

The Effectiveness of Cooperative Learning Approach with Student Teams-Achievement Division and Numbered Head Together to Improve Elementary School Students' Social Skills

Agus Setiawan
Primary School Education
Universitas Negeri Yogyakarta
 Yogyakarta, Indonesia
 agus0296pasca@student.uny.ac.id

Christina Ismanati
Educational Curriculum and Technology
Universitas Negeri Yogyakarta
 Yogyakarta, Indonesia
 ismanati_fipuny@yahoo.com

Abstract—This study aims to describe the impact differences among STAD, NHT and conventional cooperative learning models on students' social skills and the effectiveness of cooperative learning approach with Student Teams-Achievement Divisions (STAD) and Numbered Head Together (NHT) in performing Social Skills. It used the quantitative method with quasi-experimental design using the pretest and the posttest group design. The research participants were fifth grade students of Elementary School Muhammadiyah 1 Magelang, who were selected using the simple random sampling technique. The hypothesis were tested using paired t-test and Anova with a significance level of 5%. The results of the study demonstrated that there are differences in the effect of STAD, NHT and conventional cooperative learning models on students' social skills and cooperative learning model type STAD and NHT are effective to improve students' social skills.

Keywords— *STAD, NHT, Social Skills*

I. INTRODUCTION

The emergence of various problems faced by Indonesia today is increasingly encouraging the spirit and efforts of the government to prioritize character education as the basis of education development. Character education is now a major discourse in national policy in the field of education. All learning and teaching activities that exist in Indonesia should refer to the implementation of character education. This spirit is implicitly asserted in the 2005-2025 National Long Term Development Plan or RPJPN in Indonesian, in which the Government makes character building as one of the national development priority programs. One of the government's real efforts in building character education in Indonesia is the implementation of the 2013 curriculum. Character education is a very important education for individuals, especially for children, because educating children's character is used as a process to shape a child's good personality. Character education itself is a process of

changing the attitude and behavior of a person or group of people through the efforts of teaching and training. It was intended to build a character of the person's self in order to become better in morals and behavior in everyday life. Absolute character education is carried out so that every person is expected to perform commendable behavior. Social skills are one of the things emphasized in character education.

Social skills are very important for people's life. Social skills are people's ability to communicate with others both verbally and non-verbally. Without this skill man cannot interact properly with others, so his life is less harmonious socially. In real life humans will be confronted with differences between individuals and between social groups. The children's provisions to overcome these individual differences are to be able to apply social skills. These skills are one of the skills that must be developed in the early age and is not built overnight. Instead, it is a skill that must be learned through imitation and habituation from the children's immediate environment. Social skills need to be familiarized in the early age because children's skills will be carried by them until adulthood.

Based on the interviews with several teachers and observations on the learning process, some problems are found in SD Muhammadiyah 1 Kota Magelang, such as the students who are less able to socialize with their peers, tend to play with the same students every day. There are some small groups of students in the school so that students who are members of these groups are reluctant to mingle with other students although they are on a different class these students only hang out with their group. Although students work in small groups but the relationship between students and teachers is very good. It was observed when the students meet the teacher. It is almost certain that they will greet their teacher and often shook the teacher's hand which is a

typical Indonesian greeting when people meet older people. Less active students were also encouraged by teachers by giving students time to ask about materials that have not been understood or by providing a stimulus in the form of a questions. Furthermore, the teacher also said that the students did not dare to directly ask the questions, answers or ideas they got on the grounds that they were afraid that what they said was different from that of most other friends. The teaching-learning process that is still dominated by teachers is less appropriately to be applied in learning process if the aim is to raise the spirit of students in learning. That's because learning becomes unattractive and makes students feel bored and the learning atmosphere becomes unpleasant. In such conditions and situations, the students are reluctant to receive and understand the materials.

In overcoming these problems, it is encouraged that the teacher start to perform activities that can improve social skills and responsibility. For example in schools, teachers are encouraged to use a more modern method or model, such as cooperative learning. Implementing the basic principles of a cooperative learning system correctly will enable teachers to manage the class more effectively. In cooperative learning, the students do not merely depend on the teacher. Students can learn from each other. Peer learning is more effective than teacher learning. In this learning model students are given the opportunity to communicate and interact with their friends to achieve the learning objectives, while the teacher acts as a motivator and facilitator of student activities.

Cooperative learning is a group learning activity organized by the principle that learning should be based on informational exchanges among the learning groups. Each learner is responsible for his own learning and is encouraged to enhance the learning of the other members. Cooperative learning attempts to improve the learning process activities through group work and also increase social activities. Student Teams-Achievement Division (STAD) and Number Head Together (NHT) are some types of cooperative learning.

II. RELATED WORKS/LITERATURE REVIEW

There are some studies relevant to the current study. Asrida, H. Lukman Nadjamuddin, dan Nuraedah discusses the effect of cooperative learning model Numbered Head Together (NHT) type on social skill of students at SMAN 3 Sigi. The results indicate that variable of cooperative learning model Numbered Head Together type (X1) influences social skills of the students at SMAN 3 Sigi with t_{counted} value of $2.159 > t_{\text{table}} 2.045$; and variable of learning style influences students' social skill with t_{counted} value of $2.050 > t_{\text{table}} 2.045$. Moreover, variable of cooperative learning model Numbered Head Together

type (X1) and learning style (X2) simultaneously improve students' social skill of with F_{counted} value of $27.234 > F_{\text{table}} 1.84$ [1].

Suandi Sahdan, Lasmawan Wayan, Sariyasa discusses the effect of Student Teams-Achievement Divisions (STAD) on the social study learning outcomes and social skills on fifth grade elementary school students of SD Negeri 1 Jerowaru Lombok Timur. The result of the research shos that: (1) the students' learning achievement after exposed to cooperative learning model STAD type is better than those using conventional learning model, (2) the students' social skill of after exposed to cooperative learning model STAD type is better than those using conventional learning model, (3) the students' learning achievement and social skills after exposed to cooperative learning model STAD type is better than those using conventional learning model [2].

A. Cooperative Learning

Cooperative learning arises because of the development of the existing learning system. It replaces individual learning systems. Cooperative learning model is a series of learning activities undertaken by students in certain groups to achieve the objectives of learning that have been formulated "Cooperative learning refers to a variety of teaching methods in which students work in small groups to help one another learn academic content. In cooperative classrooms, students are expected to help each other, to discuss each other's current knowledge and fill in the gaps in each other understanding. Cooperative work rarely replaces teacher instruction, but rather replaces individual seat work, individual study, and individual drill. When properly organized, students in cooperative groups work with one other to make certain that everyone in the group has mastered the delivered concepts"[3].

It implies that cooperative learning refers to a variety of learning models in which students work together in small groups consisting of various levels of achievement, sex, and different ethnic backgrounds to help learning the materials. In a cooperative class, students are expected to help each other, discuss each other, and argue for sharpening the knowledge they have currently mastered and add their understanding. Cooperative learning is more than just learning in a group because this model of learning entails a structure of encouragement and tasks which could enable open interaction and effective interdependent relationships between group members.

Cooperative learning model is the learning model where the students with different learning abilities work in small groups. The groupings are based on: (a) available facilities, (b) types of work provided, (c) sweepstakes or random, (d) sex, (e) individual differences in interest and learning ability [4]. In completing the tasks assigned to each group, each

member works together and helps each other to understand. Cooperative learning is organized and managed and the students work cooperatively in small groups to achieve academic, affective and social goals. Beyond these overall gains, research also suggests that the cooperative learning may lead to gains in thinking skills [5].

Cooperative learning is learning that create active students. In the process of learning students work in groups to actively engage and construct their knowledge together so that each member in the group establish a psychological relationship and coordinate with each other to contribute for their group.

B. STAD type cooperative learning model

One of the cooperative learning types, that is Student Teams-Achievement Division (STAD) is the simplest type of cooperative learning, making it suitable for the teacher who have just started to implement cooperative learning [3]. Cooperative learning model is characterized by the task structure, the structure of interest and reward structures. The students are encouraged to work together on a common task and they must coordinate their efforts to accomplish the tasks assigned by the teacher. The purpose of the cooperative learning model is that students' academic achievement improves and they can embrace diversity of their peers, as well as develop their social skills. STAD employs small groups with 4-5 students in each group [6]. Based on the explanation can be concluded that The members in each group are expected to have different characters either by level of achievement, gender, racial/ethnic groups, or other social groups. Learning materials are designed using (Student Activity Sheet) or device other learning and the students work together to deal with the task. Students help each other to understand the material, so that each group member can understand it completely. The importance of working together is also revealed by Morton Deutsch. If individuals are working co-operatively together, they will perceive themselves to be psychologically interdependent than individuals who are in a competitive social situation. When this happens, group members will actively co-ordinate their efforts, ensuring that others have the opportunity to contribute, provide help and assistance when it is needed, and encourage others efforts [7].

Gilles and Ashman reported the results of their research conducted in 1970 that the influence of peer tutors on improving students' academic and social is very helpful for students to develop a more active learning. Learning with peer tutoring methods is considered capable of eliminating awkwardness and anxiety level of students compared with the delivery of materials by the teacher. This is because learning with peers is considered able to reduce the level of awkwardness in asking, and reduce students' anxiety

in the learning process, which is usually caused by their lack of understanding of the delivered material. Besides, the language used is also easier to understand, and among them there is no sense low self-esteem and reluctance to ask questions and express their learning difficulty. Thus, the learning process can run more effectively. For tutors, learning also has a positive value; teaching materials is one effective way of learning to instill a deeper understanding. The main idea of cooperative learning method with STAD technique is to make students encourage each other and help them in completing those skills delivered by the teacher. If the students want their team get the award, they should help a friend in one team in studying learning materials. They must encourage his teammates to do the best, expressed the opinion and it leads to less stressful atmosphere. STAD consists of five main components: class presentation, teams, quizzes, individual improvement and team recognition [3].

C. Model of cooperative learning type NHT

Numbered Head Together (NHT) is a learning model based on constructivist learning theory. Although it has many similarities with the other approaches, but this approach gives emphasis on the use of specific structures designed to influence students' interaction patterns [8]. NHT is an approach developed by Spencer Kagan (1993) to involve more students in reviewing materials converted in a lesson and to check their understanding of a lesson's content. Instead of directing questions to the whole class, the teacher uses the following four-stage structure: 1) numbering, 2) frequently asked questions, 3) heads together, and 4) responding.

Numbered heads: Students in a group letter off A, B, C, etc. Therefore, each person has a specific and distinct number and letter. All students are responsible for the individual learning One student (such as 5B) is called on to disagree, to elaborate, or to offer an alternative perspective [9].

In NHT the students are grouped into A, B, C, etc. Each person has certain letters and numbers. All students are responsible for learning individually or in groups, and they were in discussions regarding the teacher's lessons and be sure every member of the group and understand the delivered material. Then one student was called by the teacher, e.g., 5B or all of the B group can be asked to comment on a question: agree, disagree, decompile, or offer an alternative perspective. Baker (2013: 6) reveals the learning model of NHT creates the positive interdependence and individual accountability of the students. A successful response equals immediate success for both the group and the individual student. For effective groups, an observer will notice promotional interactions, appropriate use of group learning skills, and respectful, honest, group processing.

It means that in the NHT learning model, students are divided into groups of 4. Each student has a responsibility for the success of his group. Successful response equals success to groups and individuals. NHT learning model emphasizes students to work together in groups so that each group member understands the results of group work and is responsible for the work, so that in the students feel that they should be actively involved in the learning process. Thus, students will feel motivated to learn. It can be concluded that cooperative learning is a model or learning strategy that classifies students in small groups with heterogeneous ability so that students can work together and foster social behavior attitude.

NHT is recommended by Kagan as a strategy that is particularly useful for checking students' understanding of learning objectives. NHT is basically a variant of group discussion; the twist is having only one student representing the group but not informing the group in advance who will be the representative [3]. The involvement of all students in the group becomes an important aspect in the learning process in the cooperative model with NHT type. However, to develop group awareness among students takes a long time. This is one of the weaknesses of NHT [10].

D. Social Skills

Social development is the acquisition of the ability to behave in accordance with social demands. Children's social developments are dynamic and are strongly influenced by the environment [11]. Each stage of their development indicates a distinctive feature of their social ability that will be an important part of the next development. The expected social development of preschoolers are certainly different from the children in elementary school as it is well understood that their social skills are expected to have an impact on their social knowledge in primary school. Children love to be accepted and are love to play together with their peers. This togetherness makes them work together in making plans and get things done. They encourage each other and build self-concept through social interaction at school. School is a place where they will build satisfaction through self-esteem.

The social skill is the ability to interact with others in a given social context [12] in specific ways that are socially acceptable or valued at the same time. Cliekman reveals that social coherence is the ability to take another perspective on a situation and learn from past experiences and apply it to the ever-prevalent learning of the social landscape [13]. The ability to respond flexibly and appropriately defines a person's ability to handle the social challenges that are to us all.

Cartledge, Gwendolyn, and Milburn suggest that there are four aspects related to children's social skills:

- 1) *environmental behavior*,
- 2) *interpersonal behavior*,
- 3) *behavior relating to oneself (self-related behavior)*,
- and 4) *the behavior associated with the task (task-related behavior)* [14]. In terms of social behavior, there are three types of definitions of social skills: peer acceptance, behavior, and social validity [15].

III. MATERIAL & METHODOLOGY

This research uses a quantitative approach with quasi experiment type. This form of design is a development of true experiment which is difficult to implement. In the true experiment, the researcher can control all the outside variables that might influence the course of such experiments strictly. The class situation as a research setting makes it impossible to exercise such tight control as true experiment, so that the researcher chooses quasi experiment in the research to be performed. The design of this study was Nonequivalent Control Group with pretest-posttest design. In this design there are three groups: one control group and two experimental groups. Two experimental groups were treated in the form of STAD and NHT cooperative learning application. Nonequivalent Control Group pretest-posttest Design

Group	Pretest	Treatment	Posttest
KE1	O1	X1	O2
KE2	O3	X2	O4
KK	O4		O6

Note:

- KE1 : First Experimental Group
- KE2 : Second Experimental Group
- KK : Control Group
- O1 : *Pretest* First Experimental Group
- O2 : *Pos-test* First Experimental Group
- O3 : *Pretest* Second Experimental Group
- O4 : *Posttest* Second Experimental Group
- O5 : *Pretest* Control Group
- O6 : *Pos-test* Control Group
- X1 : Treatment at First Experimental Group with cooperative learning approach type of Student Teams-Achievement Divisions (STAD)
- X2 : Treatment at First Experimental Group with cooperative learning approach type of Numbered Head Together (NHT)

The reserach participants were 145 students of fifth grade of Muhammadiyah 1 Magelang in the second semester of academic year of 2017/2018. The students of the three classes of fifth grade were drawn using simple cluster random sampling technique to select the members of the sample. Among three

classes of the sample, two classes were determined as experimental groups, and a class as a control group. There were 35 students as the experimental group 1 and 2 and 37 students for the control group.

The questionnaire was used to collect data, including students' social skills. The questionnaire was given to the control group and experimental group twice. It was conducted before treatment and after treatment and the collected data from the questionnaire is intended to measure the students' social skills during teaching learning activity. There were two techniques of analysing the data of this research, namely descriptive and inferential statistics. In the descriptive analysis, there were two formulas used in the computation; the mean and the standard deviation analysis. In the inferential statistics, this research used test of normality, test of homogeneity, and test of hypothesis.

IV. RESULTS AND DISCUSSION

The data description explains the results of the tests. This research employed three groups. It describes the test scores of the students in the experimental group who were taught by using cooperative learning approach type of Student Teams-Achievement Divisions (STAD) and Numbered Head Together (NHT) and the students in the control group who were not. The pretest and the posttest were utilized in each group. The descriptive analysis is applied to calculate mean, standard deviation of the two variables, the highest score and the lowest score. The result of the descriptive statistics can be seen in Table I.

TABLE I. THE RESULT OF THE DESCRIPTIVE STATISTICS

Keterangan	Mean	Std. Deviation	Max	Min
Pretest control	48.86	6.117	60	40
Pretest NHT	48.91	6.342	61	40
Pretest STAD	48.63	5.904	59	40
Posttest control	57.31	7.439	71	44
Posttest NHT	65.72	6.600	77	56
Posttest STAD	65.37	7.490	78	53

The researcher used the SPSS Statistics version 24 to analyze the quantitative data. The result of the pretest control statistic calculation using SPSS showed that the mean value was 48,86 with the standard deviation of 6,117. The maximum score for pretest of the control class was 60 and the minimum score was 40. The result of pretest NHT statistic calculation using SPSS showed that the mean value was 48,91 with the standard deviation of 6,342. The maximum score for pretest of the control class was 61 and the minimum score was 40. The result of the pretest control statistic calculation using SPSS showed that the mean value was 48,63 with the standard deviation of 5,904. The maximum score for pretest of the control class was 59 and the minimum score was 40. The result of posttest control statistic

calculation using SPSS showed that the mean value was 57,31 with the standard deviation of 7,439. The maximum score for pretest of the control class was 71 and the minimum score was 44. The result of posttest NHT statistic calculation using SPSS showed that the mean value was 65,72 with the standard deviation of 6,600. The maximum score for pretest of the control class was 77 and the minimum score was 56. The result of posttest STAD statistic calculation using SPSS showed that the mean value was 65,37 with the standard deviation of 7,490, the maximum score for pretest of the control class was 78, and the minimum score was 53.

Normality test was aimed at finding out whether or not the collected data showed a normal distribution. In this study, the formula used to test the normality of the data is Kolmogorov-Smirnov formula. The data tested are the pre-test and the post-test data in the experimental class and the control class. If the result showed the index (P) > 0.05 (α : 5%), the data in this study were normally distributed (Carver 2012: 140). Then, the data were analyzed using SPSS. The distribution of the normality test results can be seen in Table III.

TABLE II. THE RESULT OF NORMALITY TEST

No	Variable	Group	Sig	Interpretation
1	Pretest	Control	0.95	Normal
		NHT	0.77	Normal
		STAD	0.2	Normal
2	Posttest	Control	0.2	Normal
		NHT	0.132	Normal
		STAD	0.199	Normal

The table shows that the index obtained from normality test of the pretest control data is $0.95 > 0.05$ (α : 5%). Normality test of the pretest NHT data is $0.77 > 0.05$ (α : 5%). Normality test of the pretest STAD data is $0.2 > 0.05$ (α : 5%). Normality test of the posttest control data is $0.2 > 0.05$ (α : 5%). Normality test of the posttest NHT data is $0.132 > 0.05$ (α : 5%). The test for normality of the posttest STAD data is $0.199 > 0.05$ (α : 5%). The whole calculation produces (P) > 0.05 (α : 5%), and it can be stated that the data used in this study were normally distributed.

TABLE III. THE RESULT OF THE HOMOGENEITY TEST

No	Variable	Sig	Interpretation
1	Pretest	0.746	Homogeneous
2	Posttest	0.631	Homogeneous

In reference to Table IV, it shows that the value of p (Sig.) of the pretest (0.746) and posttest (0,631) is higher than level of significance (0.05). Since the

probability is higher than 0.05 (>0.05), H_0 is rejected. It implies that the sample of is homogeneous.

TABLE IV. PAIRED SAMPLE T-TEST

No	Group	Sig
1	NHT	0,000
2	STAD	0,000

In reference to Table V, it shows that the value of p (Sig.) of the NHT (0.000) and STAD (0,000) is lower than the level of significance (0.05). Since the probability is lower than 0.05 (<0.05) H_0 is rejected. It implies that the use of cooperative learning approach Student Teams-Achievement Divisions (STAD) type and Numbered Head Together (NHT) were effective for improving social skill of fifth grade students of Muhammadiyah 1 Magelang.

TABLE V. ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1518.692	2	759.346	14.690	.000
Within Groups	4858.978	94	51.691		
Total	6377.670	96			

In reference to Table VI, the test has a probability value of 0.000. In this research, the significant value of 0.05 or 5% was used. Because p (probability value) is lower than the significance value (5%), it means H_a was accepted and H_0 was rejected. In other words, it means that the use of cooperative learning approach type Student Teams-Achievement Divisions (STAD) and Numbered Head Together (NHT) had significant effect on fifth grade students' social skills of at Muhammadiyah 1 Elementary School, Magelang.

V. CONCLUSION

This study concludes that there are differences in the effect of STAD, NHT and conventional cooperative learning models on students' social skills. It also proposes that a cooperative learning model with STAD and NHT are effective against social skills.

REFERENCES

[1] Asridal , H. Lukman Nadjamuddin, dan Nuraedah., "Pengaruh Model Pembelajaran Kooperatif tipe Number Head Together (NHT) dan Gaya Belajar Terhadap Keterampilan Sosial Pada Siswa SMAN 3 Sigi," e Jurnal Katalogis 10 (4), 10-21 (2016)

[2] Muhamad Sahdan Suandi, W. Lasmawan, Sariyasa., "Pengaruh Model Pembelajaran Kooperatif tipe STAD

Terhadap Hasil Belajar IPS dan Keterampilan Sosial Siswa Kelas V Sd Negeri 1 Jerowaru Lombok Timur," e-Journal Program Pascasarjana Universitas Pendidikan Ganesha Program Studi Pendidikan Dasar (3), 1 (2013).

[3] Miftahul Huda, "Cooperative Learning Metode, Teknik, Struktur dan Penerapan", Pustaka Pelajar, 2011.

[4] Slavin, E. Robert, "Educational Psychology Theory and Practice," Paramount Publishing, 1994.

[5] Jacobs, G. M., Lee, C., & Ng, M., "Co-operative learning in the thinking classroom", Paper presented at the International Conference on Thinking, Singapore (1997)

[6] Trianto, "Model Pembelajaran Terpadu Konsep, Strategi, dan Implementasinya dalam KTSP", Bumi Aksara, 2010.

[7] Gillies, R. M. and Ashman, A.F, "Co-operative Learning: The Social and Intellectual Outcomes of Learning in Groups", RoutledgeFalmer, 2003.

[8] Arends. R.I. "Learning to Teach, Ninth Edition", McGraw-Hill Companies, 2012.

[9] Arends, R. I. and Kilcher, A. "Teaching for student learning : Becoming an accomplished teacher", Routledge, 2010.

[10] Sanjaya, Wina, "Strategi pembelajaran berorientasi standar proses pendidikan", Kencana Prenada Media Group, 2006.

[11] Elizabeth B. Hurlock, "Perkembangan Anak", Erlangga, 1978.

[12] Combs, ML & Slaby, DA., "Social Skills Training With Children", Plenum Press, 1977.

[13] Clikeman, M.S. " Social competence in children", Springer United States of America, 2007

[14] Cartledge, Gwendolyn & Milburn, J.F., "Teaching Social Skills to Children: Innovative Approaches", 1986.

[15] Matson, J. L., "Social Behavior and Skill in Children", Baton Rouge, 2009