

CHAPTER I

INTRODUCTION

A. Background

Integrated science is not a new thing in Indonesia's education. Since KTSP Curriculum, Junior High School in Indonesia are expected to exist emphasis *Salingtemas* learning (science, environment, technology, and society) which is directed at integrated learning experience to design and create a masterpiece through the application of science concepts and scientific competencies to work wisely. Even though it has been cited from Indonesia's government about integrated science, but teachers still teach science separately.

Science learning in discovery learning should be carried out to develop the ability to think, to work and to behave, and to communicate science as an important aspect of life skills. Therefore science learning in Junior High School emphasizes providing direct learning experience through the use and development of scientific process skills and attitudes.

Science deals with how to find out natural phenomena systematically, so that not only the mastery the science knowledge the form of a collection of facts, concepts, or principles alone but also a process of discovery. According to the Ministry of Education in 2009, science education is directed to 'figure out' and 'do' in order to help learners to gain a deeper understanding of the nature around. Science education is also expected to be a vehicle for developing the next generation about the environment and can implicate it in daily life. Thus, teachers should be able to be a developer of science learning that emphasizes the active process of using the mind of the student mastery of concepts.

The basis of science teaching is to understanding that natural phenomena and the nature of science require inquiring and discovering. Inquiry in science consists of experiments and inquiring natural phenomena by discovery learning (Bruner, 1996; Lee et al., 2004; in Balim, 2009).

Bruner points out that any individual has the will to learn and this should be used in such activities that it should raise curiosity and direct students to study and discover the knowledge. Bruner (1961) in Balim (2009) states that learning happened by discovery which prioritizes reflection, thinking, experimenting, and exploring. People who use self-discovery in learning turn out to be more self-confident. Discovery is a way from the unknown to the known by the learners themselves (Bruner, 1966; in Balim, 2009). The active participation of the learner in the learning process is called discovery learning (Bruner, 1968; Kara & Ozgun-Koca, 2004; Kipnis, 2005; in Balim, 2009). In discovery learning, students construct knowledge based on new information and data collected by the students in an explorative learning environment.

Thinking skills in junior high school age students tend to still be on the stage of concrete. This was disclosed by observation in science learning which shows that most of the junior high school students have not been able to operate the ability to think abstractly (formal operational stage) so that students' may have difficulties in understanding science concepts and their interrelationships. The interrelationship among concepts is criteria needed in order to learn integrated science.

One of basic competences in Curriculum 2013 stated that students should show scientific attitude (curious; objective; honest; meticulously careful; diligently; carefully; responsible; open; critical; creative; innovative and caring environment) in their daily activities as a form of implementation of the attitude of observation, experiment, and discussion. Because all of public schools in Indonesia want to implement this curriculum, it is needed to orient the creative thinking skills way in the school. This way of thinking must be developed through science education. Also in daily science problem solving aspect required creative thinking in formulating, interpreting and resolving models or planning problem solving. Students develop not only knowledge and understanding, but also skills in thinking

creatively, inquiry and problem solving, and helping students to perform well and prepare for the next stage of their education.

Based on the preliminary study, some profiles of the sample class: 1) it is including a high achievement class, some of them are the highest rank in the school, 2) students were treated based on Curriculum 2006 which is already integrated, but in the subchapter still separately, 3) impression toward science was quite good, it can be seen even at the first semester the students were not really responsive to the lesson, but finally they can found how to have fun in science, 4) demonstration is often used using simple and daily demonstration to trigger students' motivation, 5) lecturing often used in this class, 6) students still think that science lesson is hard, 7) total number of students are 35, 8) school start to implement curriculum 2013 in the next academic year.

Creative thinking skill is something that rarely considered in the learning science. Teachers usually put logic as a drill point and assume that creativity is not important in science learning. Problem solving in learning essentially asks students to be a useful in the society. The background of the problem can be based on a broad topic, a matter that has been done or specific information provided by the teacher to the student. Facing the curriculum 2013, creative thinking skill exercise is needed to achieve one of its goals. Because creative thinking skill cannot be just as a gift, it also can be improved. Meidawati (2013) talked in her research that creative thinking is talking about habituality by using exercising. Many researchers assume that people are creative, but their degree of creativity is different (Beghetto & Kauffman, 2009; Craft, 2003; Isaksen, 1987; Lumdaine & Lumsdaine, 1995; Pehkonen, 1997; Solso, 1995; in Siswono, 2010). In exercising to learn creatively, students can improve their creative thinking skills. The role of the teacher is to provide the teaching and learning process to practicing students' creative thinking skills.

Through implementing discovery learning process, it is expected that the process can improve students' creative thinking skills. Students do not say again that science is hard anymore. Creative thinking skills are needed in the learning process because think creatively can make students explore more about the daily life, so that students can feel that science is part of their life besides creative thinking is one the goal of Curriculum 2013.

Based on the background of problems as well as those already described, the researcher has to conducted research with the title “**The Impact of Discovery Learning on Students' Creative Thinking Skills in Learning Integrated Science**”.

B. Research Problem

Based on the problem mentioned above, the main research problem is, "How is the impact of Discovery Learning toward Students' Creative Thinking Skills in Learning Integrated Science?".

Elaborating the research problem above, the research attempts to explore the following questions:

1. What is the improvement of discovery learning in improving the students' creative thinking skills in learning integrated science in **fluency aspect**?
2. What is the improvement of discovery learning in improving the students' creative thinking skills in learning integrated science in **flexibility aspect**?
3. What is the improvement of discovery learning in improving the students' creative thinking skills in learning integrated science in **originality aspect**?
4. What is the improvement of discovery learning in improving the students' creative thinking skills in learning integrated science in **elaboration aspect**?

C. Limitation of Problem

In order to be more focused in this research to the method of learning, the impact of creative thinking, student learning activities that implemented, then the problems as follow:

1. The learning model used was discovery learning.
2. The aspects of the creative thinking skills are fluency, flexibility, originality, and elaboration skills. These skills were assessed by using essay test.
3. Integrated science concept used was energy concept.

D. Research Objectives

This research has objectives to analyze the impact of discovery learning towards students' creative thinking skills in learning integrated science.

E. Research Benefits

The results of this study are expected to provide the following benefits:

1. Teachers

This research may add teachers' insight about using discovery learning as one of the learning approaches to implement in the class, so that learning is done more actively on students to increase students' skills and concepts by exploring the concept by themselves. Also, teachers can know the level of creative thinking skills of students, so that the teacher can know the strength and weakness of each student in exploring the concept.

2. Students

The objective of this research is that students can have new experiences in learning integrated science lessons at school in particular materials implemented using the discovery learning model, so that they can improve their understanding of science and improve their

achievement and being more motivate. Students also can enhance their creative thinking skills in solving problem.

3. Other Researchers

This research is to know the strengths and weaknesses during implementation of discovery learning model as the consideration for the next research.

F. Operational Definition

In order to prevent the misinterpretation and misconception to understand some of the terms used in this research, therefore some of it which is needs to be explained as the follow:

1. Discovery learning is a student centered activity which the students have to explore knowledge by themselves with the guide of teacher.
2. Creative thinkingskill is a skill which gained through processthat isusedwhenwebring in/bring upanew ideathathas not beendonepreviously.
3. Integrated science is one of the ways in teaching science idea in a whole science subject which is integrated and useful in daily life.