Differences in Increasing an Economic Learning Outcomes by Applying the Cooperative Model of NHT (Numbered Head Together) and IOC (Inside Outside Circle) Models in Participants in Muhammadiyah 1 High School Palangkaraya

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Abstract
This study aims to determine and analyze learning outcomes by combining NHT (numbered head together) and IOC (inside the outside circle) cooperative learning models on the economic learning outcomes of Palangkaraya Muhammadiyah 1 High School students. The data analysis technique used in this study was a data analysis technique using the Wilcoxon signed rank test. The conclusions that can be drawn based on the results of this study are: the NHT (numbered head together) cooperative model has proven to be effective in improving the economic learning outcomes of students of Muhammadiyah 1 Palangkaraya High School, the cooperative model of the IOC type (inside outside circle) has been proven to effectively improve the economic learning outcomes of Muhammadiyah 1 High School students Palangkaraya, the merging of the NHT (numbered head together) and IOC (inside outside circle) cooperative model is effective on the economic learning outcomes of Palangkaraya 1 Muhammadiyah high school students.
Keywords: Economic Learning Outcomes, cooperative, NHT (Numbered Head Together) type, IOC type (Inside Outside Circle).

1. Introduction
Learning outcomes can be explained by understanding the two words that form them, namely "results" and "learning". Understanding the results (product) refers to an acquisition due to the conduct of an activity or process that results in changes in functional input. Production results are obtained due to the activity of changing *raw materials* into *finished goods*. Student learning outcomes are basically changes in behavior. Behavior as a result of learning in a broad sense covers the cognitive, affective and psychomotor fields. Every learning process carried out by students will produce learning outcomes. In the learning process, the teacher as a teacher as well as an educator holds a large role and responsibility in order to help improve the success of students influenced by the quality of teaching and internal factors of the students themselves.

According to Abdurrahman (2003) states that learning outcomes are abilities obtained by children after going through activities. Learning itself is a process of someone who is trying to obtain a relatively permanent form of behavior change. In programmed and controlled activities called learning activities or instructional activities, the goals are predetermined by the teacher. Good learning outcomes are only achieved through a good learning process. If the learning process is not optimal, it is very difficult to expect good learning outcomes. Assessment of learning outcomes implies learning outcomes as a program or object that is the target of assessment. According to Sudjana, learning outcomes as objects of assessment can be divided into several categories, including skills and habits, knowledge and understanding, attitudes and ideals.

In line with the opinion put forward by Sudjana, Dr. Purwanto said the learning outcome was a change in behavior caused because he achieved mastery over a number of materials provided in the teaching and learning process. Achievement is based on the goals that have been set. Learning outcomes can be in the form of changes in cognitive, affective and psychomotor aspects. Seeing the opinions put forward by the two experts, it can be concluded that the learning outcome is a change in behavior that occurs after following the teaching and learning process in school in accordance with the goals set. Changes in behavior expected after experiencing the learning process include three domains, namely cognitive, affective and psychomotor. Learning outcomes are behaviors that do not know to know, the emergence of new understanding, changes in attitudes, skills, respect for the development of social, emotional and physical growth. Learning outcomes are abilities students have after they have received a learning experience.

Based on the results of observations and the results *of the* initial *pre-test* the researchers found that the learning outcomes of some Muhammadiyah 1 Palangkaraya high school students, especially in economic subjects, had an average value slightly above the KKM (Minimum completeness criteria) of 6.5. While the KKM value of economic subjects at SMA Muhammadiyah 1 Palangkaraya the standard is 6.0. The average value of some of these students

is indeed not below the KKM value, but it can be a benchmark of the extent to which students are able to accept and absorb learning, especially in economic subjects. The average value of the learning outcomes is a reference for researchers to review and test the different learning methods that will be given to students of Muhammadiyah 1 Palangkaraya High School in terms of improving the quality and economic learning outcomes of Muhammadiyah 1 Palangkaraya High School students.

From the results of these preliminary observations it is deemed necessary to conduct research by testing different learning methods in terms of improving the economic learning outcomes of students of Muhammadiyah 1 Palangkaraya High School. According to Ernest Chang and Don Simpson (1997: 89) quoted by Iskandar that the learning model is a way to deal with future demands that are full of challenges and changes. Meanwhile, according to Trianto (2010: 51), states that the learning model is a plan or pattern that is used as a guide in planning learning in class or tutorial learning. The learning model refers to the learning approach that will be used, including teaching objectives, stages in learning activities, learning environment, and classroom management. Furthermore learning methods according to Djamarah (2006: 46) is a way that is used to achieve the goals set. In teaching and learning activities, methods are needed by the teacher so that their use varies according to what they want to achieve after the teaching ends. One component that contributes to the success of a learning process is the application of learning models that are relevant to the field of study being studied. Suprijono (2011: 58) emphasized that learning can spur students to interact well with other students, teachers can do by applying cooperative learning models.

According to Slavin (2011) cooperative learning is the way students work together in teams with heterogeneous members. Trianto, (2009: 56) explained that cooperative learning is a step to facilitate students in understanding concepts. Through cooperative learning students will discuss mutual assistance in understanding concepts so that learning completeness is achieved. According to the Ministry of National Education, through cooperative learning students are able to improve academic abilities, accept all forms of difference between their peers, have a high social life. Of the three opinions regarding the objectives of cooperative learning, it can be formulated that in essence cooperative learning aims to improve students' academic abilities, foster a sense of tolerance, and improve social skills.

One learning model that has the potential to be applied in learning economic concepts collaboratively is the NHT (*Numbered Head Together*) model. Huda (2011: 203), argues that group discussion using the NHT (*Numbered Head Together*) learning model can provide opportunities for students to exchange ideas or opinions and look for the most appropriate answers collaboratively. In this case, students are active in solving problems given by the teacher. Another cooperative learning model is the *inside outside circle* type learning model . The learning model *inside outside circle* is a learning model with a small loop system and a large circle that begins with the formation of a large group in the class of the group's inner circle and outer circle group (Rusman, 2013: 21). The *inside outside circle* learning model was developed by Spencer Kagan (1990). This learning model allows students to share information at the same time (Huda, 2013: 144) and it can be understood that the learning model with the type *inside outside circle* is a cooperative learning model that can also be used in learning economic subjects that stimulate student interaction with other students in the group and spurred the spirit of competition so that it has the potential to increase their abilities and creativity in participating in economic learning at school.

According to Wati (2014: 2) explained that the advantage of this learning model is the existence of a clear structure and allows students to share information with different pairs briefly and regularly. In addition, the type of learning model *inside outside circle* provides many opportunities for students to process information and improve understanding of economic concepts. So based on the description above, it is suspected that the learning model *inside the outside circle* can also improve students' understanding of economic concepts.

1.1. NHT (*Numbered Head Together*) Learning Model

According to Ibrahim, et al, 2000 in Sumarjito (2011: 3) explains that *numbered heads together* (NHT) is a learning method developed to involve many students in studying the material covered in a lesson and measuring their understanding of the subject matter. Meanwhile According to Lie (2010: 59) that what is meant by the method of teaching *numbered heads* is to provide opportunities for students to share ideas and consider the most appropriate answers. *Numbered heads together* (NHT) or numbering thinking together developed by Spencer Kagan (1992). The NHT learning model gives students the opportunity to exchange ideas and determine the most appropriate answers (Miftahul Huda, 2011: 138). Ridwan, (2015: 44) revealed that NHT is a model of cooperative learning that requires students to think together with their groups. Each group member is given a number and has the opportunity to answer questions from the teacher. The elements contained in the NHT model are as follows:
a. Syntagmatic
    According to Trianto, (2009: 82) the application of the NHT model was carried out through six phases:
1) Phase 1: Numbering,
2) phase 2: Asking questions,
3) phase 3: Think together,
4) phase 4: Answer the question.

b.   Reaction Principle

Describe the behavior patterns of the teacher in treating students when learning. The role of the teacher in NHT type cooperative learning is as a facilitator who is directly involved in learning. The teacher also acts as a guide for each group by creating a warm and pleasant atmosphere. The teacher explains about the procedures / rules of learning that will take place clearly so that all students can understand well. The teacher facilitates and directs students to form groups with efficient transitions. After groups are formed, the teacher gives direction on how to discuss the groups; where the teacher asks questions to students who have the same numbered head at random then the teacher observes students in the discussion. After students explain the answer, the teacher stabilizes the material and clarifies if students experience misconceptions.

c.   Social System

The social system in question is the norm contained in this model based on the democratic process and group decisions. The teacher is not entirely the center of attention, but there are times when attention is focused on students. The social system in learning is in the form of mutual assistance between friends in the group. Students work shoulder to shoulder in search of the most appropriate answer to the question received. When discussions take place to find the right answers, each group member must have different answers or ideas. In this case of course there must be an opinion that is accepted and rejected. This is where students will learn to respect the opinions expressed by friends. In addition, when the answers from all groups are read and corrected, it will be seen which groups have the highest and lowest achievements. Groups that have low achievement, will learn to accept the defeat of their own group and respect the victory of other groups.

d.   Carrying Capacity

In NHT cooperative learning one of them is the condition of the physical environment according to the needs of students in learning such as cleanliness and comfort of classrooms, the availability of adequate facilities and infrastructure to support the learning process in the form of desks, chairs, blackboards, etc. In addition, the teacher must prepare teaching materials used in the form of fraction material for students complete with Student Worksheets (LKS) or in the form of questions that are ready to be asked to students and learning resources (books and the environment around students) related to fraction material. Do not forget the teacher must prepare a Learning Implementation Plan (RPP) before carrying out learning activities.

e.   Instructional Impacts and Accompaniment Impacts.

The instructional impact is a learning outcome that students must master in the form of student abilities after receiving or completing their learning experience. The instructional impact after students take part in learning mathematics using the NHT type of cooperative learning model that is the process of group formation and management can be done efficiently according to students' interests but is still in the teacher's control; so that the learning process as a group can run well and achieve the expected goals. Through this type of NHT cooperative learning model, it is hoped that students can develop their knowledge through group discussions, so students will be more motivated to learn. Through the process of collaboration in groups, students practice for discipline and responsibility of each group member, so that all group members can actively participate in discussions.

1.2.   IOC Learning Model (*Inside Outside Circle*)

The learning model *inside outside circle* is a learning model with a small loop system and a large circle that begins with the formation of a large group in a class that consists of the group's inner circle and outer circle group. So that it can create variations when the teaching and learning process in class and can help improve student understanding (Ngalimin, 2012: 90). In line with Ngalimin (2012), Rusman (2013) also explained that the learning model *inside the outside circle* is a learning model with a system of small circles and large circles that begins with the formation of large groups in the class consisting of inner circle groups and outer circle groups. The *inside outside circle* learning model was developed by Spencer Kagan (1990). This learning model allows students to share information at the same time (Huda, 2013: 144). The steps of the *inside outside circle* learning model are as follows:

1)   The teacher divides students into groups of 3-4 people;
2)   Each group gets the task of finding information based on the division of tasks from the teacher;
3)   Each group learns independently, looking for information based on the assignments given;
4)   After completion, all students gather to mingle (not based on groups);
5)   Half the class then stands in a small circle and faces outward;
6)   The other half of the class forms a circle outside the first circle, facing inward;
7)   Two students in pairs from small and large circles share information. This information exchange can be done by all partners at the same time;
8)   Then the students in the small circle are still in place, while the students in the big circle shift one or two steps clockwise;
9)   Now it is students' turn to be in the big circle of sharing information. And so on, until all students have finished sharing information;

10)   The new movement is stopped if the inner and outer circle group members as the original pair meet again; and

11)   The teacher provides independent evaluation or practice questions.

According to Wati (2014: 2) the advantage of this learning model is that there is a clear structure and allows students to share information with different pairs briefly and regularly. In addition, the type of learning model *inside outside circle* provides many opportunities for students to process information and improve understanding of economic concepts.

2. Research Methodology

Research is a scientific activity undertaken by a researcher to obtain an outcome or problem solving from a series of systematic processes. Therefore, in the process of researching a particular method is needed which is evidence that research is carried out scientifically to obtain data that is suitable for its purpose and function. This chapter presents research designs, research subjects, research variables, data collection techniques and instruments, validity and reliability tests, and data analysis techniques.

2.1. Research design

Research design is needed to provide guidance to researchers in order to plan and carry out research and assist in the collection and analysis of data. This research uses a quantitative approach with an experimental method. Cresswell (2015: 576) states that experimental research is a way to test an idea to determine whether the idea can affect the outcome or the dependent variable. In this study the experimental design used *"Randomized Pretest-Posttest Comparasion Group"*.

This research design is considered the most flexible and most likely to be carried out in the realm of education and social research. According Purwanto (2013: 117) states that the *randomized pretest-posttest comparison group design* is not given treatment to the control group. Not giving treatment to the control group is considered inhuman. In a *randomized pretest-postest* comparation *group design* , the comparison group (which functions as a control group) is given treatment in the form of variations of the treatment variables, the number can be two or more.

This study uses an experimental design with a *Randomized Pretest-Posttest Comparison Group Design.* This design is an extension of the *single-group pretest-posttest design* . According Purwanto (2016: 131) states that the design of the *Randomized Pretest-Posttest Comparasion Group* is the best design in controlling the threat of internal validity. The design can be described as follows:
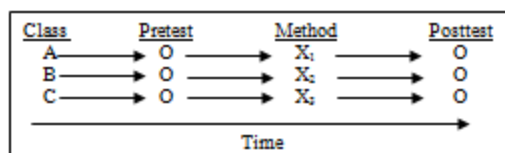

Class	Pretest	Method	Posttest
A	O	X_1	O
B	O	X_2	O
C	O	X_3	O

Time

Figure 1 . *Randomized Pretest-Posttest Comparasion Group* Research Design Chart

2.2. Population and Subject

The population is a group of individuals who have the same characteristics (Edmons and Kennedy, 2013: 15). The population in this study were all students of Muhammadiyah 1 Palangkaraya High School. The research subjects in this study were students who had *pre-test* results *of* economic values that were slightly above the standard value of KKM.

2.3. Research variable

Variable is an attribute or nature or value of people, objects or activities that have certain variations determined by researchers to be studied and then drawn conclusions (Sugiyono, 2007: 3). In this study the variables used are economic learning outcome variables as the dependent variable, NHT type *cooperative* learning models as independent variables (X_1), and IOC *cooperative* learning models as independent variables (X_2). The following relationship between variables in this study:
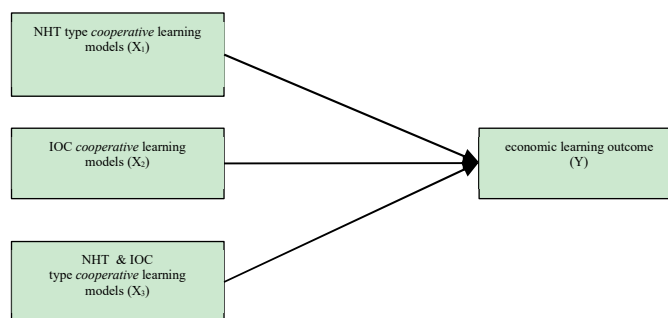
Figure 2. Relationships Between Variables

2.4. Validity test

Validity is how far the measuring instrument can properly reveal the symptoms or some of the symptoms that you want to measure, meaning that the gauge measures what should be measured. Validity test in this study uses item validity test. This is done so that an instrument is truly obtained that can measure and reveal aspects of the respondent's aggressiveness. The instrument needs to be tested on subjects with characteristics similar to those of research subjects. After that, calculate the validity of items by using the *Product Moment Pearson Correlation* formula and the calculation will be assisted with the IBM SPSS Statistics 23. Criteria for items are said to be valid if the *Pearson correlation* coefficient value > 0.3.

2.5 Reliability Test

Reliability means that the score of an instrument is stable and consistent, the score should remain almost the same when researchers administer the instrument repeatedly at different times. (Creswell. 2013). According to Purwanto (2016) defining reliability is looking at the degree to which the test scores are consistent (*concictence*), can be trusted (*dependable*) and can be *reapetable* . In other words, reliability is the result of instruments that can be trusted and are considered to be good. In this study, the reliability test will be tested by the *Alpha Cronbach* coefficient with the help of the *IBM SPSS 23.0* program *for windows.*

2.6 Data analysis technique

The data analysis technique used in this study is the data analysis technique using the Wilcoxon Test. *The Wilcoxon signed rank test* is a non-parametric test used to analyze paired data. Data are said to be in pairs if there are two different treatments applied to the same group. *The Wilcoxon signed rank test is* also used on ordinal data types but has no domestic distribution. In this analysis, the aim is to examine the results of changes in scores between pretest and posttest in each treatment group. The calculation will be assisted with the IBM SPSS Statistics 24 program.

3. Results and Discussion

Data obtained from filling in economic subject questions will be analyzed through descriptive analysis. Descriptive analysis aims to provide an explanation of the variables of economic learning outcomes by applying the *cooperative* model type nht (*numbered head together*) and IOC type (*inside outside circle*) to students of SMA Muhammadiyah 1 Palangkaraya. The following description of the data obtained:

3.1 Pre-Test & Post-Test
Results for Studying Economic Learning Models NHT *Cooperative*

Table 3.1. Pre-Test & Post-Test Studying Economic Learning Models of NHT *Cooperatives*

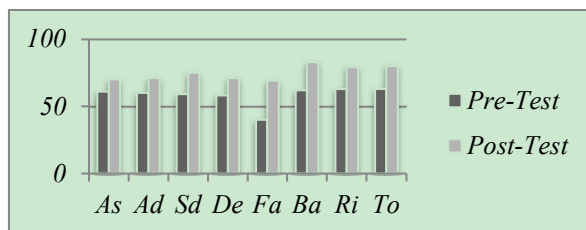| No.	Sample Initials	Pre-Test Results	Post-Test Results
1	US	61	70
2	Ad	60	71
3	Sd	59	75
4	De	58	71
5	Fa	40	69
6	Ba	62	83
7	Ri	63	79
10	To	63	80
	Total	466	598

Source: Primary date (2019)

Diagram 3.1. Pre-Test & Post-Test Results of Economic Learning Results with the NHT Model

3.2 Pre-Test & Post-Test
Learning Results of *Cooperative* Type IOC economic models:

Table 2. Pre-Test & Post-Test of Economic Learning *Cooperative* Type IOC models

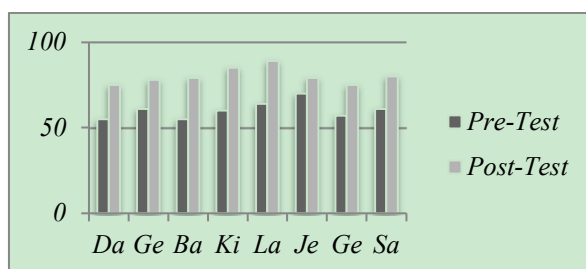| No.	Sample Initials	Pre-Test Results	Post-Test Results
1	Da	55	75
2	Ge	61	78
3	Ba	55	79
4	Ki	60	85
5	La	64	89
6	Je	70	79
7	Ge	57	75
10	Sa	61	80
	Total	483	640

Source: Primary date (2019)

Diagram 2. Pre-Test & Post-Test Results for Economic Learning Outcomes with the IOC Model

3.3 Pre-Test & Post-Test
Learning Results of NHT and IOC *Cooperative* Economic Models:

Table 3.3 Pre-Test & Post-Test Economic Learning Model of the NHT & IOC *Cooperative* Model

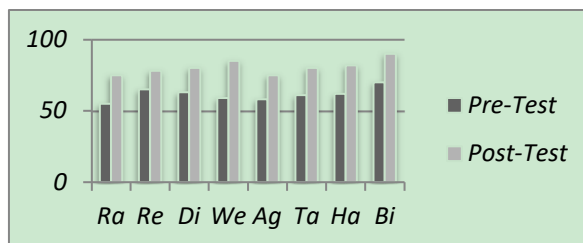| No.	Sample Initials	Pre-Test Results	Post-Test Results
1	Ra	55	75
2	Re	65	78
3	In	63	80
4	We	59	85
5	Ag	58	75
6	Ta	61	80
7	Ha	62	82
10	Bi	70	90
	Total	493	645

Source: Primary date (2019)

Diagram 3.3 Pre-Test & Post-Test Results of Economic Learning Outcomes with the NHT & IOC Model

4.   Conclusion

The conclusions that can be drawn based on the results of this study are:

The type of *cooperative* motor NHT (*numbered head together)* has proven to be effective in improving the economic learning outcomes of Muhammad I High School 1 Palangkaraya students.

Model *cooperatif* type of IOC (*inside outside circle*) proved to effectively improve learning outcomes of economics students of SMA Muhammadiyah 1 Palangkaraya .

The combination of NHT (*numbered head together*) and IOC (*inside outside circle*) *cooperative* models is effective for the economic learning outcomes of students of SMA Muhammadiyah 1 Palangkaraya .

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