

APPLICATION OF NUMBERED HEADS TOGETHER (NHT) TYPE COOPERATIVE LEARNING MODELS WITH UNO CARD MEDIA TO IMPROVE MATHEMATICS LEARNING RESULTS

Ayu Fitri¹, Yulistina Nur DS², Mochamad Fauzi³

Abstract---This research is motivated by students having difficulty in solving questions about the material operations of counting numbers, students ashamed and not confident to come to the front of the class to fill in the questions. This study aims to describe the implementation of learning and learning outcomes in mathematics. This research uses Classroom Action Research (CAR) with two cycles. Based on research data obtained satisfactory results. This can be seen classical completeness increases in cycle I to 63% with an average of 73, then a significant increase in cycle II to 83% with an average of 80. Students who are shy and have no confidence, become eager to learn and move forward. . This shows that the application of cooperative learning models with uno card media can improve mathematics learning outcomes.

Keywords---Cooperative Learning Model Type Numbered Heads Together, Uno Card Media, Learning Outcomes

I. INTRODUCTION

Mathematics is one of the difficult subjects for elementary school students. According to Ruseffendi (Heruman, 2007: 1) that Mathematics is a symbol language; deductive science that does not receive inductive proof; the science of order and organized structure, the noble essence of the elements that are not defined, to the elements that are defined, to the axiom or postulate and finally to the proposition. Meanwhile, according to Subarinah (2006: 1) that mathematics is a science that studies abstract structures and patterns of relationships within it. So learning mathematics is learning concepts, concept structures and looking for relationships between concepts and structures. At the time of the Mathematics learning process it is expected that the teacher can package the learning to be more interesting so that students better understand mathematical concepts related to the circumstances in the surrounding environment.

According to Heruman (2008: 2-3) the concepts in the Mathematics curriculum in Primary Schools can be divided into three large groups, namely:

1. Planting basic concepts (concept planting), namely learning a new mathematical concept, when students have never learned the concept.

Universitas Buana Perjuangan Karawang^{1,2}

Widyatama University³

Corresponding author's: ayufitri@ubpkarawang.ac.id, yulistina.nur@ubpkarawang.ac.id

2. Understanding the concept, namely continued learning from concept planting, which aims to make students better understand a mathematical concept.

3. Coaching skills, namely continued learning from the inculcation of concepts and understanding of concepts. Learning skills development aims to make students more skilled in using various mathematical concepts.

The process of learning mathematics in elementary schools is good where teachers can package learning with fun and give students the opportunity to hold discussions between groups and express their opinions. In connection with the delivery of mathematics learning Pitadjeng (2006: 20) states that "Learning mathematics, it is recommended, teachers use learning strategies that enable students to read, write, or draw, express opinions, ask questions, observe, listen, and take action (manipulate concrete objects) in every class meeting. So it can be concluded mathematics learning in elementary schools is learning that teaches the inculcation of concepts in accordance with cognitive development so that they are stored in memory which will then be understood by the students, if they are embedded and understood then students will be more skilled in various mathematical concepts and teachers use concrete objects. during the learning process.

Based on the results of observations made by researchers regarding the learning process of Mathematics in class IV SDN Palumbonsari II shows that students find it difficult to solve questions about the material counting operations, students ashamed and not confident to come to the front of the class to fill in the questions. To solve problems related to students' difficulties in counting operations, using learning media.

According to Hamzah and Muhlisrarini (2016: 95) revealed the media comes from *medius* (middle), middle, or introduction, which means a tool for communication as a carrier of information from the sender to the recipient of the information multimedial Meaning seen limited or broad. Learning media are all things that can be used to convey messages or information in the learning process so that it can stimulate the attention and interest of students in learning (Arsyad, 2017: 10). The learning media used in this study is the uno card media. Uno card media is a learning media that uses uno game cards. Uno card games are well-known throughout most of the world, carried out by two or more. The use of uno card media in this study is to add up all of the numeric cards 0,1,2,3,4,5,6,7,8,9 and the results are found on these cards as well. It is hoped that this UNO card media can motivate students to be excited in learning mathematics. In line with the opinion of Hamalik (Arsyad, 2017: 19) argues that in learning activities that use the media can arouse new desires and interests, also in motivation and stimulation of learning, even bring psychological influence on students.

Uno cards are implemented in two or more ways, so the learning process is collaborated by applying a cooperative learning model. The word cooperative learning comes from English namely Cooperative means to work together while learning means learning. So cooperative learning can mean learning done together. According to Slavin (Isjoni, 2011: 15) defines that cooperative learning is a learning model where students learn and work in small groups collaboratively with members of 4-6 people with heterogeneous group structures. This cooperative learning model is expected to not only improve children's learning outcomes but the most important thing is to increase the sense of kinship, mutual cooperation, compassion, cooperation and foster mutual respect and respect for each other (Fitri, 2018: 30).

There are several types of cooperative learning models, namely Jigsaw, Student Team Achievement Division (STAD), Numbered Heads Together (NHT), Group Investigation, Make a match (looking for a partner), Talking Stick, Snowball Throwing (Fitri, 2017: 19). To overcome the problem of students ashamed and not confident to come to the front of the class to fill in the questions, then use the cooperative learning model type NHT (Numbered Heads Together). According to Fitri (2017: 10) that Cooperative learning type Numbered Heads Together is students made in a group consisting of 4-6 people, then each student in the group is given a number on their head, then the teacher randomly calls out the student

number. Number Head Together was first developed by Spenser Kagen in 1993 to involve more students in studying the material covered in a lesson and checking their understanding of the contents of the lesson

According to Ibrahim (2008: 28), the goal of the NHT (Numbered Heads Together) cooperative learning model is that student performance is improved, recognition of diversity in that students can accept their friends who have backgrounds and gain the development of students' social skills. The benefits of cooperative learning type NHT (Numbered Heads Together) stated by Fitri (2017: 10) are students work together to solve tasks / problems given by the teacher, students also understand every part of a problem, dare to express their opinions and take responsibility with their tasks

The steps of Cooperative Learning type NHT (Numbered Heads Together) proposed by Lie (2007: 60) in detail are as follows:

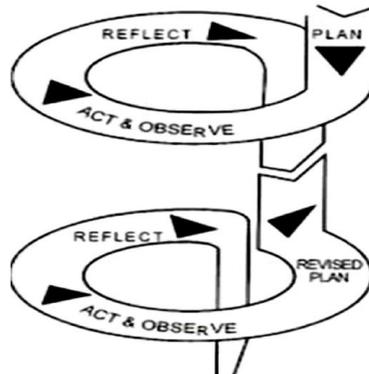
1. Numbering phase. The teacher divides students into groups of 4-6 people and each group member is numbered between 1 and 6.
2. The phase of asking questions. The teacher presents an question with students. Questions may vary. Questions can be specific in the form of question sentences
3. The phase of thinking together. Students unite their opinions on the answers to these questions and convince every member in his team to know the answers.
4. The answer phase. The teacher calls one particular number, then the student whose number matches his hand and tries to answer the question, for the whole class.

The advantage of NHT (Numbered Heads Together) Cooperative Learning is that all students have a serious discussion, because if they don't discuss it seriously it is feared that their fist numbers will be called to answer the questions raised by the teacher, so that all students become ready to learn everything. Not only that students who are not smart will be helped by smart students. Furthermore, the advantage is that students are responsible and dare to appear in front of the class according to the number called by the teacher.

Based on the description above, the writer needs to conduct Classroom Action Research in order to improve learning outcomes towards Mathematics learning in SD Negeri Palumbonsari II with the title: "The Application of the Cooperative Learning Approach Type Numbered Heads Together with the Uno Card Media to Increase Mathematics Learning Outcomes" .

II. RESEARCH METHODS

This type of research in this study is Classroom Action Research. Classroom Action Research is a controlled investigation process to find and solve learning problems in class, the problem solving process is carried out in cycles, with the aim to improve the quality of learning and learning outcomes in certain classes (Akbar, 2010: 28). Desaign of this study with Kemmis and Mc. Taggart consists of several cycles, in a cycle there are several components, namely planning, action, observation and reflection.



Picture 1. Research Design according to Kemmis and Mc. Taggart

In this class action research, the subject was class IV semester II students at SD Negeri Palumbonsari II with a total of 35 students. The data collection process is in accordance with the research objectives, the data collection process is obtained through: evaluation questions, observation sheets and field notes. Data processing in this study uses qualitative and quantitative data processing. Qualitative data is data in the form of event descriptions which are sourced from observational data and field notes. While quantitative data is data in the form of figures taken from evaluation results by post-test after learning takes place. To process quantitative data using a scoring method taken from individual student scores, the average value of the research subject, and classical absorption (DSK).

The calculation formula is as follows:

1. Scoring

$$\text{Final Score} = \frac{\text{Earned Score}}{\text{Ideal Score}} \times 100$$

2. Average

$$\text{Average} = \frac{\text{Score of all students}}{\text{number of students}} \times 100$$

3. DSK

$$\text{DSK} = \frac{\text{JNumber of students who get a grade of } \geq 70}{\text{Total number of students}} \times 100\%$$

III. RESULT AND DISCUSSION

1. Cycle I Research Results

a. Planning

Preparations made in the first cycle of research include: preparing lesson plans that apply the cooperative learning model type Numbered Heads Together (NHT), making observation sheets, preparing uno cards, colorful numbered headbands by using cardboard and ribbons, determining heterogeneous groups, prepare Student Worksheets (LKS) and evaluation questions.

b. Action

At the beginning of the lesson the teacher greets students. the class president leads the prayer. Then the teacher does attendance. Furthermore, the teacher invites students to pat their enthusiasm to motivate student learning. Apperception activities are done by asking "How many hours in a day? How long have you been in school, studying, playing? So how much time do you have to rest in one day? Furthermore, the teacher gives the learning objectives by means of "Today Mother carries uno cards and numbered headbands. We will learn with uno card media, I hope you can add and subtract numbers bravely".

In the core activities. Students are divided into groups of 4-5 people. Group representatives took the Student Worksheet (LKS), Tie the Head Number and uno card media. Students work on student worksheets using the media card related to addition and subtraction problems. Then the teacher calls the number of students' heads in red, number 4. Then student number 4 in the red group comes forward to explain the results of group discussion number one. The teacher then corrects the results of students' answers. Then the teacher calls students forward until all the questions are discussed. The teacher reviews the material related to addition and subtraction using uno card media.

At the end of the activity students are given the opportunity to ask questions related to material that does not understand. Then given an evaluation problem. Next the teacher gives a follow-up in the form of homework about addition and subtraction.

c. Observation

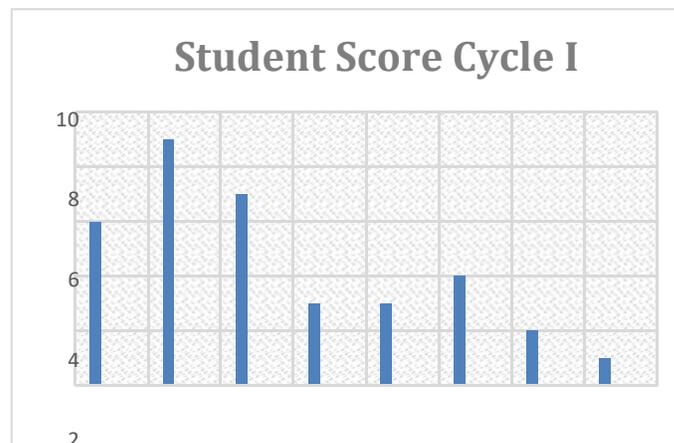
Student scores on the material addition and subtraction can be seen in table 1.

Table 1. Cycle I Research Results

Score	f	x
80	9	720
75	7	525
70	3	210
65	3	195
60	4	240

55	2	110
50	1	50
Total	35	2560
Average		73
Complete		22
Persentase Complete		63%
Not Complete		13
Persentase Not Complete		37%
DSK		63%

Based on table 1 that students who get a value of 50 as many as 1 person, students who get a value of 55 are 2 people, students who get a value of 60 are 4 people, students who get a value of 65 are 3 people, students who get a value of 70 are 7 people, students who get 75 as many as 7 people, students who get 80 as many as 9 people, and students who get 85 as many as 6 people. The average student who got the value in cycle I was 73. To see more clearly about the acquisition of mathematics learning scores using the media uno card with the cooperative learning model type NHT cycle I can be seen in Picture 2.



Picture 2. Student Score Cycle 1

As for students who get grades below KKM or not yet completed as many as 13 people or by 37%, while students who get grades above KKM or as many as 22 people with a percentage of 63%. It can be concluded that learning with card media in cycle 1 increased compared to before using uno card media. However, classical absorption (DSK) is still below 70%, this shows that it must continue to cycle II.

Based on observations and field notes in the first cycle shows student-centered learning. Students with their groups and guided by the teacher working on LKS questions, where the LKS students work with uno card media. Initially the students fought over how to do it, but were given guidance by the teacher, the use of UNO card media according to the directions in the worksheet. When the teacher calls on students to work on problems in front of the class, they are initially shy, unable to go to the front of the class to work on the problems, but in this study students dare to come forward to work on the problems. This is because students are responsible for the numbers they use. So he does not rely on his friends in group discussions. It can be concluded that the NHT type of cooperative learning model can overcome the problem of students who do not dare to come forward, so they are brave and responsible for the mandate of the head number he uses.

d. Reflection

The results of the study in the first cycle to get an average value of 73 with 22 students completeness with a percentage of 63%. DSK is still below 70%, this shows that it must continue to cycle II. Improvements in the cycle pursued learning can increase students so that DSK reaches above 70%. Material operations count in the first cycle about addition and subtraction, so in the next cycle the material is about multiplication and division.

IV. Cycle II Research Results

e. Planning

Learning planning in cycle II improves in cycle I, namely preparing worksheets, evaluation questions, and calculating operating material on multiplication and division. Prepare uno cards and numbered headbands. To increase student motivation, the teacher prepares ice breaking.

f. Action

At the beginning of the lesson the teacher greets students. the class president leads the prayer. Then the teacher does attendance. Next the teacher does ice breaking to motivate student learning. Apperception activities are done by asking "How much is your allowance in one day? What is your money used and how much? How much allowance do you have left in one day? If you keep your remaining allowance for one month, what is the amount? Then the teacher gives the learning objectives by means of "Today's learning still uses uno cards and numbered headbands. How are you happy with this learning? Uno cards now we will learn about multiplication and division. Instructions for use are in the worksheet, hopefully your grades increase compared to before okey".

In the core activities. Students are divided into groups of 4-5 people. Group representatives took the Student Worksheet (LKS), Tie the Head Number and uno card media. Students work on student worksheets using the media card related to addition and subtraction problems. Then the teacher calls the number of the student's head, yellow number

2. Then the student number 3 is the yellow group going forward to explain the results of group discussion number one. The teacher then corrects the results of students' answers. Then the teacher calls students forward until all the questions are discussed. The teacher reviews the material related to addition and subtraction using uno card media.

At the end of the activity students are given the opportunity to ask questions related to material that does not understand. Then given an evaluation problem. Then the teacher gives a follow-up in the form of homework about writing down the remaining allowance then collected in one month.

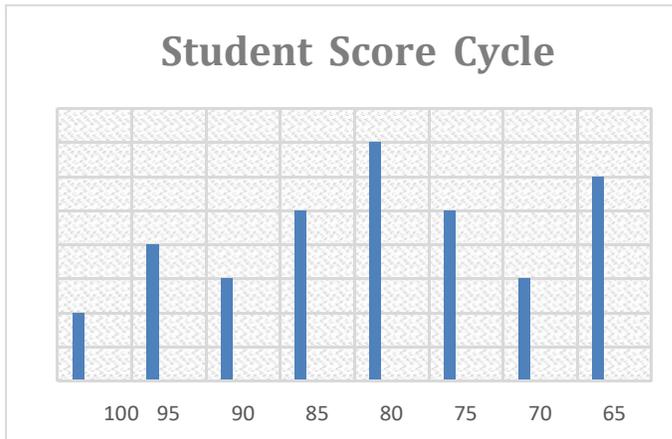
c. Observation

Student scores on the material addition and subtraction can be seen in table 1.

Table 2. Cycle I Research Results

Score	f	x
100	2	200
95	4	380
90	3	270
85	5	425
80	7	560
75	5	375
70	3	210
65	6	390
Total	35	2810
Average		73
Complete		22
Persentase Complete		63%
Not Complete		13
Persentase Not Complete		37%
DSK		63%

Based on table 2 that students who score 65 are 6 people, students who score 70 are 3 people, students who get a score of 75 are 5 people, students who get a score of 80 are 7 people, students who get a score of 85 are 5 people, students 3 students get 90 points, 4 students get 95 scores, and 2 students get 100 marks. The average student who got the value in cycle II was 80. To see more clearly about the acquisition of mathematics learning values using the media uno card with the cooperative learning model type NHT cycle II can be seen in Picture 3.



Picture 3. Student Score Cycle 1

As for students who get grades below KKM or not yet completed as many as 6 people or by 17%, while students who get grades above KKM or as many as 29 people with a percentage of 83%. It can be concluded that learning with card media in the second cycle increased compared to before using uno card media. However, DSK is still above 70%, this shows that this study stopped in the second cycle.

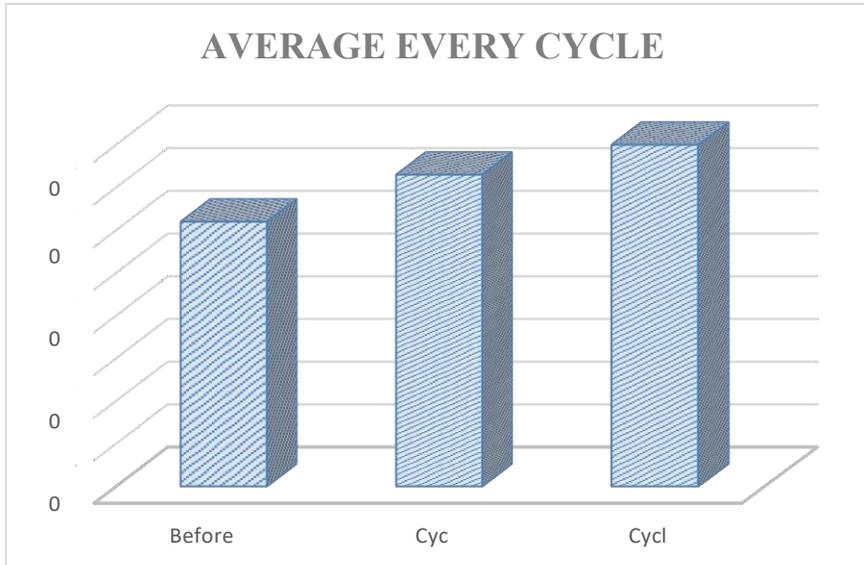
Based on observations and field notes in cycle II shows student-centered learning. When the division of student groups is no longer noisy. The use of uno card media is busy with each group. Group discussions do not rely on each other, but work together on the use of uno card media. When calling out students' names to work forward, students who are excited want to be called the head number. This shows that NHT type cooperative learning model with uno card media can improve learning outcomes, motivation and responsible attitude.

d. Reflection

The average value obtained in the second cycle of 80 with 29 students completeness reached a percentage of 83%. So this research stopped in the second cycle.

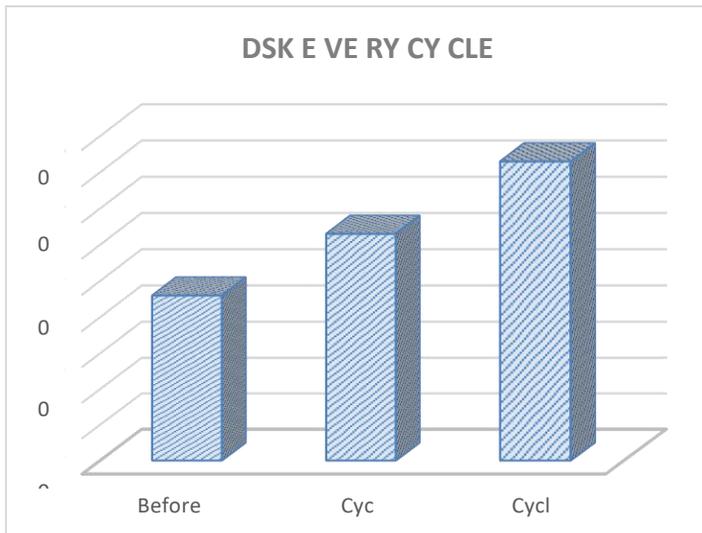
V. Discussion

The research results obtained from the evaluation of learning with cooperative learning NHT type with uno card media can improve student learning outcomes each cycle I and cycle II increase, starting the average value at pre cycle 62, cycle I gained an average of 73, and in cycle II obtained an average of 80. Can be seen in Picture 4.



Picture 4. Average Every Cycle

While the acquisition of completeness of students who get grades above the KKM or DSK can be seen in Picture 5.



Picture 5. DSK Every Cycle

Based on Picture 5 about the acquisition of DSK per cycle increased from 46% as many as 16 students who completed, increased in cycle I by 63% as many as 22 students, in cycle II increased to 83% as many as 29 students who had already completed grades above

the KKM. This shows that the NHT cooperative learning model with uno card media can improve learning outcomes.

VI. CONCLUSION

Based on the results of research and data analysis, it can be concluded the results of the study that the implementation of NHT cooperative learning with uno card media which initially students have difficulty in arithmetic operations and do not dare to move forward, after being given an action makes students excited to move forward, there is cooperation in the group so don't rely on each other. While student learning outcomes at the beginning of the cycle get the average value obtained from the pre cycle, cycle I and cycle II increased, starting the average value at pre cycle 62 with a DSK of 46%, cycle I gained an average of 73 with a DSK 63%, and in the second cycle obtained an average of 80 with 83% DSK. Based on the conclusions above it can be seen that the use of audio visual media in learning science about flooding can improve learning outcomes.

VII. ACKNOWLEDGMENT

Thank you, the authors say to Universitas Buana Perjuangan Karawang that has provided an opportunity for writers to be able to do research.

REFERENCES

- [1] Arsyad, A. (2017). *Media Pembelajaran*. Jakarta: PT RajaGrafindo Daryanto. (2010). *Media Pembelajaran*. Yogyakarta: Gava Media
- [2] Fitri, Ayu. (2017). Pengembangan Model Cooperative Learning di Sekolah Dasar. *Jurnal Sekolah Dasar (JSD)* Volume 2, Nomor 1. September 2017. ISSN: 2580-5509
- [3] Fitri, Ayu. (2018). *Model Pembelajaran Matematika di SD*. Karawang: FBIS Publishing Hamzah dan Muhlisrarini. (2013). *Perencanaan dan Strategi Pembelajaran Matematika*. Jakarta: PT RajaGrafindo
- [4] Heruman. (2007). *Model Pembelajaran Matematika*. Bandung : PT Remaja Rosdakarya Ibrahim, M. (2008). *Pembelajaran Kooperatif*. Surabaya: University Press
- [6] Isjoni. (2011). *Pembelajaran Cooperative Learning*. Yogyakarta: Pristaka Pelajar Lie, A. (2007). *Cooperative Learning*. Jakarta: Pt. Grafindo
- [7] Pitadjeng. (2006). *Pembelajaran Matematika Yang Menyenangkan*. Jakarta: Depdiknas. Subarinah, S. (2006). *Inovasi Pembelajaran Matematika SD*. Jakarta: Depdikna