

Review Journal Problem Based Learning Model On Science Procces Skill Based On Learning Motivation

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Abstract: Science process skills is one of the skills that are Slightly needed by students in elementary school. Science process skills it is a basic competence to develop a scientific attitude and skills in solving problems, so as to form the students' personal creative, critical and innovative. This study aimed to determine the interaction between PBL learning model on Science Process Skills in terms of motivation to learn, the formulation of the problem in this study is are there influential PBL learning model of the science process skills in terms of students' motivation in primary schools. The process of collecting data from the literature Review obtained from several research articles in a database that is associated with discussing science process skills. On the results of the analysis of several articles according to research topics are 5 articles and of all the articles there is nothing to discuss the implementation of PBL related to the science process skills in terms of motivation to learn in an elementary school classroom.

Keywords: PBL model, Science Process Skills, Motivation

I.INTRODUCTION

The nature of science teaching in outline has three main components, namely the scientific process, scientific products, and scientific attitude. It was submitted by Yoshihiro [1] that the activities of the Natural Sciences studied the things that must be considered by students is how students can conduct scientific process, have a scientific attitude, and create scientific products. The third component of the IPA (science) would be obtained if students have gone through the scientific method. The scientific method was developed gradually and continuously, with the hope that it will eventually form a more complete alloy so that students in elementary school can do simple research. The scientific process is a fundamental component that must be mastered elementary school students before he was able to produce scientific products and scientific attitude.

The scientific process basically has two types of skills that can not be separated from one another, namely the basic skills and integrated skills. Similar delivered also by Punia Turiman et al [2] states that the science process skills are divided into two basic process skills and integrated process skills. Basic skills in science process skills include observing, classifying, predicting, measuring, conclude, and communicate. While the integrated skills include the skills to identify variables, tabulating the data, present data in graphical form, describing the connectedness variables, summarize and process the data, analyze research, develop hypotheses, defining variables, as well as designing and conducting experiments.

Curriculum 2013 emphasis on strengthening the learning process, in this case, the student should be able to figure out not just given out. Therefore, the stages of the learning process must be observed and emphasized to the students. The process steps described in the scientific approach which is in line with the scientific method in science learning. In science teaching not only emphasizes the mastery only products, but also the acquisition of skills and the process of scientific attitude. Skills in the science learning process are what is known by the name of the science process skills of students.

Very important science process skills possessed by the students to face the challenges of globalization that demand competition between humans. The science process skills one of the skills that must be developed in education, especially in science learning or science because it is a basic competence to develop a scientific attitude and skills in solving problems, so as to form the students' personal creative, critical, innovative, and competitive in the global competition in the community [2]. According to Rustaman [3], science process skills are skills that involve cognitive skills or intellectual, manual and social. Cognitive skills involved because by doing process skills students use their minds, while the manual skills definitely involved because they involve the use of tools and materials, measurement, preparation or assembly tools. Social skills are involved because of the interaction between teachers and students in implementing the teaching and learning activities.

According to research from Organization for Economic Cooperation and Development (OECD) [4] in 2015 the proportion of the value of Indonesian students is still low, the average score obtained for science lessons is 493, therefore, the student and Indonesia ranked eighth lowest in the ranked 69th out of 76 countries participating in PISA. Similarly, the results of the TIMSS (The Trends in International Mathematics and Science Study) in 2007 and 2011 in math and science for students in grade 8 junior participant can only reach the intermediate level (Kemdikbud, 2014). For TIMSS 2015, showed the students Indonesia is ranked 36 out of 49 countries in terms of doing scientific procedures in science subjects (OECD) [4]. From the results of these studies indicate that the acquisition value of Indonesian students showed no significant changes and is still very low in the level of mastery of science. Low science capability possessed by Indonesian students affected by many factors such as the educational system and curricula, methods and models of

teacher learning, learning facilities, learning resources, and teaching materials.

Based on the results of preliminary observations conducted by researchers at three schools in Surakarta, researchers found facts on the ground that one of the main factors that lead to low ability students' science is learning that is centered on teachers who make students become passive in the learning process and only accept information provided by the teacher. So that the learning process of students do not have freedom of thought and less digging for information it receives. As a result of learning in the classroom to be less attracted to the attention of students so that the students' ability to understand and master the material to which it becomes very low. The method and the learning model used by the teacher is less able to facilitate students to develop science process skills. Besides the teachers still, do not understand the use of an innovative learning model that can be applied in the classroom. Teachers were solely concerned with the learning step is usually done with the material written on the book source. Lessons are conducted not supported by the media and props are adequate.

Referring to the interview with the Guardian Class V SD clover Kidul sub-district Pasar Kliwon Surakarta, obtained information that actually never done learning science teacher or science with the experimental method. Implementation of learning using the experimental method performed by the teacher at the time of presenting the material grouping plant species. Based on data obtained from interviews showed that most students scored below the minimum completeness criteria (KKM) which is set at 77. Most of the students in the learning process of science only received a score of 70 which is a medium value category.

Referring to the interview results are also obtained information about the factors that lead to teachers reluctant to carry out the experiment. These factors include the time it takes quite a long time. The learning model became one of the efforts to improve students' science process skills. The learning model can create a learning atmosphere that is innovative and effective. In the application of an innovative learning model in the classroom, students are required to be actively involved and participate in the process of acquiring a piece of knowledge, while teachers act more as facilitators. There are various models of learning that can be applied in science or science learning materials mainly when referring to the curriculum in 2013 (K13) as, inquiry learning, problem based learning, experiments, science, and technology community Contextual Teaching and Learning. An innovative learning model that can be applied in the process learning with an emphasis on science process skills, a wrong which is the model of learning problem based learning.

Learning model problem based learning has the characteristics, namely the investigation authentic. According to Trianto, problem based learning requires that students conduct an investigation authentic which includes analyzing and defining the problem, create a hypothesis, collect and

analyze information, conduct an experiment (the experiment), and drawing conclusions. All these activities require students to play an active role in the learning process and train their science process skills. That is, Problem Based Learning teaching model is suitable for use in developing the science process skills of students [5].

The success of a learning process in improving the skills of students not only through the application of innovative learning models and effective. But is also influenced by the level of motivation to learn from the students themselves. Good learning motivation will affect learning system so that students can increase understanding of the concept. There are two types of motivation have every person that is the motivation that comes from within the so-called internal motivation and the motivation that comes from outside or external motivation. In the process of learning one form of motivation usually given by teachers to students is to give encouragement to the students to be more active in participating in the lesson. In addition, other forms of motivation given by a teacher are to provide rewards or awards to students who are active in the learning process as well as students who dared to ask questions and answer questions from the teacher. Good motivation does not come from other people but from the students themselves.

This is consistent with results of previous studies that have been performed by Lestari [6], which indicates that there is a positive and significant influence between learning motivation of the students' conceptual understanding. There is a positive effect of linear and significant correlation between learning motivation towards students' understanding of science concepts using learning model is a model of Problem Based Learning and LC 5E, these effects contributed 35.1%. Viewed from various aspects that have been outlined, then this study will be conducted to determine the influence learning model Problem-Based Learning and Guided Inquiry on science process skills in terms of motivation to learn fifth-grade students of SD Elementary School Surakarta.

Objectives and Formulation of Research Problem Science process skills are very important to have students in elementary schools in everyday life. Science process skills will assist students to know phenomena and problems in daily life related to science. One way to improve science process skills is using the learning model that has the characteristics according to science, the PBL. Therefore, the purpose of this study is to determine how the interaction of PBL learning model of the science process skills in terms of elementary school students' motivation.

Researchers are trying to find answers to questions of this study, which is related to the interaction model of PBL learning about science process skills in terms of motivation to learn, the formulation of the problem in this research is Is there any influence learning model PBL against science process skills in terms of student motivation primary school?

II. METHODS

This study uses literature review or study of literature. According to Hasibuan [7] Literature review contains a description of the theory, findings and other research materials obtained from reference materials to have relied on research activities. The description in the literature review, is directed to draw up a clear framework on solving issues already described in the previous formulation of the problem. Meanwhile, according to John W Creswell [8], there are several steps that must be carried out in the literature review, including (1) Identify key terms, (2) Locate the literature, (3) Critically Evaluate and select the literature, (4) organize the literature. Explanation related to stages in the literature review as follows:

1. Identify Key Terms

At the stage of identifying key terms, is done by starting the author to narrow the research topic or choose the focus of research to provide convenience in a literature search. Researchers can select keywords using variables associated with the title of the study. In this study, the authors use keywords (1) science process skills (2) learning model PBL / Problem Based Learning (3) Motivation to learn

2. Locate Literature

After completing the first phase, the investigator can collect the relevant literature. Searches can be initiated with access to the internet and search for the appropriate electronic literature to research topics. Some of that can be done in the second phase, namely (a) the use of academic libraries (b) use of primary and secondary sources (c) find the types of different literature. In this study, the literature identified in April 2019 with the first step is to explore the database is more related to the study of education, namely ScienceDirect.

First, the authors do an advanced search in ScienceDirect with keyword "science process skill" (the title of the abstract is

provided) generate as many articles as 5086. Furthermore, the keyword "learning PBL models" (in the title and abstract are provided), yielded 72 articles. One final keyword "motivation of learning" (in the title and abstract are provided) yielded 192 articles.

3. Critically Evaluate and Select the Literature

The next steps that the researcher must sort out where the appropriate literature to research topics. Researchers screened the results of the appropriate literature search included in the study. This needs to be done in order not to pages with the theory of overlapping and stacking. Therefore, at this stage of Critically Evaluate and select the literature, the authors decided to sort out some of the articles can be more compatible with the inclusion criteria or according to the research topic. Therefore, the authors chose, various articles obtained according to the research topic as much as 5 articles.

4. Organize the Literature

Materials obtained information is then read, recorded, arranged, and written back. Writing can be done by writing an abstract or make little notes and create tables, diagrams and so forth. Some things that can be done at this stage, including: (1) quotes, download, and archive (2) make calendar notes-notes and summarize, (3) create a concept map

5. Write a Literature Review

The last stage is to write back the results a summary of information obtained through the literature to be included in the research report. Some things to note (a) using a style appropriate to write a review of the complete product (to register at the end of the research report) and to develop titles for the study of literature (b) using writing strategies specifically related to the extent of study, type of study, and cover on study.

Table 1. Journal Analysis

The author's name, journal and year	Aim	Research methods	Data source	Research result	Similarities and differences with the research thesis
VolkanHasan Kaya, ScienceDirect 2012	The main objective of this study was to explore the relationship between the level of scientific literacy and scientific process skills elementary school students	Quantitative	Test	The results showed that there is a positive relationship and statistically significant between levels scientific literacy and scientific process skills score. In support of these findings, a study conducted by elementary school students	Differences with the thesis author of this study are that in this study find the relationship between science literacy and science process skills, clearly different. While the equation only on variables that discusses the subject of scientific literacy with elementary school students
PuniaTuriman Science Direct 2011	To find out how the relationship between the ability of science process skills and science literacy of students owned in science in the 21st century.	Qualitative	Questionnaire	The research found the fact that students will better understand the practical principles of science, through the transfer of knowledge to problems in everyday life. Furthermore, the positive attitude towards learning science itself can be fertilized and thus teamwork and social interaction can be improved.	Differences in the study course of the research methods used, that in this study using qualitative methods and discuss how a particular program such as the application of the model PBL learning, discussion and the use of media such as animation can influence positively to increase the level of scientific

					literacy and process skills science owned by the students in learning science. These research equations only on variable science process skills.
Gabriel Gorghiu Science Direct 2014	To determine the effectiveness of learning Problem Based Learning Model with application modules in science learning	Quantitative	Questionnaire and tests	From the results, the findings of the majority of respondents believe that students or teachers can establish good communication with students through the application of PBL learning model accompanied with science learning modules. However, some students answered sometimes. From the results of tests given later served on a table show its results of the comparison between the responses of the students before and after the modules implemented in learning science PROFILE Implementation. Obtained results of the comparison value/figure significantly between before and after the application of PBL models accompanied by learning modules "PROFILE"	Differences in this study lie in the object of research is in the journal/article is the focus of research on high school students, another difference is the research variables, especially the dependent variable on the article using science learning modules. These research equation only on variable Pembelajaran Model Problem Based Learning (PBL)
Iqbilge Dome Science Direct 2014	To determine the level of basic science process skills of students in some primary schools in Turkey.	Quantitative	Test	The results showed that the average score of basic science process skills of students is not low but not satisfactory. However, there is a positive correlation between their performances by gender, grade level, background, their economic background their mother's education, number of family members.	Differences with the thesis author of this study are that in this study correlation between science process skills were evaluated from various aspects, such as gender, class and economic background. While the equation only on the variables that discusses the subject of science process skills with elementary school students
SevilayErkol Science Direct 2014	To determine the level of capabilities of science and science process skills in the 121 teacher candidates biology teachers, between teachers and male and female teachers.	Quantitative	Test	There is no significant difference between male and female teachers candidate teacher candidate in the level of understanding of science, grade 4 teacher candidates have the level of understanding of science is higher than grade 2 student teachers and prospective teachers grade 5 is the highest value in terms of the level of scientific approaches. Also, there was no significant difference in the scientific process skills teacher candidates in terms of grade and age level.	Differences with the thesis of this study are that the authors of this study aimed to determine the capability and science process skills teacher training men and women in terms of age and grade. The differences of others are the subject of research is the prospective teacher is not an elementary school student. The equation on the variable that discusses the science process skills

III. RESULT AND DISCUSSION

VolkanHasan Kaya [9], with the title of the articles. The relationship between primary school students' scientific literacy levels and scientific process skills, this study explains that the relationship between science process skills and the level of scientific literacy of primary school students, this research is conducted with 24 students 6th grade, 21 students in grade 7 and grade 8 students 25 classes, totaling 70 students. The purpose of this study was to explore the relationship between the level of scientific literacy and scientific process skills of elementary school students The results showed that, there is a positive relationship and

statistically significant between the level of scientific literacy and scientific process skills score. Meanwhile, based on the results, students in grade 7 science literacy and science process skills are more positive than other levels. the significant difference was found between the level of scientific literacy and science process skills of students. **Anchored by the author of this thesis research**, there are several variables that can be used in my thesis research, the science process skills.

PuniaTuriman[2], with the title of the articles *Fostering the 21st Century Skills through Scientific Literacy and Science Process Skills*, This study explains that the relationship

between science process skills and literacy in science learning in the 21st century, also explained the importance how to science process skills and also for the scientific literacy as a matter of urgency to being owned by students. The purpose of this study was to explore the relationship between the level of scientific literacy and scientific process skills of students in the learning science. The results showed that there is a positive relationship between scientific literacy and scientific process skills score. The research found the fact that students will better understand the practical principles of science, through the transfer of knowledge to problems in everyday life. Furthermore, the positive attitude towards learning science itself can be fertilized and thus teamwork and social interaction can be enhanced, **Anchored by the author of this thesis research**, there are several variables that can be used in my thesis research, the science process skills.

Gabriel Gorghiu [10], with the title of the article Problem-Based Learning - An Efficient Learning Strategy In The Context Science Lessons, This study explains that the level of effectiveness of learning Problem-Based Learning Model with application modules in science learning and the implications of the implementation of Problem Based Learning model of learning in the process of science as indicated by the results of the questionnaire respondents are students. Research result, From the results, the findings of the majority of respondents believe that students or teachers can establish good communication with students through the application of PBL learning model accompanied with science learning modules. However, some students answered sometimes. From the results of tests given later served on a table show comparison between before and after the student answers PROFILE applied in science learning module implementation. Obtained results of the comparison value/figure significantly between before and after the application of PBL models accompanied by learning modules "PROFILE" **Anchored by the author of this thesis research**, there are several variables that can be used in my thesis research, namely learning Problem Based Learning Model.

IbilgeDökme [11] with the title of the article *Turkish primary school students' performance on basic science process skills*, This study explains that the level of basic science process skills of students in some primary schools in Turkey is very different. It can be seen from various aspects such as gender, class, background; their economic background their mother's education, number of family members. **Research result**, From the results, the findings of the average score of basic science process skills of students is not low but not satisfactory. However, there is a positive correlation between their performances by gender, grade level, background, their economic background their mother's education, number of family members. **Anchored by the author of this thesis research**, there are several variables that can be used in my thesis research, science process skills.

SevilayErkol[12]with the title of the article *Biology Teachers Examining Candidates' Scientific Process Skill Levels and*

*Comparing Reviews These Levels in Terms of Various Variables*This study explains that to determine the level of capabilities of science and science process skills teacher biology teacher candidates 121 are between male teachers and female teachers. **Research result**, From the results, the findings significant difference between male and female teachers candidate teacher candidate in the level of understanding of science, grade 4 teacher candidates have the level of understanding of science more high than prospective teachers and prospective teachers of grade 2 grade 5 is the highest value in terms of the level of scientific approaches. Also, there was no significant difference in the scientific process skills teacher candidates in terms of grade and age level. **Anchored by the author of this thesis research**, there are several variables that can be used in my thesis research, science process skills.

IV.CONCLUSION

The nature of science teaching in outline has three main components, namely the scientific process, scientific products, and scientific attitude. It was submitted by Takashi [1], that the activities of the Natural Sciences studied the things that must be considered by students is how students can conduct scientific process, have a scientific attitude, and create scientific products. The third component of the IPA would be obtained if students have gone through the scientific method. The scientific process basically has two types of skills that cannot be separated from one another, namely the basic skills and integrated skills. Curriculum 2013 emphasis on strengthening the learning process, in this case, the student should be able to figure out not just given out. Therefore, the stages of the learning process must be observed and emphasized to the students. The process steps described in the scientific approach which is in line with the scientific method in science learning. In science teaching not only emphasizes the mastery-mastery only products, but also the acquisition of skills and the process of scientific attitude. Skills in the science learning process are what is known by the name of the science process skills of students. Based on the five researches together to discuss relevant science process skills, but from the fifth, the above studies do not all have common connecting science process skills with other variables. The above research, examine related how the level of science process skills in prospective teachers good views of gender, age, etc., the above studies also discuss how the influence of science literacy and science process skills in students in elementary school and how the level of science process skills of students in terms of family background, economic, etc. However, of the five studies above, there is no giving treatment or solution for elementary school students who have high levels of science process skills are still low, particularly innovative solution on science teaching in primary schools. While the author examines the learning model that will be given at the elementary school in giving effect to the students' science process skills by reviewing the level of motivation to learn. My thesis research will look at how the effect of the application of PBL teaching model of the science process

skills of students who have learning motivation level high, medium, and low in students. It is expected that this thesis research will have a significant influence between learning model application and the level of students' science process skills. My thesis research will look at how the effect of the application of PBL teaching model of the science process skills of students who have learning motivation level high, medium, and low in students. It is expected that this thesis research will have a significant influence between learning model application and the level of students' science process skills. My thesis research will look at how the effect of the application of PBL teaching model of the science process skills of students who have learning motivation level high, medium, and low in students. It is expected that this thesis research will have a significant influence between learning model application and the level of students' science process skills.

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