using conventional method. It was supported by Van Wyk (2012), he stated that there was difference of mean scores when learning using STAD model on Elementary Economic at the University of the Free State, Bloemfontein, South Africa. Another study which also linked to STAD cooperative learning was done by Amaludin (2010), he stated that on his interview with the integrated Social Science teachers who implemented STAD cooperative learning, the teacher said that students were more active and were trying diligently to get the best learning outcomes. Furthermore; the competition with other groups made the students in the group should have an important role to each other.

Basically, comparing one method with other methods were not only limited to the students' learning outcomes. There were many things which can be compared in the use of innovative learning model and conventional method. In STAD cooperative learning, there were some benefits, according to Van Wyk (2012), he mentioned that STAD cooperative learning could improve learning outcomes, motivation, attitude and self-efficacy. Furthermore; Suratno (2013) also revealed that the use of STAD cooperative learning was able to improve students' interest in studying Economics. Based on the observation,
it showed that students’ liveliness were different between the control and the experimental class. In the experimental class, more students were more active and varied than the control class. In the control class, there were only a few active students; the numbers of active students were less than in the experimental class.

Related to students’ involvement, the use of STAD cooperative learning model can also developed students’ activeness. Comparing to the discussion method, students were more active and lively on STAD cooperative learning. Students’ activeness at the experimental group can be seen on the group discussions and presentation. It was agreed by Taryadi’s finding (2013), he found that the implementation of STAD cooperative learning model made students more active than conventional learning method. Kusmuryanto (2009) also found that STAD cooperative learning had an advantage to enhance students’ activity than conventional method. Majoka (2010) showed that the class treated with STAD got the higher level of engagement than the untreated class. It is based on the interdependence among the group members in the class treated with STAD. In addition, students who had higher motivation were more active than students who had low interest. It can be seen from the results of the study that the highest score of pre test and post test at the experimental class had the difference.

There were also weaknesses of STAD cooperative learning model and discussion method in each class. In the control group where discussion method was applied, students were more active as individuals, but tended to be passive as a team group. It happened due to the lack of coordination as a team. Another factor was there were no rewards and punishment on discussion method which students in a team did not promote cohesiveness and team activeness.

Then, in the experimental class, vulnerability was discovered; it was the dominance of certain students in a group or team. Students who were smart in the group would dominate the coordination and distribution of tasks within the group. It made the teachers worried that the dominant students would influence or disturb other members’ activeness in the group.

CONCLUSIONS

This study has shown that STAD cooperative learning model influenced on improving students’ learning outcomes. The different students’ learning outcomes of discussion method and STAD cooperative learning model showed their different learning activities also in the classroom. Then; the use of STAD also enhanced students’ activities to be more active in learning. The use of learning models for delivering the material is important because the appropriate learning models used by the teacher will be able to motivate students follow the lesson which consequently, the materials will be easily understood and accepted by students.

The learning model is a framework which describes a systematic procedure to achieve the learning objectives. The use of STAD learning model allows students get more knowledge than the conventional learning with the discussion model. It happens because STAD learning model can help students express their opinions or ideas without fear of the initial knowledge gained from his independent study related to the problems and also there are also rewards for students who have good scores.

REFERENCES


