The Effect of the *TSTS* Learning Model on Student's Achievement

Erna Mena Niman

Universitas Katolik Indonesia Santu Paulus Ruteng

ABSTRACT	Published Online: April 06, 2024
This study aims to determine the effect of Two Stay Two Stray (TSTS) type cooperative learning model on student's achievement of SDK Golo Mongkok students. The type of research used in this study is a quasi experiment. The data collection technique used in this research is test technique. The instrument used was a test question. Data analysis used is a prerequisite test which includes normality test and homogeneity test, as well as t-test. The results of this study indicate that by applying the TSTS learning model gives a positive influence on social studies on student's achievement. This is inseparable from learning activities that involve all students in the group. The success is characterised by the ability of students to answer questions from the discussion results and the final test.	**KEYWORDS:** *TST Model,* Student's Achievement

INTRODUCTION

The learning process that tends to be monotonous conventional (lecture) is one of the obstacles in the formation of student knowledge. This will have an impact on the lack of student activity and student on student's achievement to be low. Roestiyah (2012) argues that lectures are the most traditional way of teaching and have long been practised in education. In fact, the lecture method is not wrong, if a lecturer has good language, correct, coherent, good tone of voice, attractive appearance, and broad insight, then everything that is informed is easy to understand (Purwanto, 2014). Therefore, teachers have an important role in the learning process, have a sense of professional responsibility, as facilitators and motivators, so as to create effective and efficient learning and become role models for their students (Roqib & Nurfaudi, 2020., Dasem, Laka & Niwele, 2018., Dantes & Candiasa, 2013). Thus teachers need to use learning models as one of the innovative learning strategies.

Good learning is learning that is orientated towards student learning achievement. The change from traditional learning to innovative learning will give birth to learning that pleases students in participating in the learning process and has an impact on student's achievement (Mariyanto, 2015). Teachers are expected to know and understand suitable and appropriate learning models in order to create a conducive and enjoyable learning atmosphere. Learning is a

combination that is carried out in a planned manner and is composed of various human elements, materials, facilities and procedures that influence the achievement of learning objectives (Hamalik, 2014). Students will have difficulty in solving problems that require reasoning, if the learning process that is carried out only requires memorising information without having to think about understanding it (Arif and Rijanto, 2017).

One of the efforts to create effective and enjoyable learning is by applying the cooperative learning model. In its implementation, cooperative learning has the principle that each student in the group must have a heterogeneous level of ability (high, medium, and low) and come from different races, cultures, tribes and consider gender equality (Huda, 2014). Through cooperative learning, students will be more active and try to understand the material by discussing with their group members, so that an answer or final result will be reached through consensus from the ideas they put forward. According to Sumarmi and Miftachudin (2015) "cooperative learning model is a systematic learning model by grouping students for the purpose of creating effective learning and to integrate social skills with academic content".

The division of small groups in a class in co-operative learning makes students have the opportunity to be actively involved in the thinking process during learning activities. This can be created through a sense of positive interdependence between fellow members. Cooperative learning has interrelated elements, namely: positive interdependence, face-to-face interaction, individual accountability, social relationship skills (Shoimin, 2014, Handayani, 2014). The four elements are interrelated which

makes students able to interact and discuss well in solving a problem together. Cooperative learning model is structured, while ordinary group learning is unstructured. One type of co-operative learning is the TSTS type.

The TSTS co-operative learning model can be used in all subjects and for all age levels of learners. The two-stay-two-guest structure is one of cooperative learning that gives groups the opportunity to share results and information with other groups (Lie, 2002). The TSTS learning model is two students staying in the group and two students visiting other groups (Shoimin, 2014). The application of this learning model aims for students to cooperate with each other, be responsible, help each other solve problems and encourage each other to excel. This method can also train students to socialise well despite differences in student personalities. Students must be educated to be realistic, recognise a multi-dimensional, non-uniform life and be invited to live a complementary diversity for the sake of healthy brotherhood, respect for rights and social obligations that are mutually solidary (Asri, 2012). Mutual learning activities with peers provide comfort for students to exchange ideas in achieving common goals Zainudin (2014).

In TSTS learning, students are required to discuss with their group of four friends to complete the task given by the teacher. Each group member prepares information related to the results of their group work that will be presented to their guests. In this model two of the group members will go to visit other groups to find additional information. Students who stay in their groups are tasked with providing information to their guests related to the material discussed. After that they return to their respective groups, then they compare the results of the previous discussion with the results of information obtained from other groups (Nurkhasanah 2013., Huda, 2014). The many interactions in the learning process that occur make students' memory of the material that has been learned to be maximised.

Based on the results of preliminary observations in the field, it was found that the learning process still tends to be conventional. During group learning, smart students do not want to share their knowledge with other group members, do not want to help teach or share with their group members related to the work they should do together. This happens because the group learning that is applied is not structured, so there is no clear division of tasks for each member. Low-ability students are seen only as complements in group formation. The dominance of smart students causes other group members to become passive and foster a sense of inferiority, the delivery of ideas in the group is dominated by high-ability members. The absence of an even division of labour in the group causes students to be less motivated in learning. The lack of student motivation in learning makes students less active in obtaining optimal group work results.

The scores obtained by the group may be calculated equally, but the maximum absorption of material is only obtained by smart students or dominant students. This causes smart students to get smarter and stupid students to remain stupid. This will affect the learning on student's achievement and the scores they get when taking the midterm or final exam.

Based on these initial problems, TSTS cooperative learning is worthy of research to see how it affects the learning on student's achievement . Various studies on TSTS cooperative learning have been conducted by previous researchers, including Alwi, M. K. & Wanarti, P. 2015, Dewi F. D. R., Soetjipto, B. E. & Utaya, S. (2016); Ismawati and Hindarto (2011); Darmawan, F. T., Wahyu, W. & Halimatul, H. S. (2013); Hermansyah, M. & Sondang, M. (2013), these various studies place the teacher's position as a facilitator and student-centred learning activities, so that overall the application of TSTS can significantly improve on student's achievement . Students can hone their ability to understand concepts during learning, be able to express ideas and be able to work together, stimulate students to be interested in the implementation of TSTS learning, have a sense of responsibility for the group and each student's task is also getting better, able to share with other students both within the group and with other groups in making decisions to get results. This can improve students' social skills which is one of the elements in the cooperative learning model.

The various results of previous research emphasise more on the final results in the form on student's achievement at the junior and senior high school levels. However, a detailed study related to how TSTS affects the learning on student's achievement in elementary school students has never been studied by previous researchers. Therefore, to fill this void (research gap), the researcher tries to examine the effect of TSTS on the learning on student's achievement .

This research aims to determine the effect of the Two Stay Two Stray type cooperative learning model on the learning on student's achievement of SDK Golo Mongkok students. The research hypotheses are as follows: 1) There is an effect of Two Stay Two Stray type cooperative learning model on the social studies learning process of SDK Golo Mongkok students, 2) There is an effect of Two Stay Two Stray type cooperative learning model on the social studies learning on student's achievement of SDK Golo Mongkok students.

Research using TSTS cooperative learning is very important to do because it can make a positive contribution to the development of students' knowledge and character. The application of TSTS learning will make learning more meaningful, because each student as a group member will become active, more courageous to express their opinions, social relationships between students become more harmonious, each group member will be mutually responsible for achieving optimal group work results created through cooperation, smart students will teach their friends with less ability and they will exchange ideas and try to provide input. Thus there is an equal distribution of knowledge to each member in understanding the problems that have been solved together.

In addition, students who cooperate with their group members can trigger interaction. The interaction is in the form of exchanging ideas, complementing and needing each other and providing input to get the optimal answer. This means that students do not work alone and will make it easier to complete the material provided.

THEORETICAL REVIEW

TSTS learning is one of cooperative learning, where cooperative learning is a learning strategy that involves student participation in a small group to interact with each other. In line with that, according to Rusman (2014), cooperative learning is a form of learning by which students learn and work in small groups collaboratively whose members consist of four to six people with a heterogeneous group structure.

Unlike the group work method, in cooperative learning it is not only the group work that is needed, but also the structure. As stated by Lie (2002), cooperative learning can be defined as structured group work. Within this structure, there are five main elements as stated by Johnson & Johnson (1994), namely positive interdependence, individual responsibility, personal interaction, cooperation skills and group process.

The underlying theory of this research is constructivism theory. This theory emphasises that cognitive change only occurs if previously understood concepts are processed through a process of imbalance in an effort to understand new information. Adherents of constructivism theory advocate the transfer of effective teaching and learning models in daily classroom activities. The way to do this is by involving students in tasks with co-operative learning, where smarter students help less intelligent students in completing tasks. Constructivistic learning emphasises the learning process (Degeng, 1998). Every student who is involved in the learning process in groups can motivate students who lack the ability in knowledge to think critically to build their knowledge.

TSTS learning is a learning model whose form of implementation is by means of two students staying in the group and two students visiting other groups, two people who stay in charge of providing information to guests about the results of their group, while the guests are in charge of recording the results of the discussion of the group they visit (Shoimin, 2014). The application of TSTS learning can foster the principle of positive dependence between fellow group members, where one member needs another. Each member has a responsibility so that the results of their group work are optimal. The emergence of interaction between fellow students through group discussions and from these interactions fosters communication participation, and good cooperation skills.

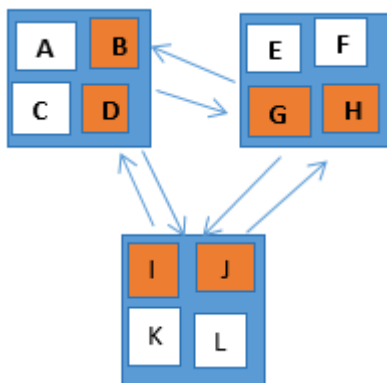The design for implementing TSTS in groups can be described as follows:

Figure 2.1. Changing Positions of Group Members in Learning In group ABCD: A and C are staying, B and D are visiting. In group EFGH: those who stay are E and F, those who visit are G and H In group IJKL: those who stay K
(**Source:** Lie, 2002)

B. Research Methods

The type of research used in this study is a quasi experiment. According to Sudjana and Ibrahim (2007), a quasi experiment is an experimental design with control that is in accordance with existing conditions (situational). This type of quasi experimental research in this study serves to compare the treatment of the teaching and learning process in two classes, namely the experimental class and the control class. The experimental class was implemented with TSTS learning, while the control class was implemented with conventional learning, namely lectures, discussions, questions and answers, and assignments.

The research design used in this study was pretest posttest control group design. The determination of research subjects was carried out by considering the ability of students who were almost the same or equivalent based on the class average score on the UAS results. The instruments used in this study were observation of the implementation of the learning process and test questions. Learning on student's achievement research instrument in the form of multiple choice questions consisting of 25 questions that will be given before and after learning. Before using the instrument first through the prerequisite test. According to Arikunto (2006) a good instrument must fulfil two important requirements,

namely valid and reliable. The instruments in this study before being used will be assessed or validated by experts, namely fellow lecturers of Unika Santu Paulus Ruteng.

The data tested in this study is Gain Score. The data analysis used is a prerequisite test which includes normality test and homogeneity test, as well as t-test. The t-test was used to test the hypothesis that had been formulated. In testing this hypothesis, a significance level of 0.05 was used and the analysis was carried out with the SPSS 16.0 for Windows programme. The analysis prerequisite test consists of Normality test and homogeneity test. Furthermore, the learning outcome hypothesis test was conducted. The hypothesis of learning on student's achievement will be tested using t-test (independent sample t-test). This hypothesis test aims to determine whether the experimental class learning on student's achievement are better than the control class learning on student's achievement after treatment. This hypothesis test uses SPSS 16.0 for Windows

with a confidence level of 95%. If sig. (1-tailed) $\geq$ 0.05, then the H0 hypothesis cannot be rejected. If sig. (1-tailed) < 0.05, then the H0 hypothesis is rejected.

RESULTS AND DISCUSSION

The data that will be discussed in this paper is the data of social studies learning on student's achievement between groups of students who in the learning process using the TSTS learning model and groups that use conventional learning. learning on student's achievement data obtained from the difference between the final ability score (posttest) and the initial ability score (pretest).

a. Pretest Data

1. Pretest and Posttest Data of Learning on student's achievement

The frequency distribution of pretest students in the control class can be seen in table 1

Table 1. Frequency Distribution of Student Pretest in Control Class

Classification	Value	Category	Frequency	Percentage
A	86-100	Very good	1	5%
B	76-85	Good	2	10%
C	66-75	Simply	5	25%
D	56-65	Less	8	40%
E	≤ 55	Very less	4	20%
Total			**20**	**100**

Based on tab 1, it is known that the results of the acquisition of student pretest scores in the control class were 5% of students had very good abilities, 10% of students

had good abilities, 25% of students had sufficient abilities, and 20% of students had very poor abilities.

2. Pretest Data of Experimental Class Students

Table 2: Frequency Distribution of Student Pretest Data in the Experiment Class

Classification	Value	Category	Frequency	Percentage
A	86-100	Very good	1	5%
B	76-85	Good	2	10%
C	66-75	Simply	4	20%
D	56-65	Less	9	45%
E	≤ 55	Very less	4	20%
Total			**20**	**100**

Based on table 2, it is known that the qualifications of the results of the acquisition of student pretest scores in the experimental class are as follows: 5% of students with excellent ability, 10% of students with good ability, 4% of students with sufficient ability, 45% of students with poor ability, and 20% of students with very poor ability.

b. Posttest Data of Learning on Student's Achievement

Posttest data is the result of tests given to students after receiving lessons with treatment. This data is needed to determine how much the final ability of students and the effect of the TSTS learning model on social studies learning on student's achievement, both control class and experimental class.

1. Posttest data of control class students

Table 3. Frequency distribution of posttest of control class students

Classification	Value	Category	Frequency	Percentage
A	86-100	Very good	2	10%
B	76-85	Good	3	15%
C	66-75	Simply	4	20%
D	56-65	Less	9	45%
E	≤ 55	Very less	2	10%
Total			**20**	**100**

Based on table 3, it is known that the results of the posttest acquisition of control class students are as follows. student's who have very good abilities are 10%, students who have good abilities are 15%, students who have sufficient abilities are 20%, students who are less capable are 45% and students who have very poor abilities are 10%.

2. Posttest data of experimental class students

Table 4. Frequency distribution of posttest of experimental class students.

Klasifikasi	Nilai	Kualifikasi	Frekuensi	Presentase
A	86-100	Very good	5	25%
B	76-85	Good	9	45%
C	66-75	Simply	3	15%
D	56-65	Less	2	10%
E	≤ 55	Very less	1	5%
Total			**20**	**100**

Based on table 4, it is known that the results of the acquisition of student posttest scores in the experimental class are as follows 25% of students have very good abilities, 45% of students have good abilities, 15% of students have sufficient abilities and 10% of students in the ability category are lacking, and 5% of students in the category have very poor abilities.

d. Data Analysis of Social Studies Learning on student's achievement

1. Normality Test

Table 5. Summary of Kolmogrov-Smirnov Test Results Z

Class	Sig	Conclusion
Control	0,100	Normal
Experiment	0,436	Normal

Table 5 shows that the significance value of the gain score in the control class is 0.100 and in the experimental class is 0.436. both values are more than 0.05, so it can be concluded that the gain score data in the control class and experimental class are normally distributed.

2. Homogeneity Test

Table 6. summary of normality test results

Levene Statistic	df1	df2	Sig
1.569	5	31	0,196

This table shows that the significance value of 0.196 is greater than 0.05. It can be concluded that the ability of students in both the control class and the experimental class has a homogeneous variant.

3. Hypothesis Test of Learning on student's achievement

The results of the t-test on student learning on student's achievement are as follows: the probability value (sig.1-tailed) is 0.000. this value is <0.05, thus H0 is rejected and H1 is accepted. this means that there is an effect of the TSTS cooperative learning model on the social studies learning on student's achievement of grade V students of SDK Golo Mongkok.

The results of this study indicate that by applying the TSTS learning model gives a positive influence on social studies learning on student's achievement . Fitriana et al (2016) explain that the success of student learning is the result

of a learning process that can be seen from the changes shown by students after participating in learning. This is inseparable from learning activities that involve all students in the group. TSTS learning model has a good contribution in improving student learning activities (Damayanti (2008).

In this study, the increase in learning on student's achievement in a positive direction occurred because in TSTS learning every student in the group was active in working on the group. The application of the TSTS learning model makes learning student-centred and encourages students to be active and help each other in mastering the material to achieve learning objectives (Ardiansyah (2015). The success is characterised by students' ability to provide answers to questions from the results of discussions and final tests. This is in line with the results of research by Dewi et al (2016) stating that "Through the application of learning models TSTS and Round Robin can Improve Communication skills and on student's achievement social studies". In completing group assignments, each group member cooperates in understanding the subject matter by discussing. so that it can overcome the problem of boredom in students. Lie (2002) explains that TSTS learning can reduce students' feelings of boredom in learning. In general, the use of TSTS learning has been proven to have an effect on improving the social studies learning on student's achievement of fifth grade students of SDK Golo Mongkok.

CONCLUSION

The TSTS co-operative learning model can be used in all subjects and for all age levels of learners. This model emphasises group cooperation that provides opportunities for groups to share results and information with other groups. The application of TSTS learning can foster the principle of positive dependence among group members, where one member needs another.

This study found that the application of the TSTS cooperative learning model in elementary schools was able to improve student learning on student's achievement. this was evident from the posttest results which showed a significant increase in the experimental class as a class that used the TSTS cooperative learning model.

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