

CHAPTER I

INTRODUCTION

A. Background

Education is a fundamental aspect of life toward national development of a country. In its implementation, education at schools is involving teachers as educators and students as learners, realized by the interaction of teaching and learning or the learning process. In this context, teachers are required to establish a systematic planning of learning activities based on the curriculum. On its implementation in the field, there is still a learning process that implements many conventional methods. By this method students only listen to the material presented by the teacher, students are passive. Meanwhile, the current curriculum requires that students take an active role in building the self-concept. Krajcik (in Brown, Lawless and Boyer, 2013) stated that within a classroom, scientific inquiry involves student-centered projects that actively engage students observing, questioning, information gathering, data analysis, explanation and communication of the results. According to the curriculum that centered on student learning, teacher as motivator and facilitator in it so that the classroom atmosphere come alive.

In the 21st century, competition in many areas of life, including education, especially science education is very rigorous. We are faced with the demands of the importance of quality human resources that are able to compete. Qualified human resources, which are produced by a qualified education, can be a main strength to overcome the problems encountered. One of the ways to be taken is through improving the quality of education. There are five preliminary definition of 21st century skills; adaptability, complex communication/social skills, non-routine problem-solving, self-management or self-development, systems thinking (National Research Education, 2010). Levy and Murnane (in National Research Education, 2010) stated that one of them is non-routine problem solving, a problem solver should uses expert thinking in recognize patterns and narrow the information to reach a diagnosis of the problem.

Now globalization has been developed, students who are able to deal to globalization with is students who are improving their mindset and students are able to

solve problems as well. Therefore education system must be able to make condition how students can become good problem solvers. Education system must be able to provide facilities for students to develop themselves, especially to solve problem. So, it is not enough that students can only work on the problems that exist in the textbooks.

Many theories and educational research experts suggest that learning will be successful when students are actively participating in the learning process. Student Active Learning Method (CBSA) is coming as a new method. One approach that accommodates learning CBSA is Problem Based Learning (PBL).

Problem-based learning (PBL) intends to provide the space for free thinking to the students to look for concepts and solve problems related to the material presented by the teacher. So, in this learning model teacher acts as facilitator (Brown, Lawless & Boyer, 2013). By using the PBL learning model students not only receive information from the teacher, because in this case the teacher as a motivator and facilitator who directs the students to be actively involved in the whole process of learning that begins with issues that related to concept.

Environment is a place where there are living things and their ecosystems within it are interconnected with each other. In the environment itself there are different kinds of living things and biota in it. But behind the living things and nonliving things in it there is always human intervention impact on the environment. Sometimes there are a positive impact, and there are also a negative impact on the environment. So, human being should solve the environmental problem to get better quality of life. Based on that problem, researcher interest to take research about how problem-based learning can improve problem solving skill in cases environment.

B. Research Problems

The research problem of this research is “How is the effect of problem-based learning toward students’ problem solving skill and students’ understanding toward ecosystem?”

From the research problem above, researcher attempt following questions:

1. How is the effect of problem-based learning on students’ problem solving skill?

2. How is the effect of problem-based learning on students' concept comprehension of ecosystem?
3. How is students' impression in learning ecosystem by problem-based learning?

C. Limitation of the Problem

The problems that are going to be researched is limited in some aspects as follow:

1. Problem-based learning syntax that presented in this learning is according to Arends (2008).
2. Problem solving skill that will be measured is fundamental principle of problem solving according to Gok (2010) those are *Identifying the Fundamental principle(s), solving, and checking or reflecting*.
3. Concept comprehension that will be measured is cognitive domain based on Benjamin Bloom Taxonomy of Educational Objectives, for this occasion is limited in knowledge (C1), comprehension (C2), applying (C3), and analyzing (C4).

D. Research Objectives

According to problem that formulated in the research problem, the research is intended to:

1. To analyze students' problem solving in science learning through implementation of problem-based learning.
2. To analyze students' understanding of concepts on the topic of ecosystem.
3. To analyze students' attitude in learning by problem-based learning.

E. The Significant of Research

This research hopefully may give some benefits. Such as:

1. For students
 - a. Students should be able to relate concepts and knowledge they have gained to
 - b. Solve problems that arise in everyday life.

- c. Students should be able to build concepts and knowledge through learning experience with problem-based learning.
2. For Teacher
Teachers should be able to develop creative ideas in science instruction.
3. For Researcher
As a precious experience that can be developed in the future for better science.
4. For next researcher
As the evidences that can be developed for the next research.