

Improving Fourth Grade Students' Science Learning Achievement Using Process Skill Approach At Inpres Mangga Dua Elementary School of Merauke

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Abstract – The research is aimed to improve science learning achievement of the fourth grade students at Inpres Mangga Dua Elementary School of Merauke using process skill approach. This research is a classroom action research which is consisted of phases namely; plan, action, observation, and reflection. The subjects of this research are 23 fourth grade students at Inpres Mangga Dua Elementary School consisted of 14 female students and 9 male students. The data of the research is focused on teachers' activity, students' activity and on students learning achievement in understanding the process of erosion. The result of this research shows that there is a positive improvement on teachers' and students' activity as the learning takes place. Moreover, the students' learning achievement is also improved. This improvement might be seen through the students' learning achievement after the first cycle in which students classical comprehension is improved from 69% to 74,34% and it is also improved in the second cycle to become 81,5%. It is proved that students' classical comprehension is categorized good. Students' classical learning mastery at the first cycle is 73% and it is improved at the second cycle becoming 95%. It shows that the students' learning mastery improvement is categorized very good. Based on the data above it might be concluded that process skill approach could improve the fourth grade students' learning achievement at Inpres Mangga Dua Elementary School of Merauke.

Keywords : Learning Achievement, Skill Process Approach.

I. INTRODUCTION

The role of a teacher could not be separated from the education. The education quality of a nation would be determined by the quality of education management. In this context, teachers are responsible to guarantee the quality of te students weather in the school or out of the school.

As the basic key, basic education is expected to be the bridge to improve human resource quality. It enables people to compete regionally even internationally. Moreover, basic education is also being the platform for the higher education. The quality of higher education is determined by the basic education quality. It is confirmed that higher education quality is greatly depended on the quality of basic education [1]

Education could be modified as a process of gaining knowledge, understanding, and also specific behavior by applying particular learning methods. The improvement of education and teaching quality should be improved by improving the learning quality.

Basically science is always changed. Thus, the teachers knowledge should also be adjusted with the newly changes. Teachers ought to search for the newest suitable teaching methods by intention to present cheerful and meaningful learning activity. However, the fact shows that many teachers are still teaching the students by delivering speech in front of the class, reading the texts written in the teachers' book for the students, writing the materials on the whiteboard to be rewritten by the students or just giving quiz to the students. In this context the students would only be passive; they just sit on the chair, listen to the teacher and try to understand the topics passively from students' book. As the teachers ask them questions, they do not even have a piece of courage to answer. Surely this learning model is just emphasized on curriculum target that is finishing all the learning topics before the final test. It tends to be stiff. The students are not involved actively in the learning process. Consequently, the students are not interested in science and their learning achievement is also lower.

Learning achievement is the indicator created by the teachers through a learning process. Learning achievement might be a kind of knowledge or skill that is measured using specific test instrument. Based on the earlier collected data, it is known that the fourth grade students' science learning achievement at Inpres Mangga Dua Elementary School is still categorized low. Minimum Learning Mastery Standard (KKM) that is defined for science subject is 75 on the other hand the lowest score achieved by the students is 45 while the highest score is 82,5. The students' average score for science 70,4. However, from all 23 students, there are only 9 students who could meet the Minimum Learning Mastery Standard. It has been caused by the selected method which is tend to lead the students memorizing the subject.

Basically, in elementary education level, science which is thought to the fourth grade students covers many topics. Due to this study the researcher would only focused on "Basic Competence 3.4. It discusses about the effect of

physical environment change to the plain (erosion, abrasion, flood and landslide).

In Indonesian, science is known as "IPA." It is the abbreviation of *Ilmu Pengetahuan Alam or Natural Science* [2]. Science is kind of human gained knowledge about nature [3].

Science is crucial to be taught to the elementary students since it could encourage the students to think critically and objectively [4]. However, the teachers should be able to design and implement a kind of learning that might encourage students' willingness to search, find, conclude and communicate their various knowledge and experiences [5].

The science implementation could be done by considering elementary students' character. Stated that students at the ages of 7 – 12 are in concrete operational phase [5]. Thus, the learning process should be designed to enable the students to see and do something, participate actively in learning, and truly involved with the things which are learned. It is confirmed also by Iskandar (1997) that if science learning ignores the process skill, the facts being learned would only be a kind of memorization that would not be understood wholly by the students.

Process skill is important because skill reflects the character of the students in creating their conception about the nature normally [6]. It also provides the students opportunity to find the concept of nature themselves, so it might give them the series of mental development. It also enables the students to deepen their knowledge about science as much as they could and to encourage their curiosity through science process skill [7].

Due to skill process classification, Stated that science process skill could be categorized into two, they are basic skill and integrated skill [8]. This point of view is in line with point of view which confirmed that science process skill is categorized into *basic process skills and integrated process skill*. Specifically stated also that basic process skill covers observation skill, classification skill, communication skill, measuring skill, prediction skill, and interfering skill, integrated proses skill covers variables identification skill, data table constructing skill, graphic making skill, data gathering and processing skill, data analyzing and investigating skill, hypothesis constructing skill, operational variable constructing skill, investigation designing skill and experimenting skill [7]. Otherwise, not all of those process skills could be developed for the elementary students.

According to [8] science process skill in elementary level might be focused on the basic process skill in which the students are encouraged to do various activities independently by intention to construct their process skill. To this issue, [9] also confirmed that basic process skill is the platform for the integrated process skill which is more complicated. This view is in line with Suderadjat's view stating that basic process skill should be the major objectives of science learning. At the schools because basic process skill provides platform for the basic integrated process skill. It means that the quality of the integrated process skill would be badly influenced by the basic process skill [10].

Based on the above point of views, this research would be focused on basic process skill and it would be specifically

concentrated on observing, clarifying, predicting, and communicating skill. Measuring and inferring skills would be ignored in this research.

The following are the indicators of basic process skill that would be investigated through this study:

TABLE I. STUDENTS BASIC PROCESS AND INDICATORS

| Process Skill Classification | Table Column Head | |
|------------------------------|---|--|
| | Indicators | Source of Data |
| Observing | Observing an object or event detailedly. | Students' activities, Students' achievement score analysis |
| Classifying | Identifying and naming observable characters of group of objects which can be used to classify. | Students' activities, Students' achievement score analysis |
| Predicting | Predicting particular event that would happen based on the observation and classifying results. | Students' activities, Students' achievement score analysis |
| Communicating | Communicating and classifying ideas orally or writtenly. | Students' activities, Students' achievement score analysis |

The table shows process skill classification covers observing, classifying, predicting, and communicating skills. They provide the students opportunity to find the facts about science concept. It enables them to reach optimal learning achievement. The learning materials would be learned, understood, comprehended, internalized, and remembered easily [7].

II. RESEARCH METHOD

This study is categorized as Classroom Action Research. [11] stated that classroom action research is a process of observing specific activity that is intentionally created in a classroom. The intervention or cycle design in this research would apply Kemmis dan Mc Taggart design model using spiral system started from planning, acting, observing, reflecting and it would start again on re-planning learning strategy.

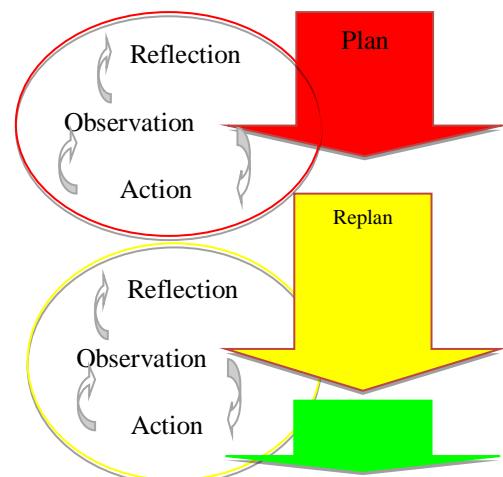


Fig. 1. Kemmis Dan Taggart Classroom Action Research Model Design

Action research process is firstly started with planning, but because those four activities covered into a cycle, so all of those activities play their roles continuously.

This classroom action research takes two months, from February to March 2019. The subjects of the research are 23 fourth grade students at Inpres Mangga Dua Elementary School of Merauke. They consisted of 14 female students and 9 male students. The researcher in this research is a class-teacher who would be helped by two other partners acting as the observers. One of them is the teacher for the third grade students and another one is the teacher for the fourth grade students at Inpres Mangga Dua Elementary School of Merauke. Data collection technics applied in this research are the test and observation. The test that is designed is an evaluation test. It would be held at the end of every cycle. It is a multiple choice model of test that consisted of 20 questions. Meanwhile the observation is aimed to get a comprehensive picture about the activity of the teacher and the students, weather in the first cycle or in the second cycle. The analysis on the students' learning score achievement would be focused on the aspect of individual comprehension (DSI), Classical Comprehension (DSK) and classical learning mastery (KBK). The analysis on the teachers' activity would be done descriptively by interpreting observation results based the following scoring criteria; very poor (0 – 20), poor (21 – 40), enough (41 – 60), good (61 – 80), very good (81 – 100). If

The indicator of the success of PTK is that if the individual comprehension reaches 65% and classical learning mastery reaches 85%. Otherwise, the average percentage of teacher activities, psychomotor and affective abilities are in the good category.

III. RESEARCH FINDINGS AND PRESENTATION

A. Cognitive Learning Acheivement

Based on the result of the final evaluation test for the first cycle it is known that 17 students from 23 total students could reach the minimum mastery standard, while other 6 students could not. In this cycle the presentation of students' classical comprehension is 69.3% and the presentation of their classical learning mastery is 73.9%. Moreover, the final evaluation test result for the second cycle shows that from 23 total students there are 22 students who could successfully reach minimum mastery standard and there is only 1 student who could not reached the standard. In the second cycle the presentation of classical comprehension is 81.5% and the presentation of classical learning mastery is 95.6%. Description of the evaluation test data gathering from the first and the second cycle would be presented in the following table:

TABLE II. FINAL EVALUATION CYCLE I AND II

| Aspect | Research Findings | |
|---|-------------------|-----------------|
| | Cycle I | Cycle II |
| Number of Students | 23 students | 23 students |
| Lowest Score | 45 (1 student) | 55 (1 student) |
| Highest Score | 85 (2 students) | 100 (1 student) |
| Number of students who reach minimum mastery standard | 17 students | 22 students |

| Aspect | Research Findings | |
|--|-------------------|-----------|
| | Cycle I | Cycle II |
| Number of students who coud not reach minimum mastery standard | 6 students | 1 student |
| Clasical comprehension | 69.3% | 81.5% |
| Clasical learning Mastery | 73.9% | 95.6% |

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Based on the research finding, it is shows that in the first cycle the average presentation for teacher's activity is 71.1% classified into good category, the average presentation for students activity focused on affective aspect is 62.0% categorized good and for student's activity focused on psychometric aspect is 60.3% categorized enough. Based on the research finding, it is known also that the average presentation for teacher's and students' activity is categorized very good. The average presentation for teacher's activity is 88.9%, the percentage of student's activity focused on affective aspect is 87.6% and the average presentation of student's activity focused on psychometric aspect is 87.3%.

TABLE III. OBSERVATION ON TEACHER'S AND STUDENTS' ACTIVITY AT THE FIRST AND THE SECOND SICLUS

| Observed Aspect | Achievements | | Category | |
|------------------------------|--------------|----------|----------|-----------|
| | Cycle I | Cycle II | Cycle I | Cycle II |
| Teacher's activity | 71.11% | 88.9% | Good | Very Good |
| Student' activity : | | | | |
| ▪ Affective skill aspect | 62.0% | 87.6% | Good | Very Good |
| ▪ Psychomotoric skill aspect | 60.3% | 87.3% | Enough | Very Good |

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B. DISCUSSION

The research finding shows that students' activity and students science learning achievement could be improved significantly. Based on the collected data, in the first cycle the students' achievement level could not reach minimum learning mastery standard and there are still indicators of process skill approach that could not be reached. They are predicting skill and communicating skill. According to [12] process skill approach is a kind of physical and mental skill connected a number of basics kills that should be mastered and implemented in a particular scientific activity. The same point of view also proposed by [13], by saying that "process skill approach is an instructional approach that is focused on students' learning process". Students' successful achievement showing at the second cycle is categorized good. In the last learning process, students could meet all the indicators of process skill.

In the first cycle there are 17 students who reach the minimum learning mastery standard while 6 other students could not reach the standard because they do not understand the lesson well. Besides that the teacher also does not implement the lesson plan well. In the second cycle the students learning achievement is improved significantly. It is proved that there are 22 students who successfully reach the minimum learning mastery standard and there is only 1student who could not reach the standard. However, the student who fails to reach the standard is the one identified

having low thinking ability. This is the reason why the students learning mastery standard might not be reached maximal level (100%). The learning experience gained by students in the learning process is in line with the opinion stating that one of the skills that might be trained through learning process skill is communication [14].

Based on the analysis result above, it shows that after doing basic process skill the students' learning achievement could be improved. It might be seen on the positive change happening in every indicator.

IV. CONCLUSION

Referring to the achievement change from the first cycle to the second cycle it might be concluded that the learning achievement of the fourth grade students at Inpres Mangga Dua Elementary School of Merauke could be improved. The number of students who successfully reach the minimum learning mastery standard in the first cycle is 17. It is then improved in the second cycle to become 22 students. Is also proved that the students' comprehension on the process of erosion can be improved through a basic process skills approach. This is indicated by the indicator of achievement where the students' average classical comprehension at the first cycle is 69.3% and it to be 81.5% in the second cycle. In this cycle the students' average learning mastery standard at the second cycle could be improved from 73.9% to 95.6%. Students' learning activity could also be improved and categorized very good

V. SUGGESTION

Reflecting to the research finding above, it is expected that: (1) elementary science teachers apply process skill approach to improved students' science learning achievement by considering the character of the students and the material. The teachers are also expected to use various learning sources by utilizing the learning sources found in the school environment. (2) There should be done certain research focused on the use of science process skill for the other grades at the elementary level.

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