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APPLICATION OF NUMBERED HEADS TOGETHER (NHT) TYPE COOPERATIVE LEARNING AS AN INCREASE IN UNDERSTANDING OF THE CONCEPT OF WATER CYCLE IN ELEMENTARY SCHOOL SCIENCE SUBJECTS

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Abstract (TNR11)

Natural Science is one of the main subjects at the elementary school level, which discusses knowledge about the natural surroundings and is closely related to everyday life. This study aims to improve understanding of the concept of the water cycle in science subjects elementary school students using the Numbered Heads Together (NHT) model. This study used a qualitative approach and the data analysis process emphasized the conclusion of comparative literature reviews from several scientific journals. The results show that using the Numbered Heads Together (NHT) model can improve understanding of the concept of the water cycle, can have a positive impact on learning, make students interested and enthusiastic in learning, all students become more active and ready to take part in learning, be responsible for work. groups, students become confident, develop student skills, and the learning process becomes more fun and less boring. Thus it can be concluded that the Numbered Heads Together (NHT) model can be used as a solution to improve understanding of the concept of the water cycle in elementary school science subjects.

Keywords: ***Numbered Heads Together (NHT), Concept Understanding, Water Cycle).***

1. INTRODUCTION

The Natural Sciences (Science) is one of the main subjects at the elementary school level, which discusses knowledge about the environment and is closely related to everyday life. Through science learning, students are expected to be able to understand various objects and natural symptoms that they encounter in their daily lives. In line with Aprilia (2018: 12) which suggests that science learning is one of the most important subjects in elementary schools, as by mastering various concepts and principles of science, students can understand natural phenomena that occur in their daily environment.

The objectives of science learning in elementary schools according to the National Education Standards Agency (BSNP) in Setyaningsih, et al (2020: 48) are intended to: a) Gain confidence in the greatness of God Almighty based on the existence, beauty and order of His creation; b) Develop knowledge and understanding of science concepts that are useful and can be applied in everyday life; c) Develop curiosity, positive attitudes and

awareness of the interplay between science, environment, technology and society; d) Develop process skills to investigate the natural environment, solve problems, and make decisions; e) Increase awareness to participate in maintaining, safeguarding and preserving the natural environment; f) Raising awareness to appreciate one of God's creations; g) Acquire knowledge, concepts and science skills as a basis for continuing education to junior high school.

Understanding science concepts is one of the most important aspects of science learning and is the basis for mastery of higher abilities. Learning will be more meaningful and in accordance with the goals to be achieved if students already have a good understanding of concepts in a subject matter. Determining whether or not students are achieved in understanding the concept, an indicator is needed. Anderson & Krathwohl in Hermawati, et al (2019: 151) suggest that the indicators of concept understanding are as follows: 1) Interpret, 2) Exemplify, 3) Classify, 4) Summarize, 5) Summarize, 6) Compare, and 7) Explain.

But in fact, the implementation of science learning in elementary schools still experiences various problems, based on data studied from several journals on science learning in elementary schools, it is known that students' understanding of concepts tends to be still low. As said by Yulistina and Eneng in their research (2019: 2) that the understanding of students' concepts in science subjects is still below KKM. Similarly, in the research of Rahma and Fatimah (2019: 41) obtained information that students' understanding of concepts in science subjects is relatively low. Then Nugraheni, et al (2016: 18) in their research said that the understanding of the concept of student water cycle is still low because there are still many students whose scores have not reached KKM. According to Yulistina and Eneng (2019: 2) in the learning process teachers still use the lecture method, the lack of enthusiasm of students in following the learning process (Science), learning is more teacher-centered so that student learning activity is still low, teachers have not applied innovative learning models in learning. Meanwhile, according to Rahma and Fatimah (2019) most students consider science subjects to be boring subjects. In general, the problem caused in the science learning process is that students are less active. Students only listen and record what the teacher says. In line with Suryawati, et al (2018) who said that there are still many students who are not interested in learning science.

These various problems require an appropriate solution, namely by providing varied, innovative, and fun learning offerings and in accordance with the characteristics of elementary school students, so as to increase students' understanding of concepts in science subjects, one of which is by applying the Numbered Heads Together (NHT) learning

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model.Suprijono in Hidayati (2016) explained that the Numbered Heads Together (NHT) learning model is one of the learning models that emphasizes a special structure designed to influence student interaction patterns and has the aim of increasing academic mastery by involving students in studying the material covered in a lesson and checking their understanding of the content of the lesson. Through the application of the Numbered Heads Together (NHT) model, it is expected to help students understand water cycle material, so that students' understanding of concepts in science subjects can improve. This is reinforced by previous research conducted by Puput Martha Nugraheni in 2016 entitled "Application of the Numbered Heads Together Type Cooperative Learning Model to Improve Understanding of the Water Cycle Concept" results were obtained that the use of the Numbered Heads Together type cooperative learning model can improve the understanding of the concept of water cycle and student activities in learning Natural Sciences, especially water cycle material in grade V students of SDN 02 Jetis Karanganyar for the 2015/2016 school year.

2. IMPLEMENTATION METHOD

This research uses a qualitative approach and the data analysis process emphasizes more on concluding a comparison of literature reviews from several scientific journals. Data collection in this study was carried out by browsing journals on several electronic media such as the internet, online journals, and online libraries. According to Kuncoro (2013) stated that the purpose of the literature review is to see what and the extent of activities that have been carried out that are related to the problem under study. In line with that, Cresswell (2014) argues that literature review is a literature analysis on a research topic with the aim of informing about the results of previous research that has been carried out related to the current research being carried out, linking a study with existing literature, and filling spaces in previous research.

3. RESULTS AND DISCUSSION

Learning Science or Natural Sciences (IPA) aims to help students master, understand a number of science facts and concepts about natural phenomena and can apply them in everyday life that can develop and instill scientific attitudes in students. In science learning, concept understanding is one very important aspect, learning will be more meaningful and in accordance with the goals to be achieved if students already have a good understanding of concepts in a subject matter, without a good understanding, students will be less able to understand the subject matter delivered by the teacher. One of the concepts in science subjects is the concept of water cycling. The concept of the water cycle is closely related to everyday life, so it is important for students to understand the concepts

about the water cycle. This concept includes water cycle processes, human activities that affect water cycling, water benefits, and ways to save water.

But in fact, based on journal studies, it is known that students' understanding of concepts tends to be low because there are still many students whose scores have not reached the KKM of science subjects. As said by Yulistina and Eneng in their research (2019) that the understanding of students' concepts in science subjects is still below KKM. Similarly, in the research of Rahma and Fatimah (2019) obtained information that students' understanding of concepts in science subjects is relatively low. Then Nugraheni, et al (2016) in their research said that the understanding of the concept of student water cycle is still low because there are still many students whose scores have not reached KKM. The low understanding of students' concepts in science subjects is caused by: first, many students are less interested in science lessons and consider science subjects to be difficult, boring, and boring, so students are less enthusiastic and less active in following the science learning process. Second, teachers still use conventional learning models or lectures, have not applied innovative learning models in classroom learning, so learning is more centered on teachers and students only listen and record what is conveyed by the teacher. This causes many students who have not reached the Minimum Completeness Criteria (KKM) scores in science subjects.

This problem can be overcome by using innovative learning models so that learning can take place well and can increase students' understanding of concepts, one of which is by applying the Numbered Heads Together (NHT) learning model. The Numbered Heads Together (NHT) learning model is one of the learning models that is considered suitable to be used as a solution in increasing understanding of the concept of water cycle in elementary school Natural Sciences (Science) subjects. The Numbered Heads Together (NHT) learning model is a group learning model with a numbering system that involves all students to be active and share ideas or ideas with each other, with the characteristic that the teacher only appoints a student with a certain number without telling in advance who will represent the group.

With the application of the Numbered Heads Together (NHT) learning model, through group discussions by sharing ideas and utilizing existing learning resources and the demands of the Numbered Heads Together (NHT) learning model to always be ready to be called numbers, students are expected to be able to interpret, model, classify, summarize, conclude, compare, and explain material about the water cycle properly and correctly. With a learning process that involves all students to be active and become peer tutors, making the learning process run pleasantly, so that students are easier to understand the water cycle material in science subjects.

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This is reinforced by the results of previous research conducted by Nugraheni (2016) which explained that the application of the Numbered Heads Together type cooperative learning model can attract students' attention and enthusiasm in learning so as to help students to understand the material taught. Student participation also grows, all students are active and responsible in group work. Then in research conducted by Yulistina and Eneng (2019) it was said that the Numbered Heads Together (NHT) type cooperative learning model can make students more active, can work together with their group mates, students become confident, can develop student skills, thus students' understanding will increase.

In the application of the Numbered Heads Together (NHT) model, there are four stages, namely the planning stage, the implementation stage, the assessment stage and the reflection stage.

1. Planning Stages

The planning stage starts from looking for science subject syllabus, then the syllabus is developed into RPP, preparing tools or media and learning resources, Student Worksheets (LKS) and others that concern the learning process.

2. Stages of Implementation

This stage includes the implementation of learning activities using the Numbered Heads Together (NHT) learning model to improve understanding of the concept of water recycling in science subjects. The steps are as follows:

a. The teacher presents learning material in accordance with the competencies to be achieved. In this step, the teacher presents a glimpse of science learning material about the water cycle which is very closely related to everyday life. This material covers water cycle processes, human activities that affect water cycling, water benefits, and ways to save water.
b. Students are divided into small groups with a heterogeneous group structure, then each student in the group is shared a different number as his identity. In this step the teacher divides the students into small groups at random, then numbers each student in the group and names the groups differently. Teachers can use numbered head hats as student identities, so that students are more enthusiastic in learning.
c. The teacher asks questions or assignments to be discussed together by students in their group.In this step, the teacher distributes Student Worksheets (LKS) to each group to be discussed together by students in their groups.

d. Students unite their opinions on the answers to questions or assignments given by the teacher together in groups, and make sure each member of the group understands the answers. This step involves all students actively in sharing their ideas, ideas, and opinions in the discussion process with their groups to answer the LKS given by the teacher. This means that students build their own knowledge from various learning sources, students act as peer tutors and must be responsible for their groups. In this step, students' concept understanding indicators can be honed, and students' understanding of water cycle material will be deeper and make learning more meaningful.
e. The teacher dials one number, then the student who dials the number raises their hand and presents the answer to the question asked by the teacher. In this step, the teacher tests students' understanding of water cycle learning materials. The teacher can create this learning step by providing a container containing student numbers and group names, then calling a random number from the container, then the teacher asks a question and the selected student number presents the answer to the question. Then this step is repeated until the question is fully answered by the student representative who is called.
f. When finished, the teacher convinces the students' answers by reviewing and affirming the correct answers and drawing conclusions.

3. Observation Stages

At this stage, observe the course of the learning process from beginning to end when the action is carried out and the results of the action through observation sheets or observation sheets of learning activities.

4. Stages of Reflection

At this stage, it is necessary to determine the extent of the effectiveness of learning using the Numbered Heads Together (NHT) learning model, see the advantages and disadvantages that appear after applying the Numbered Heads Together (NHT) learning model, and be carried out until the limit of understanding the science concept increases according to the indicator of understanding the science concept.

4. CONCLUSION

This study analyzes the problems faced by elementary school students in science learning. The results showed that there was a problem in the low understanding of the concept of water recycling in elementary school science subjects. The low understanding of students' concepts is caused by many students who are less interested

in science lessons and consider that science subjects are difficult and boring subjects. Then teachers still use conventional learning models or lectures, have not applied innovative learning models in classroom learning, so learning is more teacher-centered. The Numbered Heads Together (NHT) learning model is the right learning model used in science learning in elementary schools so that it can be used as a solution to improve understanding of the concept of water cycle, besides that it can have a positive impact on learning, make students interested and enthusiastic in learning, all students become more active and ready to follow learning, responsible for group work, Students become confident, develop students' skills, and the learning process becomes more fun and not boring.

REFERENCES

Ananda, Rizki. 2017. Penerapan Model Kooperatif Tipe *Numbered Head Together* (NHT) untuk Meningkatkan Hasil Belajar IPS Siswa Kelas IV SDN 003 Bangkinang Kota. Medan: *Jurnal Handayani PGSD FIP UNIMED*, Vol. 7, No (1), halaman 46-57.

Aprilia. 2018. Pemahaman Konsep Perubahan Sifat Benda Pada Mata Pelajaran IPA Melalui Metode Eksperimen. Palopo: *Pedagogik Journal of Islamic Elementary School*, Vol. 1, No. 1, halaman 11-22.

Creswell, J. (2014). Penelitian Kualitatif dan Desain Riset. Yogyakarta: Pustaka Belajar.

Hermawati, Dyah L, dan Aditia Eska W. 2019. Penerapan Model *Numbered Heads Together* (NHT) untuk Meningkatkan Pemahaman Konsep IPS di Kelas Tinggi. Sukabumi: *Jurnal Penelitian dan Pengembangan Sains dan Teknologi*. Vol. 13 No. 2, halaman 149-156.

Hidayah, N., 2019. Meningkatkan Hasil Belajar IPS Materi Gejala Alam dengan Metode *Index Card Match* pada Siswa Kelas VI SDN 2 Tanak Awu Tahun Pelajaran 2018/2019. Mataram. *JISIP (Jurnal Ilmu Sosial dan Pendidikan).* Vol. 3, No. 2, halaman 33-40.

Hidayati, Dwi Nur. 2016. Studi Komparasi Penerapan Strategi *Numbered Heads Together* (NHT) dengan *Index Card Match* terhadap Hasil Belajar IPA Siswa Kelas IV SD Muhammadiyah 3 Nusukan Surakarta Tahun Ajaran 2015/2016. Surakarta: *Naskah Publikasi Universitas Muhammadiyah Surakarta*. Halaman 1-11.

Karlina, dan Acep Roni Hamdani. 2016. Meningkatkan Pemahaman Konsep Siswa dengan Menerapkan Model *Numbered Heads Together* (NHT) Pada Pembelajaran IPS. Subang. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang*. Vol. 2 No. 1, halaman 122-139.

Kuncoro, M. (2013). Metode Riset untuk Bisnis dan Ekonomi. Edisi 3. Jakarta: Erlangga.

Mahardika, I. Putu Mas, Nyoman Dantes, dan I Wayan Widiana. 2018. Pengaruh Model Pembelajaran *Numbered Heads Together* terhadap Hasil Belajar IPS pada Siswa Kelas V SD Gugus V Kintamani Tahun Pelajaran 2017/2018. Bali. *MIMBAR PGSD Undiksha*. Vol. 6, No. 1.

Ningrum, Cipta Diana. 2011. Keefektifan Model Pembelajaran Kooperatif Tipe NHT (*Numbered Head Together*) terhadap Hasil Belajar IPA Materi Daur Air pada Siswa Kelas V di SD Negeri 03 Sungapan. *Jurusan Pendidikan Guru Sekolah Dasar*, Fakultas Ilmu Pendidikan, Universitas Negeri Semarang.

Nugraheni, Puput M., Yulianti., dan Sutijan. 2016. Penerapan Model Pembelajaran Kooperatif Tipe *Numbered Heads Together* untuk Meningkatkan Pemahaman Konsep Daur Air. Solo: *Jurnal Didaktika Dwija Indria*, Vol. 4, No. 11, halaman 18-22.

Putranti, Ayunda Putri., dan Widiastuti. 2016. Penerapan Metode *Numbered Heads Together* (NHT) untuk Meningkatkan Hasil Belajar Kognitif IPA di SD Kristen Gunungsitoli Utara. Tangerang. *Polyglot: Jurnal Ilmiah*. Vol. 12, No. 2, halaman 128-140.

Rahma, dan Fatimah. 2019. Peningkatkan Pemahaman Konsep IPA Melalui Model *Numbered Head Together* (NHT) Berbasis Multimedia. Aceh. *Relativitas: Jurnal Riset Inovasi Pembelajaran Fisika*, Vol 2 No 1, halaman 40-44.

Rahmadani, Andrika Restya. 2015. Studi Komparasi Strategi NHT (*Numbered Head Together*) dan *Index Card Match* terhadap Hasil Belajar IPA Siswa Kelas III SDIT An-Nur Gemolong Tahun Ajaran 2014/2015. Surakarta: *Naskah Publikasi Universitas Muhammadiyah Surakarta*. Halaman 1-13.

Reny, Fenia. 2018. Pengaruh Model Kooperatif Tipe *Numbered Heads Together* (NHT) Terhadap Pemahaman Konsep Kelas IV SD Inderalaya'. Palembang. *Jurnal PGSD Musi*. Vol. 1. No. 1, halaman 10 – 23.

Royani, Aniq. 2017. Penerapan Teknik Pembelajaran Kooperatif NHT dalam Meningkatkan Pemahaman tentang Bumi Bagian dari Alam Semesta. Blitar. *Briliant: Jurnal Riset dan Konseptual*. Vol. 2, No. 3, halaman 294-311.

Sari, Ika M., Peduk R., dan Hasan M. 2015. Peningkatan Pemahaman Konsep Kenampakan Permukaan Bumi Melalui Model Pembelajaran Kooperatif Tipe *Numbered Heads Together* (NHT). Solo: *Jurnal Didaktika Dwija Indria*, Vol 3, No 6, halaman 5-9.

Setyaningsih, E., Dwiyanti, A. N., dan Budiarti, W. N. (2020). Peningkatan Hasil Belajar IPA melalui Model *Discovery Learning* Siswa Kelas V SD Negeri Slarang 01 Tahun 2019. Cilacap: *JURNAL PANCAR (Pendidik Anak Cerdas dan Pintar)*, Vol. 4, No. 1, halaman 47-52.

E-ISSN: XXXX-XXXX

Suryawati. 2018. Peningkatan Minat dan Hasil Belajar Energi Panas dan Bunyi Melalui Model *Numbered Head Together* Pada Siswa Kelas IV SD 3 Bacin Kudus. Semarang: *Malih Peddas (Majalah Ilmiah Pendidikan Dasar)*. Vol. 8, No. 1, halaman 38-47.