

CHAPTER 1 INTRODUCTION

1.1 Background

Today the world is in the era of globalization. In this era, competition is quite tight, especially at the quality of human resources (HR). HR Quality of a nation is determined by the level of education of the nation itself. Increasing the quality of education starting from improving the quality of learning. Improving the quality of learning can be initiated by formulating of an appropriate learning objectives, therefore the renewal of education in Indonesia must always be done because human resources are still not competitive enough.

This can be evidenced by the data from the Education for All (EFA) Global monitoring report issued by (UNESCO, 2011), that the quality of education in Indonesia has decreased from 2010, where previously the order of 65 to 69 of the 127 countries surveyed (Tureni, 2013). Many factors cause why the quality of education in Indonesia is still low. In addition to the material taught, if explored any further, students of Indonesia is very difficult to solve the problem when the students have to face questions that require in to high-level thinking skills. One of the reasons is that most learning in Indonesia being done with less chance to students to able to think critically.

Beside, the education system in Indonesia is still focused on the exam. Therefore practice of teaching focuses on subject content and ignore the development of students' thinking skills (Soedjadi, 2000; Rohaeti, 2010). Most of the teaching and learning process that takes place in school is the lecture method, which is based on memorization of facts that leads students to think less critical (Ziedler, 2002). Thus, negligence of the importance of thinking skills in teaching and learning affects students' ability to think (Zohar & Dori, 2003). This leads to students' thinking ability in Indonesia is in low level. Low ability among Indonesian students is shown by the study of TIMSS 2011 and PISA 2012.

Higher order thinking skill really important to students in order to face the real life problems. Because complex real-life problems often demand complex

solutions, which are obtained through higher level thinking processes. Beside it, teaching higher order thinking, then, provides students with relevant life skills and offers them an added benefit of helping them improve their content knowledge, lower order thinking, and self-esteem.(R. De Vries, 1987)

The reason why higher order thinking skills need to be improved because basically, higher order thinking skills include critical, logical, reflective, metacognitive, and creative thinking. They are activated when individuals encounter unfamiliar problems, uncertainties, questions, or dilemmas in real life

Unfortunately, critical thinking is not effectively taught in a traditional school environment that relies on the rote memorization and didactic teaching methods and approach. Therefore, education professionals should develop a variety of programs, teaching methods or approaches a lesson to teach critical thinking. One learning model to improve students higher order thinking skill is socio-scientific issues. According to Ratcliffe and (Grace, 2003) socio-scientific issues model are said to be vehicles, not only for raising students' interests in science, but also for strengthening generic skills as team-work, problem-solving and media literacy. At the same time, these skills are a presumption for successful work with socio-scientific issues (Jarman & Mc Clune, 2007). Researches have showed that such issues challenge students' rational, social and emotional, and higher order thinking skills (Sadler, 2004).

However, several problematic factors are identified, such as students easily can be distracted when they are working with complex issues, where the outcome often is not clear (Zeidler et al, 2005). For this case the using of intervention while student doing the discussion about socio-scientific issues in the class to lead the student for clearer outcome.

According to (Cobb et al, 1998), environmental science needs to be integrated with social science - e.g. biology in order to create new ideas of how environment works. Since environmental science for example in conservation becoming one of the most discussing topic now a day, Students really demanded to develop appropriate solutions to important environmental issues, think in critical ways,

take suitable actions, and participate effectively in both local and global environmental problems that why this topic is suitable to increase student higher order thinking skill using socio-scientific issues learning model.

1.2 Problem Identification

Based on the background above, problem identification in this research are follow :

1. Teaching and learning process is still using conventional method and discussion.
2. Indonesian students' analytical and high order thinking is still low and cannot solve a problem related to Issues problem based on science.
3. Socio-science issued model is still rarely doing in the class, whereas social problem is the most common problem now a day in 21st century for students.
4. Complex real-life problems often demand complex solutions, which are needing solution through higher level thinking processes that will be facing by students.

1.3 The Scoop of Research

In this research, the research problem definition is:

1. Analytical and high order thinking in this research is ability of student to Analyzing the socio-science issue, evaluating the socio science issues and creating or synthesizing the problem solving of socioscience issue
2. Learning in this research done in socio-science based on intervention as experiment class and conventional learning as control class.
3. Students' high order thinking in this research restricted on cognitive domain based on bloom taxonomy including; analysis (C4), evaluation (C5), and creation (C6) at Conservation topic.

1.4 Research questions :

Based on the background and research scope, research question can be formulated as follow:

1. Is there any effect of socio-science issues-based on intervention model on students' science process skill and high order thinking skills ?
2. Is there any effect of socio-science issues-based on intervention model on biological conservation topic in class ?

1.5. Research Objectives

Based on the formulation of the problem above, the objective of this research is to determine:

1. The effect of socio-science issues based on intervention model on students' analysis and high order thinking skills.
2. The effect of socioscience issues-based on intervention model on problem solving about biological conservation topic in class.

1.6 Significances of research

Practically, the significance of the research study namely socioscience issues-based on intervention model, this research can help to increase students' analysis and high order thinking skills and beside it another advantage is for the class management in student grouping to make learning activity more active and easy for students to get mastery of concept and process in subject matter. For students, this research will be make students more active in learning process and increasing their ability to find out the material learning by themselves. For the next researcher this research useful as the references. For the researcher, as an input and motivation to carry out the profession as a teacher in the future.