

CHAPTER I INTRODUCTION

1.1 Background

Learning is an active activity of students in building meaning and understanding. The responsibility of learning remains in the students, while the teacher is responsible for designing and creating pleasant learning conditions so as to encourage student's motivation and responsibility for lifelong learning (Muslich, 2007). Teacher can encourage students by knowing their problem in the learning process. One of the problems in the learning process is students are not able to understand the learning materials. Students focus only on rote without being followed by a deep understanding (Muslich, 2007). The students need to understand their learning to use it in their own life.

Textbook is a significant tool for learning. Based on Ariningrum (2013), textbook is one of the most important variables that support learning process, curriculum and instruction to improve students' scientific ability. In the regulation of the Minister of Education and Culture No. 65, 2001 on the standard process stated that the process of learning this time using learning with scientific approach, integrated thematic and thematic learning (Pendidikbud, 2013). A textbook as a guiding tool for the student need to contain clear instruction and scientific approach.

Scientific approach is a method to seeking knowledge that involves forming hypothesis (Rodger, 2006), which can be used to find answers that are logical and supported by evidence (Qarareh, 2012). Scientific approach is characterized by the projection of the dimension of observation, reasoning, discovery, validation, and explanation of a truth which must be carried out by guided values, principles, or scientific criteria. The scientific approach is a student-centered approach and conducted with five learning steps relevant to Bruner, Piaget, and Vygotsky learning theories which is observing, asking, gathering information, associating and communicating.

These five stages are considered to be able to convey the learners to improve their scientific ability and thinking skills. Sujawanta (2011) also showed that by using scientific methods, scientists try to let reality speak for themselves, discuss supporting theories when the predictions of this theory have been confirmed and opposed to theories when their predictions proved untested. Gagne in Surjawanta (2011) also mentioned that by developing scientific capabilities, children will be creative, able to discover and develop his own facts and concepts, as well as cultivate and develop attitudes.

Based on the study above, to support the learning process and students' science skills, researcher will develop student's textbooks especially Biology textbook based on a scientific approach. Biology textbook that would be developed is *Biology untuk SMA/MA Kelas XI Peminatan Matematika dan Ilmu Alam*. This textbook provides the concept maps, key words, discussion, activity, quiz, Biology concept, individual task, religious value, summary, Bio-Supplement, test (Irnanigtyas and Istiadi, 2015). Based on the content of the textbook, it can be great resources but the student will find it difficult as guide to learn by themselves. The developed textbook based on scientific approach would help the students to have great performance scientifically.

Based on the background describe above, the author is interested to conduct the research with title "The Development of Biology Textbook Based On Scientific Approach On Digestive System And Circulatory System Topic For Grade XI Science Program

1.2 Problem Identification

Based on the background above, then the problem identification of this study are as follows:

1. Teachers tend to use student-centered learning systems without using a scientific approach.
2. The textbook of Biology graded XI needs instruction to guide the student scientific learning.

1.3 The Scope of Study

The formulations of this research problem are:

1. The development of textbook based on scientific approach in digestive system and circulatory system for grade xi science program.
2. The increase of scientific approach of student's in digestive system and circulatory system for grade science program

1.4 Research Questions

In this study, the research questions are as follow:

1. Will the developed Biology textbook chapter on topic "circulatory system" using scientific approach fulfill the eligibility criteria of content feasibility st by BNSP?
2. Will the developed Biology textbook chapter on topic "digestive system" using scientific approach fulfill the eligibility criteria of content feasibility st by BNSP?
3. Will the developed Biology textbook chapter on topic circulatory and digestive system using scientific approach fulfill the eligibility criteria of design feasibility st by BNSP?

1.5 Research Questions

There are three research objectives to describe what we expect to achieve by a research, they are:

1. To know whether the developed Biology textbook chapter on topic “circulatory system” using scientific approach fulfill the eligibility criteria of content feasibility st by BNSP?
2. To know whether the developed Biology textbook chapter on topic “digestive system” using scientific approach fulfill the eligibility criteria of content feasibility st by BNSP?
3. To know whether the developed Biology textbook chapter on topic circulatory and digestive system using scientific approach fulfill the eligibility criteria of design feasibility st by BNSP?

1.6 Benefits of Research

Practically, the significances of the research namely for the learner in order to using the textbook which developed based on scientific approach then they can master the concepts easier and also to increase the efficiency and quality of biology learning materials as example digestive system and circulatory system in high school for grade XI science program. For educators, in order to apply more inovative the learning materials that able to overcomes student’s difficulties problem in understanding bi