The use of Cooperative Learning of Jigsaw-Type and Make a Match Type to Improve Students' Activity

Nur Aini Wahyu Hidayah[1], Suharno[2], Mintasih Indriayu[3]

[1,2,3]*Master degree of elementary school education, Sebelas Maret University, Indonesia*

Abstract

This research aims to improve the activity of third grade students at elementary school 02 of Troketon district Klaten Indonesia by applying a cooperative model of Jigsaw type and Make a Match type. This research is a classroom action research conducted at elementary school 02 Troketon Indonesia. The research subject is the students grade III that consists of 25 students. This research is conducted in three cycles, data collection techniques using observation and documentation. The validity of the data used was sources triangulation and method triangulation. The analysis of the data used is qualitative analysis and comparative descriptive analysis. The results of this classroom action research show the students activity at the time of pre-action no students entered to the active category and while in the cycle I, the students percentage who entered to the active category was 12%, in cycle II the students activity percentage increased to 32% , and in cycle III the students activity percentage increased to 76%. Based on the results of the research, it can be concluded that through the use of cooperative learning model of Jigsaw type and Make a Match type can improve the students' activity of the students grade III of elementary school 02 Troketon district Klaten Indonesia.

Keywords - *students' activity, jigsaw, make a match*

I. INTRODUCTION

Social Science discusses the relationship between humans and their environment. Social science learning can become a vehicle for students to know the social environment of the community which is nearby as well. In learning social science, it is always about human life that involves all sorts of behaviors and needs. Learning objectives of social science are:(a) to provide knowledge about human experiences in the past, present, and future; (b) to develop skill to process information; (c) to develop appropriate democratic values and attitudes; and (d) to develop opportunities for social participation [1]. Through the learning of social science at school then a child will learn about his role as a social creature and later will be able to implement his role in society. In order to achieve that goal, then social science needs to be taught in the right

way. Social science learning needs to be well studied so students can better understand the concept of social science in simple terms that will be useful for the life.

Based on the observation and interview with the teachers of third grade, social science learning at elementary school 02 Troketon district Klaten Indonesia obtains the information that most of third grade students still feel difficult in understanding and mastering subject matter, social science, fear and less dared to ask against a things are not yet fully understood. A teacher has already found various ways of learning. That way, it can rise to the students activity which can obtain satisfactory learning results. One of teacher's techniques is to make a group discussion for the students' learning activity. When the teacher explains the learning material in front of the class, the students seem like not getting involved actively in the learning process in the classroom, the students only write the material written by the teacher on the Board. In forming groups, students tend to choose the members of a group by his/herself and more interested in choosing their seatmate. The clever students do not want to team up with the students who are less clever. Learning method used by teachers is still dominated by the teacher-centered lecture method, so that the students are not really active in rolling the learning process. This learning process makes the students get bored. It can be real fact that using this method is not really effective because only some students are active in the learning process. The observation results of the students' activeness at pre-cycle as follows:

a) Expressing the idea, it is about 28% of students.
b) Listen to the opinion; it is amounted to 24% of students.
c) Giving the respond, it is about 20% of students.
d) Presenting the results of discussion group, it is amounted to 20% of students.
e) Asking a teacher or a friend is about 32% of students.
f) Reading the learning material is amounted to 20% of students.

After Looking at the fact of it, the learning process should more innovation make the students more active in learning process. Teachers provide a learning

opportunity for the students to make them active in seeking and getting the knowledge. They have found that students learn best when they are actively involved in the classroom activities[2]. The teaching done by the teacher should be effective to make the students more active. So that the learning process should be centered to the students, the student-centered active learning process within which teacher is merely a guide is the focal point of contemporary education systems [3]. Points out that Active learning is simply engaging the students in some activities that stimulate them to think about and react on the information presented[4].

To increase the students activity, teachers should know the things that affect the learning process of the students, either inhibit or support. The learning condition should be more enjoyable for the students, so they are able to have the high enthusiasm in following the learning process. The main thing that most triggers the liveliness of the students in the classroom is the emergence of curiosity, interest, and the interest of the students about something that being learned. The emergence of the curiosity and interest in the subjects is affected by the condition of class that is able to regenerate the feelings. Their 'active' class as containing quizzes, critical thinking exercises, demonstrations, discussions, and in-class activities[5]. One effort that can be done in order to create an atmosphere of fun learning is using the cooperative learning model. Cooperative learning process, in cooperative learning methods, students work together in four members' teams to master material initially presented by the teacher[6]. Cooperative learning should not be the teacher who transfers the knowledge to the students but students can exchange of knowledge one another. Each individual will be more caring each other and more commit of their success when they work together cooperatively than they just compete each other to show the most superior one. The more often the students study in cooperative groups, they will love each other [7].

Cooperative learning models that can make the students active in learning is cooperative learning model of Jigsaw type and make a match type (looking for couples). Jigsaw, each member of a group was assigned a different part of material. Then all the students from different groups who had the same learning material gathered together "expert group" to discuss and communicate with each other until they all mastered the material[8]. Later, the students returned back to their home group to teach the material to other members of their group. This cooperative jigsaw type emphasizes the students to mutually cooperate in discussion and help each other to understand the learning material to arise the interaction between the students. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement, students work through the assignment

until all group members successfully understand and complete it [9]. Teacher is not the sole provider of knowledge because most of the work is done by the students themselves which makes it an efficient way to learn [10]. Since jigsaw-based cooperative learning activities distribute tasks to all the members in the group, they not only increases student interaction, but can also get all the students to participate in the learning activities, thus enhancing the cooperative learning effects [11]

Make a match type (looking for couples) is a learning model that asks students to look for a partner answers/question card before the time limit which has been specified [12]. By the time the game takes place, the teacher hold machining assessment is CATEGORIZED differently, that is how much the game score results of students. Learning strategies with make a match become one of the innovative strategies in the learning process. The goals of this strategy are: 1) the deepening material; 2) excavation material; 3) edutainment [13]. The purpose of this research is to increase the students activity by using cooperative learning, jigsaw-type and make a match type on students third grade at elementary school 02 Troketon Indonesia in academic year 2015/2016.

II. METHODS

This research is carried out in elementary school 02 Troketon district Klaten Indonesia. The type of research used is research classroom action research, with the variable type cooperative learning jigsaw type and make a match type, as well as the variable bound to the students activity. The subject in this study is the third grade students at elementary school 02 Troketon in academic year 2015/2016. The number of third grade students is 25 students that consist of 10 male students and 15 female students. The data collection method uses observation and documentation. The validity test of the used was sources triangulation and method triangulation. Technique of the data analysis uses quantitative data analysis, qualitative data analysis, and comparative data analysis. Performance indicator in this research is the students activity up to $\geq 75\%$ from all students.

This research procedure is implemented in the form of a cycle that takes place repeatedly. Classroom action research is done through four phases, namely: (1) planning, (2), implementation (3) the implementation of the observations, and (4) reflection.

A. Planning

The steps to plan a cooperative learning model by applying a jigsaw type and make a match as follows.
1) The teachers make the learning implementation plan using cooperative learning Jigsaw type and make a match type.
2) Make an individual evaluation of the matter in the form of a written test.

3) The teachers make the media card game in form of questions and answers.
4) The teachers make the observation sheet act the teacher and the liveliness of the students.
5) The teachers form the groups consisting students who used for the application of cooperative learning jigsaw type and teachers form the students that consisted of 12-13 stud to the application of the cooperative learning to make a match type.

B. Implementation

Implementation of the use of cooperative learning jigsaw type and make a match type is conducted in two sessions. Learning activities is in accordance with the plan of implementation that has been planned. The following steps of the learning cycle:
1) The teacher presents an introduction of the material to be covered.
2) The teacher divides the learning topic into five subtopics.
3) The teacher divides the students into several groups of 5 students.
4) Each student in the group is given a different material, part of the group called the Group of origin.
5) Members of other groups who get the same subtopic are gathered into a single group called the Group of experts.
6) After a group of experts in a discussion then each member of the group of experts return to their home groups and explained to each member of the original group about the results of the discussions with the group of experts.
7) The teacher prepares the card game that contains a learning material that used for games, one part of the card is reserved and one part of the answer card.
8) Each student gets a card that consists the question/answer.
9) Each learner looks for a pair of cards that match the cards.
10) Each learner that can match the cards within the specified time limit is given the points.
11) The cards are scrambled again so that students get a different card.
12) Students can join with 2 or 3 people who have cards that comply with the card. The group that has the highest points will be awarded.
13) Students work on the question of evaluation.
14) If the time is up, the students should submit their work to the teacher.

C. Observation

The teacher does the observation about the students activity using the observation sheets have been prepared earlier. The teacher observes the students activity during the learning process. The students activity are observed among others, issuing opinions, listening to the opinions, giving responses, presenting the results of the group discussions, asking a teacher or friend, reading material and learning well. Observations are also made against a teacher who taught at a time when using the cooperative learning, jigsaw-type model and make a match type. The observations are recorded in order to obtain the accurate data in order to repair the next cycle.

D. Reflection

At this stage, The researcher and teacher do the analysis activity from the result of the learning process which has been conducted whether the process of learning has been conducted run well based on the purpose and the plan. By evaluating the barriers and shortcomings on the learning that has already implemented it will be made a determination of whether the research will be forwarded or not. The research will finish when the desired success indicators have already been achieved.

III. RESULT AND DISCUSSION

This Research is conducted in three cycles with two meeting on each cycle. At the first meeting of the application in cooperative learning model Jigsaw type and type of make a match, in the second meeting with the application of the cooperative learning model type of make a match. Increasing the students activity can be seen in the following table.

Table 1 the Indicators of the Students' Activity

The Activeness Indicators	Pre-Cycle	Cycle I	Cycle II	Cycle III
Giving the opinion	28%	48%	68%	92%
Listening to the opinion	24%	40%	64%	88%
Giving the feedback	20%	40%	60%	84%
Presenting the result of group discussion	20%	36%	60%	84%
Asking the questions to teacher or friends	32%	48%	68%	92%
Reading learning material	20%	40%	60%	88%

Table 1 shows that every indicator of students' activity gets increased in a significant percentage of the cycle, pre-cycle, cycle I, cycle II, and cycle III. Counting score percentage is calculated from the number of students entering category sometimes and often do indicators of activeness. After calculating each indicator number of determinations, it will determine the number of the students in active category. The summary of students comes in each category which is explained on the following table.

Table 2 the Category of Students' Activity

Categories	Pre-cycle	Cycle I	Cycle II	Cycle III
Very active	0%	0%	0%	0%
Active	0%	12%	36%	76%
Quite active	16%	20%	32%	16%
Not active	36%	68%	32%	8%
Not very active	48%	0%	0%	0%

Table 2 show applying cooperative learning in learning process, jigsaw-type model and make a match type conducts the observation against the students activity. The students activity prior to the application of the cooperative learning model jigsaw type and make a match can be seen that only some students do the activeness indicators. The students activity in pre-cycle process, there is no active students in its category, 4 students fall into the category quite active, 9 students are in not active category, and 12 students fall into not very active category. As much as cycle I, 3 students head in the active category. There are 5 students fall into the category of active enough, 17 students fall into not active category, and none of the students in not very active category anymore. In cycle II, there are 9 students fall into active category, and 8 students fall into quite active category. Besides, 8 students fall into not active category. In cycle III, there are 19 students that head into active category. 4 students are in quite active category, and 2 students fall into not active category.

The students who are in not very active category only can be seen in pre-cycle process. In not active category, it occurs decreasing the students from cycle I, and from seventeen students turn to eight students in cycle II and two students in cycle III. In quite active category, there are five students in cycle I, eight students are in cycle II, and four students are in cycle III. In active category, there are three students in cycle I, nine students are in cycle II, and nineteen students include in cycle III.

The increasing of students' activity in every action by applying cooperative learning, jigsaw-type model and make a match type can turn the role of students during learning process. In increasing students' activeness, these strategies include educative assessment, active learning, the use of small groups, and using the taxonomy of significant learning to define learning outcomes[14]. Active learning as anything course-related that all in a class session are called to do other simply watching, listening, and taking note[15]. In conducting action session, the teacher gives the opportunity to students to learn by themselves with material group study that has been given by the teacher. On the other hand, students experience the learning activities independently. The role of active students can

be seen here by the students' way in joining group discussion activities.

In the learning process, students learn by their own self with their group, and they can explain the results of the group discussions. That way, the initial learning of teachers just gives a direction in mentoring students and organizing the learning steps. The role of students activeness are able to influence the learning outcomes, active learning students achieve higher conceptual understanding compared toother students who studied the same courses[16]. The traditional learning the extent to which students are engaging in activities had been be linked with high quality learning outcomes[17].

Based on the result of observation, the activeness of students can be viewed in the increasing students activity at third grade of elementary school 2 Troketon Indonesia. In the learning process by using cooperative learning, jigsaw-type model type and make a match, students are given a different learning materials from each group of experts then each group member returns to the original group to present the results of the discussions in the group of experts on the application of the game while the students in a group match of the card and the card the right answer.In each learning process, using learning model cooperative jigsaw type and make a match type emphasizes the students to have a discussion. This discussion is used to train cooperation between students and reinforce the interaction between students and teachers because in discussion session, the students can provide feedback, listening to the response, releasing the idea along with the idea, asking that it can solve problems and presenting the discussion result eventually. Thus may increase the students activity.

Therefore, it can be known one of the efforts to improve the result of learning in the students activity by implementing cooperative learning, jigsaw-type model and make a match type.

IV. CONCLUSION

The result of the research action class that has been conducted in elementary school 2 Troketon Indonesia has obtained the data that the students activity in the learning process by applying cooperative learning, jigsaw-type model and make a match type conducted observation against the students activity. The students activity before conducting cooperative learning, model type jigsaw type and make a match type, there are only partially active students in the learning process.There are some indicators of the activeness, and most of the students do not ever do them. It has increased more in the students activity from each indicator in each cycle which has been done. At the end of cycle III, all indicators the activeness of students' learning are increased. From the results of data analysis, it can be concluded that the use of

cooperative learning, jigsaw-type model type and make a match can increase the students activity in the third grade of elementary school 2 Troketon Indonesia in academic year 2015-2016.

Based on the conclusion, the researcher gives the suggestion as follows. (1) Teacher should give cooperative learning model in jigsaw type and make a match type in teaching and learning process in order to get increased the role of students' activeness. (2) Students should be active in joining whole activities in learning process, and they have to pay attention to teacher' explanation in using cooperative learning of jigsaw type and make a match type then they can have effective outcome in learning process. (3) The school should have a role in socializing and facilitating the teachers in implementing innovative learning especially in cooperative learning method of jigsaw type and make a match type or other methods in learning social science in order to have fun learning.

REFERENCES

[1] Susanto, Ahmad. 2014. Pengembangan Pembelajaran IPS di Sekolah Dasar. Jakarta: Prenamedia Group

[2] Lee, Hyun-Hwa&Jean D. Hines. 2012. Incorporating Active Learning and Student Inquiry into an Introductory Merchandising Class. International Journal of Higher Education.2 (1). 55-69. http://files.eric.ed.gov/fulltext/EJ1081466.pdf. Date retrieved: March 6, 2016

[3] Akınoğlu, Orhan & Ruhan Özkardeş Tandoğan. 2007. The Effects of Problem-Based Active Learning in Science Education on Students Academic Achievement, Attitude and Concept Learning. Eurasia Journal of Mathematics, Science & Technology Education (3) 1. http://ejmste.com/v3n1/EJMSTEv3n1_Akinoglu.pdf. Date retrieved: March 9, 2015

[4] Soltanzadeh, Liele, Seyed Reza Nazari Hashemi and Sakineh Shahi.The effect of active learning on academic achievement motivation in high schools students. Archives of Applied Science Research 5 (6).http://scholarsresearchlibrary.com/aasr-vol5-iss6/AASR-2013-5-6-127-131.pdf. Date retrieved: March 14, 2016

[5] Hackathorna, Jana, Erin D. Solomonb, Kate L. Blankmeyerb, Rachel E. Tennialb, and Amy M. Garczynskib. 2011. Learning by Doing: An Empirical Studyof Active Teaching Technique. The Journal of Effective Teaching.11 (2). 40-54. http://uncw.edu/jet/articles/Vol11_2/Hackathorn.pdf. Date retrieved: March 14, 2016

[6] Taniredja, Tukiran, Efi Miftah Faridli and Sri Harmianto. Model-model Pembelajaran Inovatif and Efektif. Bandung: Alfabeta

[7] Johnson, David W, Roger T Johnson, and Edythe Johnson Holubec. 2010. Colaborative Learning: Strategi Pembelajaran Untuk Sukses Bersama. Diterjemahkan oleh Narulita Yusron. Bandung: Nusa Media

[8] Mengduo, QIAO & JIN Xiaoling. 2010. Jigsaw Strategy as a Cooperative Learning Technique: Focusing on the Language Students. Chinese Journal of Applied Linguistics (Bimonthly).33 (4). 113-125

[9] Naomi, Mbacho W, Prof. Bernard Nyingi Githua, PhD. 2013. Effects Of Jigsaw Cooperative Learning Strategy On Students' Achievement In Secondary SchoolMathematics In Laikipia East District Kenya. Asian Journal Of Management Sciences And Education 2 (3). http://www.ajmse.leenaluna.co.jp/AJMSEPDFs/Vol.2(3)/AJMSE2013(2.3-18).pdf. Date retrieved: March 14, 2016

[10] Adams, Francis Hull. 2013. Using Jigsaw Technique As An Effective Way Of Promoting Cooperative Learning Among Primary Six Pupils In Fijai. International Journal of Education and Practice, 1 (6). 200-210

[11] Huang, Yueh-Min, Yi-Wen Liao, Shu-Hsien Huang & Hsin-Chin Chen. 2013. A Jigsaw-based Cooperative Learning Approach to Improve Learning Outcomes for Mobile Situated Learning. International Forum of Educational Technology & Society. Journal of Educational Technology & Society (17) 1. http://www.ifets.info/journals/17_1/12.pdf. Date retrieved: March 6, 2016

[12] Rusman. 2013. Model-model Pembelajaran Mengembangkan Profesionalisme Guru. Jakarta: PT. Raja Grafindo Persada

[13] Huda, Miftahul. 2013. Model-Model Pengajaran and Pembelajaran. Yogyakarta: Pustaka Pelajar

[14] Stack, Steven. 2015. Learning Outcomes in an online vs traditional course. International Journal for the Scholarship of Teaching and Learning.9 (1). 1-18

[15] Ito, Hiroshi & Nobuo Kawazoe. 2015. Active Learning for Creating Innovators: Employability Skills beyond Industrial Need. International Journal of Higher Education.4 (2). 81-91

[16] Pundak, David, Orit Herscovits, Miri Shacham and Rivka Wiser-Biton. 2009. Instructors' Attitudes toward Active Learning. Interdisciplinary Journal of E-Learning and Learning Object.5. 215-232. http://www.ijello.org/Volume5/IJELLOv5p215-232Pundak669.pdf. Date retrieved: April 18, 2016

[17] Afayombo, Grace. 2014. Enhancing Learning Outcomes in Psychology through Active Learning Strategies in Classroom and Online Learning Environments. International Journal of Learning & Development. International journal of Learning & Development (4) 3. http://www.macrothink.org/journal/index.php/ijld/article/viewFile/6703/5504. Date retrieved: March 6, 2016