

Improving Science Learning Outcomes with Hands-On-Minds-On Learning Model On The Third Graders Of Elementary School

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Abstract: Hands-On-Minds-On as a learning approach involves activities and direct experiences with natural environment or educational experiences that actively involve students in manipulating objects to gain knowledge or understanding to reform and improve science learning outcomes by using Hands-On-Minds-On learning model for third grade students at SDN Tengah 07 Pagi. The total number is 42 students, 20 students were taken as sample population. Based on the result of the first pre-cycle research, it was found that 13 students did not reach the Minimum Completeness Criteria (KKM), and students who obtained above the Minimum Completeness Criteria (KKM) were 7 students. From the result of the pre-cycle research, it was found that the value of Class III A is still relatively low with an average score of 60.75. Whereas, the Minimum Completeness Criteria (KKM) for science subject is 65. In the second cycle, teacher includes more learning media, makes classroom situation more enjoyable and provides many opportunities for students to be active in learning process. Finally, the learning outcomes also increase from the average students' learning outcomes of 78.50 to 85.25. Therefore, it can be concluded that the research cycle I and cycle II can improve the students' learning outcome on science learning in class III A by using the Hands-On-Minds-On learning model. Thus, the research ends in the second cycle.

Keywords: Science Subject on Third Grade of Elementary School, Hands-On-Minds-On Learning Model, Classroom Action Research Cycle (CAR)

INTRODUCTION

Education constitutes an indispensable element for all children in Indonesia without exception to achieve a bright and promising future. Children who live in the Kramat Jati Central Market area of East Jakarta also have equal rights to pursue the education.

Most of them are children from families that are economically disadvantaged. In the end, they were forced to help their parents to meet the needs of everyday life. As a result, their ability to think or learn is very limited. Their activities at home and school are too much and make them tired. Thus, their grades and learning outcomes are low.

The learning process at SDN Tengah 07 Pagi is still experiencing many obstacles and constraints, both constraints on internal and external

factors. Constraints on internal factors are the lack of student interest in the learning process, the condition of students who are exhausted from helping their parents work, the lack of understanding of students in receiving thematic-based learning. Then, constraints on external factors are the lack of adequate learning media as well as poor supporting facilities and infrastructure. In the end, with such conditions, learning objectives are not in line with expectations. In addition, teachers who are less creative in the learning process are also a factor causing the low student learning outcomes. The low student learning outcomes are evidenced by the value of natural science subjects achieved in the midterm in the second semester of the 2014/2015 academic year which was only 75.63.

Teacher should pay attention to the content of Science lesson when teaching. It is important to avoid any error during the process of students'

understanding; by taking into account student psychological condition and paying attention to the process of learning which starts from introductory part, core activities, closing part, and evaluation at the end of the learning.

Teacher should be able to provide real-life context examples during the explanation of certain theory in order to make students comprehend the theory better. It is an attempt to make the theory explanation becomes more meaningful since it is correlated with real-life context.

However, during the learning process, one of the constraints which is commonly occurred is the availability of sufficient instructional media to assist teacher in explaining certain concept and theory. Consequently, it hampers the process of understanding. Students will have improper understanding which is not in accordance with the concept.

Considering several constraints and problems above, several approaches could be taken as an attempt to resolve learning process problem. The approaches are using learning model and instructional visual aids given by the government. Innovative and delightful learning process offers wider opportunity for students to construct their knowledge independently and motivate students to be more active and creative in the learning. One example of innovative learning is Hands-On-Minds-On learning model.

Therefore, based on the problem above, to observe and improve students' learning outcome in Science lesson, this paper implemented Hands-on-Minds-On to the third graders of elementary school. This paper was a classroom action research (commonly referred as CAR).

According to Hendro Darmojo in Usman Samatowa, Science lesson is one of the rational and objective knowledge which discusses the phenomena related to the universe and everything within the universe. Science lesson also discusses natural phenomena which is arranged systematically and based on the observation and experimental results performed by human being.

Learning outcome takes an important role in the process of learning and teaching. Learning

outcome constitutes a correlation between the teaching of teacher and the learning of students. In the perspective of teacher, learning and teaching process is ended with the evaluation of learning outcomes. While, in the perspective of student, learning outcome is the goal of learning process; every student aims at getting good score from teacher as the final goal of learning. Learning outcome represents an ability which was acquired by student after the learning took place.

A.J Romizowaski in Asep Jihad and Abdul Haris argued that learning outcomes are outputs from an input processing system. In line with the above opinion, Ahmad Susanto explained that learning outcomes comprise of understanding concepts (cognitive aspects), processing skills (psychomotor aspects), and student attitudes (affective aspects). In the cognitive aspect, the expected learning outcomes are students' knowledge and memories. Student understanding is related to the ability to explain and summarize, the ability of students to analyze a problem and the ability of students to apply it in everyday life. Meanwhile, the affective aspect is related to the attitude of accepting, responding to assessments and interacting. For psychomotor aspects, students show productive, technical, physical, and social skills.

Based on the explanation above, students' cognitive abilities are abilities that have a major and important role in the learning process. However, when the 2013 Curriculum was implemented, students' affective abilities were the most preferred ability. Affective abilities that are emphasized in the implementation of the 2013 Curriculum are students' attitudes to the God Almighty. Therefore, cognitive ability is the second ability that is emphasized after affective ability. The 2013 curriculum emphasizes that students' thinking abilities must be balanced with good manners and morals as well. According to Gagne in Purwanto, learning outcomes illustrate the formation of concepts in which the categories we give to stimuli in the environment provides an organized scheme for assimilating new stimuli and determining relationships within and between categories. Furthermore, Benjamin in Asep Jihad and Abdul Haris argues that learning outcomes can be grouped into two types: Knowledge and Skills. Knowledge consists of four categories, namely: 1) Knowledge of facts; 2) Procedural

knowledge; 3) Knowledge of concepts; and 4) Knowledge of principles. Asep Jihad and Abdul Haris explained that Skills also consisted of four categories consisting of) Skills for thinking or cognitive skills; 2) Skills for action or motor skills; 3) Reaction skills or attitudes; 4) Interaction skills.

Sondang S Manurung (2010) argues that *Hands on* is an activity that involves practice or experimental activity. Cunningham & Herr in Sondang R Manurung said that *Hands-on* is defined as a learning approach that involves activities and direct experience with the environment or educational experience. This approach involves students actively in manipulating objects to gain knowledge or understanding (Ishola Akindele Salami, 2014). Hands-on-mind-on activity-based instructional strategies facilitate the learning of new skills, knowledge acquisition and gaining of experience through active participation of learners in the process of knowledge acquisition (The Ontario Curriculum Unit Planner,). Many research findings have shown that this type of activity-based instructional strategy is very effective for teaching abstract subjects such as Mathematics

Some previous studies examining the use of the Hand-On-Minds-On approach are as follows. Iwan Wicaksono, in his research entitled "The Application of *Hands - On and Minds - On Activity* Learning Model to Improve Activities and Completion of Physics Learning Outcomes of Class XI-A2 Students of SMAN 3 JEMBER ", stated that there was a positive and significant influence on the learning outcomes of students Class IX -A2 SMAN 3 Jember. Based on the findings in his research, the posttest percentage of learning outcomes obtained before conducting the treatment cycle using the Hands-On-Minds-On model was 26,471%. In the first cycle, the learning outcomes obtained increased by 58,823% of the results before treatment. Furthermore, in the second cycle, the results obtained were 67,468%. The success rate in the first cycle was 85,294% and the success rate in the second cycle was 93,939%. Thus, it can be concluded that the *Hands-On-Minds-On* learning model can improve learning outcomes of Physics lesson among students at IX-A2 SMAN 3 Jember.

Furthermore, research conducted by Rizki Amelia Solikhah shows that the *Hands- On-Minds-On* learning model in her research entitled "Implementation of *Hands-On-Minds* Learning Model Based on *Activities* to Improve Rational Thinking Skills" also gave a positive increase. Based on the findings obtained, the Hands-On-Minds-On learning model improves the rational thinking skills of Grade VIII students at MTsN Borobudur. The results obtained were 80% in the control class where before the application of the learning model was only about 7% (an increase of 73%). While in the control class, students' rational thinking ability increased by 73% from 2%, the final result obtained was 75%. It can be concluded that Hands-On-Minds-On improves student learning outcomes.

Based on a number of previous studies above, it can be broadly stated that the Hands-On-Minds-On learning model improves student learning outcomes. Therefore, it is expected that through classroom action research using the Hands-On-Minds-On learning model, it can improve student learning outcomes in science lesson.

The framework of this research is to emphasize the improvement of science learning outcomes by using the Hands-On-Minds-On model. There are a number of factors that influence the success of the learning process. These factors are internal and external factors; emerging from the teacher's side, school facilities, or from students. Thus numerous improvements need to be made in order to achieve optimal learning.

Activities *hands on and mind on* simultaneously can enhance students' thinking skills. This activity can form linkages in the brain, because when students combine activities that require physical movement, communication and listening it activates various parts of the brain to support the improvement of student learning outcomes.

METHOD

This study aims to produce the desired quality improvement. Thus, an appropriate approach for this research is a qualitative approach that produces written data, oral data, observational

data on the activities and behaviors of the subjects observed during the learning process. The study used classroom action research designs. In this study, researchers were directly involved from the initial stage to the final stage of the study. This class action research consists of four stages: 1) the planning stage, 2) the implementation phase of the action, 3) the observation phase, and 4) the reflection phase of the action.

Research settings and subjects

This research was conducted in Class III SD Negeri Tengah 07 Pagi in the 2014/2015 school year. This study took 20 students from a total of 42 students. Students who played a role as the population of this study were students with high science scores and students with low science scores. Some conditions at the time of the study were as follows: a) one of the researchers was a class teacher at the school, b) a school willing to accept the implementation of research as an additional task of teachers in designing CAR for administrative requirements, c) teachers have not applied the use of the *Hands On Mind On* model in the learning process, and d) they want to improve the learning outcomes of Natural Sciences in class III A students.

Research design

The model used in this study was Classroom Action Research (CAR) based on Kemmis and McTaggart. This research consisted of four main stages. The stages in the research were not static stages that resolve themselves but rather were moments in a spiral form that involve planning, action, observation, and reflection. Classroom action research is a link between practice and educational theory. There are four important stages in CAR, namely: a) *Planning*, b) *Acting*, c), *Observing*, and d) *Reflecting*.

The four stages in the CAR are the elements in forming a cycle, which is a round of successive activities, which will return to the initial step. So, one cycle is from the preparation of the design to the reflection. The four stages are based on a picture of the class action research cycle.

Classroom Action Research Procedure

- a. **Planning.** Based on the formulation of the problem, the authors arranged a plan of action

to be carried out. This action was in the form of the use of learning media in an effort to improve student learning

outcomes in Science lesson about Natural Resources. Planning was carried out by formulating the media design as follows: a) Arranging the draft in the form of a lesson implementation plan, this includes: competency standards (SK), basic competencies (KD), indicators, learning objectives, materials, approaches and methods, learning steps, media and evaluation. b) Arranging the facilities and infrastructure needed when implementing the *Hands On Minds On* model. c) Preparing data collection instruments in research in the form of field recording format and observation sheets. d) Determining the observer in the implementation of the action.

- b. **Action Implementation.** This stage starts from the implementation of Science lesson with the topic of discussion of Natural Resources. This research was designed in two cycles. One cycle was executed on one meeting. The activities were conducted by the author as a researcher in collaboration with colleagues as an observer. The researchers carried out activities in class in the form of interaction activities with students. The activities carried out are as follows: a) The researcher carried out research by providing a topic of discussion of Natural Resources with the *Hands On Minds On* model with the following steps: b) As a facilitator the teacher prepared concrete objects related to natural resources. c) Students created groups to discuss. d) Students observed the available media and discussed it with classmates. e) Then students discussed to solve the problem given by the teacher.

- c. **Observations.** The observations were conducted on the implementation of Science lesson in class III A by using the *Hands On Minds On* learning model. Observations were carried out in conjunction with the implementation of the learning model. Observations were conducted by observers who had previously been appointed. Observations were conducted when researchers

as teachers carried out Science lesson by explaining the topic of natural data sources using the Hands on Minds On model. In observing activities, researchers and observers attempted to understand in-depth the subject and document all indicators of the process and the results of changes that occurred. Observations were performed on an ongoing basis starting from cycle I to cycle II. The results of these observations would be discussed with the observer and then conducted a reflection for planning in the next cycle, and if the second cycle is successful then the research can be completed.

- d. **Reflection.** The reflection phase was carried out when an action has been completed. In the reflection stage, the observer and researcher discussed the actions that have been taken. The discussions included: a) analyzing the actions that have been taken, b) reviewing the differences between the plans and implementation of actions that have been taken, c) intervening by making interpretations and summarizing the results of data that has been obtained. The results of this joint reflection were then used as recommendations and suggestions to carry out further actions. In addition, the results of the action reflection activities were used to draw conclusions about the results on the cycles I and II.

Data collection technique

Data collection techniques used in this study were: a) Observation to collect data on the activities of students and teachers in learning activities in the classroom. b) Notes field to retrieve the data at the time of the study either deficiency or constraints that needs to be improved to enhance research, c) test sheets as an instrument to measure the ability of students, either prior knowledge and knowledge development and improvement of students during the action in the final cycle. The test was done in writing. d) Documentation was used as evidence of the implementation of research in the form of photographs when students and teachers actively involved in the learning process.

Indicator of Success

The measure used as an indicator of success in this Classroom Action Research is if students reach the Minimum completeness Criteria (KKM) of 65.

Data Analysis

a. Learning Outcomes Data Analysis

Learning outcomes were analyzed by sum up the average scores of formative test in percentage. To find out the average value of learning completeness, researchers used the following calculations:

$$\text{Value} = \frac{\text{Total score obtained by students}}{\text{Total students}}$$

b. Analysis of observations

Observation sheets were obtained every time the classification appears good, moderate, less or even none. Then, the presentation was calculated as follows:

$$\text{Percentage of students' response} = \frac{A}{B} \times 100\%$$

Information:

A = proportion of students who choose certain option

B = number of students (respondents)

This analysis was carried out during reflection stage. The results of the analysis were used as reflection material for further planning of the next cycle. The results of the analysis were also carried out as a reflection material in improving the learning design.

The table of criteria for the level of students' learning success in % is presented in table 1 below.

Table 1. Criteria for Students' Learning Success (%)

Success Rate (%)	Meaning
>80%	Very High
60-70%	High
40-59%	Medium
20-39%	Low
<20%	Very Low

RESULTS AND DISCUSSION

Initial Research Results (Pre-cycle)

This Classroom Action Research was conducted on Tuesday 26 May 2015 in class III A SDN Tengah 07 Pagi as an undertaken class by researchers. According to the researchers' experience, the results of science learning in class III A tend to be low. Generally, the learning media used still do not support the learning process in the classroom. Another factor was also due to the less active teachers in using fun learning models / methods.

Based on pre-cycle research results, it was obtained that 13 students did not reach the Minimum Completeness Criteria (KKM), and students who obtained above the Minimum Completeness Criteria (KKM) were 7 students. From the results of pre-cycle research, it was found that the value of Class III A is still relatively low with an average value of 60.75. Meanwhile, the Minimum Completeness Criteria (KKM) for science subjects is 65.

Cycle I Research Results

Based on the results of the first research / pre-cycle, it was obtained unsatisfactory results on the level of students' success which was under the Minimum Completeness Criteria (KKM). Then, researchers conducted second study / cycle I. In this cycle, researchers developed the Hands-On-Minds-On learning model. This learning model used student activities in holding and thinking objects related to the learning materials. Researchers made a Lesson Plan (RPP) based on the 2006 Education Unit Level Curriculum (KTSP) as a reference in teaching.

a. Cycle Planning I

Based on the problems obtained, a lesson plan was prepared with the following steps:

1) The teacher arranged the implementation of learning that has been adapted to the Education Unit Level Curriculum by applying the Hands-On-Minds-On learning model. 2) The teacher prepared materials and subject matter that have been compiled in the lesson plan and the actions that will be carried out in accordance with the learning process that will be executed during cycle 1. 3) The

teacher made evaluation questions for cycle 1 in total 20 multiple choice questions. 4) The teacher made an observation sheet that will be carried out by the observer to see the learning process by applying the Hands-On-Minds-On learning model. The observation sheet consisted of 2 parts. The first sheet was to see teacher's activities in conveying the learning process and the second sheet was to see activities of students in the learning process. 5) The teacher prepared a documentation tools.

b. Implementation Stage

The implementation phase that the researchers have done in the first cycle which was carried out on Wednesday and Thursday 27th and 28th May 2015 as follows:

The first meeting was on Wednesday, May 27th, 2015.

Pre-activity (10 minutes) a) At the beginning of the learning activity, the teacher asked the students to pray together led by the class leader. b) The teacher organized the class and recorded the students' attendance. All students of grade III A at SDN Tengah 07 Pagi were present at the time of the action. (2 non-active students) c) The teacher asked the students about the materials that will be learned, then the teacher showed various objects related to the materials to find out how deep the students' abilities related to this materials. d) The teacher conveyed the learning objectives in accordance with the delivered material. e) The teacher made several groups of 4-5 students. **Main activities (45 minutes)** a) The teacher used the Hands-On-Minds-On learning model with the following learning steps: b) The teacher divided the learning media in the form of concrete objects that relate to the learning material in each group, such as: rocks, plants, water and gasoline, and also classroom objects. c) Students were asked to observe and hold these objects. d) Students discussed with classmates about the objects that have been observed. e) The teacher gave questions to the group spontaneously. f) Students were guided by the teacher to understand the objects in front of him, so that they can distinguish between natural resources that can be renewed and natural resources that cannot be renewed. g) The teacher asked questions about things that have not yet known by the students. h) The teacher and students had questions and answer

session about the materials, and correct the misunderstandings. **Final activity (15 minutes)** a) Students were asked to come in front of the class to explain to their friends about the materials they have learned. b) The teacher provided opportunities for students' thinking time and gave direction to students who were experiencing difficulties. c) The teacher provided more reinforcement about the concepts that have been given. d) The teacher gave rewards from the work of students who get high grades and provided motivation to students who get low grades.

Meeting II (Thursday, May 28, 2015) a)

At the beginning of the learning activity, the teacher asked the students to pray together led by the class leader. b) The teacher organized the class and recorded the students' attendance. All students of grade III A at SDN Tengah 07 Pagi were present at the time of the action. (2 non-active students) c) The teacher asked the students about the materials that will be learned, then the teacher showed various objects related to the materials to find out how deep the students' abilities related to this materials. d) The teacher conveyed the learning objectives in accordance with the delivered material. e) The teacher made several groups of 4-5 students. **Main activities (45 minutes)** The teacher used the Hands-On-Minds-On learning model with the following learning steps: a) The teacher divided the learning media in the form of concrete objects that relate to the learning material in each group, such as: rocks, plants, water and gasoline, and also classroom objects. b) Students were asked to observe and hold these objects. c) Students discussed with classmates about the objects that have been observed. d) The teacher gave questions to the group spontaneously. e) Students were guided by the teacher to understand the objects in front of him, so that they can distinguish between natural resources that can be renewed and natural resources that cannot be renewed. f) The teacher asked questions about things that have not yet known by students. g) The teacher and students had questions and answer session about the materials, and correct the misunderstandings. **Final activity (15 minutes)** a) The teacher divided the evaluation sheet which total of 20 questions and explained how to do it. b) The teacher provided opportunities for students' thinking time and gave direction to students who were

experiencing difficulties. c) The teacher provided more reinforcement about the concepts that have been given. d) The teacher gave rewards from the work of the students who got high grades and provided motivation to students who got low grades. The following is a table that illustrates students' learning outcomes after working on the evaluation after the implementation of cycle 1, namely:

Table 2. Acquisition of Students' Science Learning Outcomes Data in Cycle I

No	Criteria	Types of Data	Total of Data	%	Average
1	Not Yet Achieved the Minimum Completeness Criteria (KKM)	0-64	5	25 %	78,5
2	Achieved the Minimum Completeness Criteria (KKM)	65-100	15	75 %	

Evaluation table in cycle I shows an increase in students' learning outcomes in natural resource material through the application of the Hands-On-Minds-On model. It also shows an increase from before the application of the Hands-On-Minds-On model that the number of students who have not reached the minimum completeness criteria in total 10 students or 50%, while the number of students who have reached the minimum completeness criteria are 10 students or 50%.

Based on the above data, it can be concluded that the percentage increase in the value of students' learning outcomes after the first cycle is 25% with 5 additional students who can reach the minimum completeness criteria with a number of 15 students while previously is only 10 students who can achieve the minimum completeness criteria. To have better understanding on the improvement of students' science learning outcomes, it can be seen in the table below:

Table 3. Students' Science Learning Outcomes in Pre-Cycle With Cycle 1

No	Criteria	Number of Students Who Has Reached the Minimum Completeness Criteria (KKM)	%	Average
1	Pre-cycle	10	50 %	60,75
2	Cycle	15	75 %	78,50

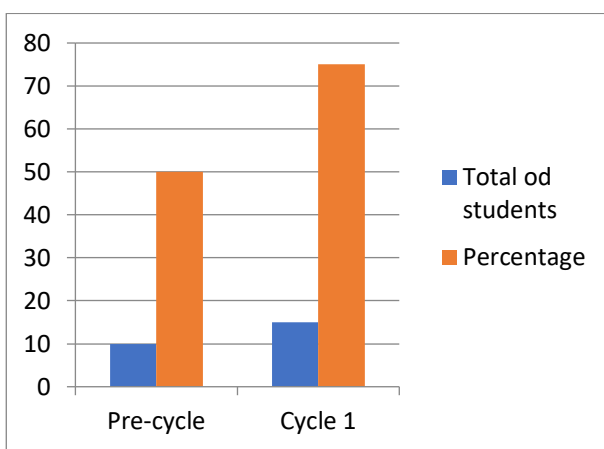


Figure 1. Students' Science Learning Outcomes in Pre-Cycle With Cycle 1

The increase in students' learning outcomes in natural resource material through the Hands-On-Minds-On model in the first cycle is the result of an analysis of learning activities conducted by the observer.

c. Observation and Monitoring Stage

At the observation and monitoring stage conducted by the observer, the following results are obtained: 1) Based on the observation sheet filled out by the observer, Sri Nursaidah, S.Pd for the teacher's activities (attached), science learning activities undertaken by the teacher that have not shown an increase on science learning outcomes. 2) The results of the observation to the students (attached) in science learning process conducted by the collaborators show that the students are very interested in learning science by using the Hands-On-Minds-On learning model. It can be seen from the enthusiasm and activeness of students in

learning. Even though the students seem eager to use the Hands-On-Minds-On learning model, but there has not been an increase in students' science learning outcomes.

Table 3. Observation Sheet of Teaching and Learning Process Students Respondents and Cycle Teacher Respondents

No	Activity	Percentage (%)
1	Student	69,231 %
2	Teacher	68,75 %

The observation results on the teaching and learning process on natural science subjects in the subject of natural resources through the Hands-On-Minds-On-learning model conducted by the observer. Teacher respondents are 68.75%, while student respondents are 69.23% in cycle 1

Observations were accomplished on the activeness of students in learning activities and to the teacher while delivering learning material using the Hands-On-Minds-On learning model. The percentage of the observations in the first cycle of teacher respondents reach 68.75% while student respondents reach 69.231%

d. Reflection Stage

Based on the observations made by the observer, there are still some inadequacy in the implementation of the first cycle, both at the first meeting and at the second meeting, while the deficiencies found include: 1) There are still students who pay less attention because of the grouping model which makes some students only rely on his friends who are active. Therefore, they are still highly dependent on friends. 2) There are some students who are not maximal and have not reached the target set by the researcher. 3) The teacher still appears very dominant in teaching and learning process, the teacher has too much control on students' activities, the freedom of students to express is somehow limited. 4) Students do not feel fully understand toward the material of natural resources using the Hands-On-Minds-On learning model. 5) At the conclusion of the material, only a

few students who dare to come in front of the class while others are still lacking the confidence to go to the front of the class. Teachers should pay attention to these conditions in order to improve students' science learning outcomes.

The result obtained in the implementation of the first cycle is observational data made by the observers in the learning process. There are notes that are discussed and summarized by the researchers and observers which will be the input for the teachers. It can also be concluded that the implementation of the first cycle has not been optimal according to the expected target. Thus, it is necessary to improve and continue in the next cycle, namely cycle II.

1) Results of Implementation of Cycle II, Cycle Planning II. Based on the evaluation and reflection obtained, the scenario in the second cycle of learning was compiled with the following steps: a) Teacher arranged the implementation of learning that has been adapted to the Education Unit Level Curriculum by applying the Hands-On-Minds-On learning model. b) Teacher prepared materials and subject matter that have been compiled in the lesson plan and actions that will be taken in accordance with the learning problems that have been carried out in cycle 1. c) The second cycle evaluation questions were 20 multiple choice questions prepared by the teacher. d) Teacher made an observation sheet that will be carried out by the observer to see the learning process by applying the Hands-On-Minds-On learning model. The observation sheet was consisted of 2 parts. The first sheet was to see the activities of the teacher in conveying the learning process and the second sheet was to see the activities of students in the learning process.

- 1) The teacher prepared documentation tools.
- Implementation Phase.** The implementation phase that the author has done in the second cycle which was held on Friday, May 29, 2015 as follows: **pre activities (10 minutes)** a) At the beginning of the learning activity, the teacher asked the students to pray together led by the class leader. b) The teacher organized the class and recorded the students' attendance. All students of grade III A at SDN Tengah 07

Pagi were present at the time of the action. (2 non-active students) c) The teacher asked the students about the materials that will be learned, then the teacher showed various objects related to natural resource to motivate the students and to find out how deep the students' abilities related to this materials. d) The teacher conveyed the learning objectives in accordance with the delivered material. **Main activities (45 minutes)**

- 2) The teacher used the Hands-On-Minds-On learning model with the following learning steps:
- 3) The teacher prepared concrete learning media in the surrounding environment. By using learning media from water, stones, plants, animals around the school, gasoline, benches, tables.
- 4) The teacher also asked the students to bring out 4 healthy 5 perfect food provisions which can also be used as concrete learning media that have been told before.
- 5) Students were asked to observe and hold objects provided by the teacher.
- 6) Each group discussed the objects that have been observed.
- 7) The teacher will give questions to the group spontaneously.
- 8) The teacher asked questions about things students didn't know yet.
- 9) The teacher and students had questions and answer session about the materials, and correct the misunderstandings.

Final activity (15 minutes)

- 10) Students were asked to eat 4 healthy 5 perfect food provisions they carry while being explained by the teacher about the relationship between food and the material presented.
- 11) The teacher gave more reinforcement about the concepts that have been given.
- 12) The teacher gave rewards to students with highest grade and provided motivation to students who get low grades.

Meeting II (June 1st, 2015)

Pre activity (10 minutes)

- 1) At the beginning of the learning activity, the teacher asked the students to pray together led by the class leader.
- 2) The teacher organized the class and recorded the students' attendance. All students of grade III A at SDN Tengah 07 Pagi were present at the time of the action. (2 non-active students)
- 3) The teacher asked the students about the materials that will be learned, then the teacher showed various objects related to natural resource to motivate the students and to find out how deep the students' abilities related to this materials.
- 4) The teacher conveyed the learning objectives in accordance with the delivered material.

Main activities (45 minutes)

- 5) The teacher used the Hands-On-Minds-On learning model with the following learning steps:
- 6) The teacher prepared concrete learning media in the surrounding environment. By using learning media from water, stones, plants, animals around the school, gasoline, benches, tables.
- 7) Students were asked to observe and hold objects provided by the teacher.
- 8) Each group discussed the objects that have been observed.
- 9) The teacher will give questions to the group spontaneously.
- 10) The teacher asked questions about things students didn't know yet.
- 11) The teacher and students had questions and answer session about the materials, and correct the misunderstandings.

Final activity (15 minutes)

- 12) Students were asked to work on evaluation questions that have been prepared by the teacher.

13) The teacher checked the student's work.

14) The teacher gave more reinforcement about the concepts that have been given.

15) The teacher gave rewards to students with highest grade and provided motivation to students who get low grades.

The following is a table that illustrates students' learning outcomes after working on the evaluation after the implementation of cycle 2, namely:

Table 4. Acquisition of Students' Science Learning Outcomes Data in Cycle 2

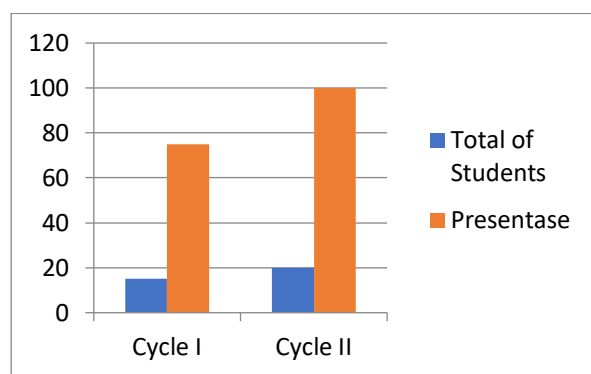
No	Criteria	Types of Data	Total of Data	%	Average
1	Not Yet Achieved the Minimum completeness Criteria (KKM)	0-64	0	0 %	85,25
2	Achieved the Minimum Completeness Criteria (KKM)	65-100	20	100 %	

Evaluation table in cycle II shows an increase in students' learning outcomes in natural resource material through the application of the Hands-On-Minds-On model. It also shows an increase from cycle I that the number of students who have not reached the minimum completeness criteria in total 5 students or 25%, while the number of students who have reached the minimum completeness criteria are 75%.

Based on the above data, it can be concluded that the percentage increase in the value of students' learning outcomes after the 1st cycle is 25% with 5 additional students who can reach the minimum completeness criteria with a number of 20 students while previously is only 15 students who can achieve the minimum completeness criteria. To have better understanding on the improvement of students' social learning outcomes, it can be seen in the table below:

Table 5. Students' Learning Outcomes in Cycle I and Cycle II

No	Criteria	Number of Students Who Has Reached the Minimum Completeness Criteria (KKM)	%	Average
1	Cycle I	15	75 %	78,5
2	Cycle 2	20	100 %	85,25

**Figure 1. Students' Learning Outcomes in Cycle I and Cycle II**

The increase in students' learning outcomes in natural resource material through the Hands-On-Minds-On model in cycle II is the result of an analysis of learning activities conducted by the observer.

CONCLUSION, SUGGESTION AND IMPLICATION

From the results of the analysis of research data shows that learning science with Hands-On-Minds-On learning model in its implementation using learning media in the form of concrete objects in surrounding environment. The use of media in the form of plants, stones, water, pets and gasoline which are concrete objects related to natural resource material. The chosen media as learning model is in order to emphasize more on students' understanding by looking at, holding and observing these objects. Thus, students can distinguish between renewable natural resources and non-renewable natural resources. In addition, the learning media used are also easy to obtain because

researchers use media from students' environment both at school and at home. By using these objects, students are more interested in understanding material in learning process which will be useful for improving learning outcomes. Students also show a high enthusiasm for learning, as well as a sense of responsibility, pleasure, sincerity and interest in learning science.

The implementation of the Hands-On-Minds-On model also enhances teacher professionalism in implementing learning process in the classroom. Learning process carried out by professional teachers will be able to increase students' learning success in school. It allows students to be able to explore, be creative and practice working together to discover their own knowledge by seeing, holding and understanding. Such student abilities will greatly assist students in understanding the subject matter being studied. Based on the results of research through the Hands-On-Minds-On model given in class III A SDN Tengah 07 Pagi Jakarta, it turns out that it can improve the learning outcomes of Natural Sciences subject in accordance with the criteria of the researcher. Improvement of test results in the learning process conducted by students has increased from cycle I to cycle II. The percentage of science learning outcomes in the first cycle was 75%, with an average value reaching 77.75 while the percentage of learning outcomes in the second cycle increased to 95% with an average value of 83.25. It can be concluded that research with Cycles I and II can improve the learning outcomes of science subject of Class III A students by using the Hands-On-Minds-On learning model so that the research ends in the second cycle. Students feel more motivated in learning, and can improve learning outcomes maximally.

Suggestions Based on the conclusions of the research results, researchers convey the following suggestions: a) To improve the quality of students' learning in science lessons in elementary schools, teachers must have active and creative skills in designing learning that motivates students to create successful learning by using the Hands-On-Minds-On model . b) By choosing appropriate learning methods and media that will have an impact on improving students' learning outcomes. c) The use of concrete learning media and accessible

learning media in the surrounding environment can make it easier for students to understand the material and allow students to learn it out of learning hours. d) Teacher immediately conducts a self-evaluation to correct the deficiencies that exist during learning process so that the results achieved are maximum.

Implication. The implication that learning by using the Hands-On-Minds-On model for students' science learning outcomes has the following implications: a) The Hands-On-Minds-On learning model has more influence on students' learning outcomes. b) The Hands-On-Minds-On learning model is more effectively to be applied to science subject to improve students learning outcomes. c) The Hands-On-Minds-On learning model can make students actively learn, make students feel more curious and able to make students more motivated in learning, and can improve learning outcomes maximally.

REFERENCES

- Cunningham J. &., Hands.1994.*on physics activities with real life applications*. Epstein, A.S. 2007. Essentials of Active Learning in Preschool. High/Scope Press. Michigan USA, Ypsilanti. Federal Republic of Nigeria (2004). National Policy on Education. 4thEd, Jibowu Lagos, NERDC
- Hardini, Isriani dan Puspitasari, Dewi.2012. *Strategi Pembelajaran Terpadu*. Yogyakarta: Familia
- <http://biologyeducationresearch.blogspot.com/2009/12/hands-on-activity-dalam-pembelajaran.html> (diunggah sabtu 4 April 2015 jam 09.27)
- <http://srihendrawati.blogspot.com/2009/10/artikel-pembelajaran-tematik.html> (diunduh Sabtu tanggal 4 April 2015)
- https://www.google.co.id/search?q=gambar+siklus+PT+K&biw=1366&bih=667&tbm=isch&tbo=u&source=univ&sa=X&ved=0CBsQsARqFQoTCLix65_eyscCFVAZjgod-CoBjg (diunggah rabu tanggal 13 mei 2015 pukul 14.00)
- Ishola Akindele Salami. Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS) 5 (7): 96-103 © Scholarlink Research Institute Journals, 2014 (ISSN: 2141-6990) jeteraps.scholarlinkresearch.com (diunggah 4 April 2015)
- Jihad, Asep dan Haris, Abdul.2012.*Evaluasi Pembelajaran*. Yogyakarta: Multi Pressindo.
- Majid, Abdul. 2013. *Strategi Pembelajaran*. Bandung: PT. Remaja Rosdakarya.
- Manurung, Sondang S.2010. *Hands On Minds On Activity Dalam Pengantar Fisika Kuantum Bagi Guru Fisika*. Bandung: Himpunan Fisika Indonesia Cabang.Jawa Barat
- Mudjiono dan Dimyati.2006. *Belajar Dan Pembelajaran*. Jakarta: PT. Rienka Cipta.
- Purwanto. 2011. *Evaluasi Hasil Belajar*. Yogyakarta : Pustaka Belajar.
- Riswan. 2012. Upaya Meningkatkan Hasil Belajar IPA Menggunakan Model Hands On Minds On di SDN Kp. Rambutan 03 Pagi Jakarta. Jakarta: FKIP UHAMKA.
- Samatowa, Usman. 2011. *Pembelajaran IPA Di Sekolah Dasar*. Jakarta: PT. Indeks.
- Santrock, W Jhon. 2011. (terjemahan Verawaty Pakpahan, Wahyu Anugraheni) *Masa Perkembangan Anak (Children)*. Jakarta: Salemba Humanika.
- Susanto, Ahmad. 2013. *Teori Belajar Pembelajaran*. Jakarta: Kencana Prenadamedia Grup.
- Sutikno, Sobry. 2013. *Belajar Dan Pembelajaran*. Lombok: Holistca.
- Trianto.2010. Model Pembelajaran Terpadu Konsep,strategi, implementasinya dalam Kurikulum Tingkat Satuan Pendidikan (KTSP). Jakarta: PT. Bumi Aksara.
- Wicaksono, Iwan. 2012. Penerapan Pembelajaran Model Hands On And Minds On Activity Untuk Meningkatkan Aktivitas Dan Ketuntasan Hasil Belajar Fisika Siswa Kelas XI-A2 SMAN 3 JEMBER. Jember: Universitas Jember.
- Yamin, Martinis. 2013. *Strategi & Metode Dalam Model Pembelajaran*. Jambi: GP Press Group