

## CHAPTER I

### INTRODUCTION

#### 1.1 Problem Background

Learning as an enduring change in behaviour, or in the capacity to behave in a given fashion, which results from practice or other forms of experience (Schunk, 2012). Actually there is no one definition of learning that is universally accepted by theorists, researchers, and practitioners. Best point of learning is changing from do not know become know about some materials.

Science is boring for many students (Ebenezer, 1993). Difficult, not relevant to people's lives, more attractive to boys, and less interesting to older students (Ramsden, 1998). These conclusions cannot, however, be generalized to all the sciences. There are differences in attitudes toward physical and biological sciences. Physical sciences are receive more negative views than biological sciences (Ramsden, 1998). Boys express more positive attitudes about physical sciences, but girls were found to be more interested in biology than boys (Barram et al, 2006).

Biology is a unique discipline where experiments with living organisms can take place both in the laboratory and in the field. However, increasing use of virtual environments instead of practical investigations in biology has recently been documented (Partridge, 2003). How do students regard biology compared with other subjects? Do boys and girls prefer different topics? Several studies have been concerned with attitudes toward particular disciplines like physics (e.g. Angell et al, 2004) or chemistry (e.g. Salta and Tzougraki, 2004) but few studies have focused on students attitudes toward biology. Moreover, the majority of investigations were carried out with single-age classes which did not examine possible effects of curriculum progress on students' attitudinal changes. Information about students' interests may help teachers to devise strategies to enhance students interest in biology (Uitto et al, 2006).

(Pavol, 2007) reported that a majority of the students (57%), however do not want to have biology lessons more frequently. Although 16% of the respondents stated that they hate biology lessons, the nature, and biology subjects

have not been found as “strange” by 68% of respondents. One of the most striking results of this dimension is that, most of the students (83%) enjoy working with living organisms during lessons. 47% of the students agreed that learning biology improves the quality of life, 33% of them stated that they do not know the answer. All items of dimension were significantly and positively correlated with each other. Evaluation showed that the highest score was obtained for the item which asks about the necessity of biology knowledge for understanding of other courses. And that the lowest was belong to the item which states that, biology is helpful to develop conceptual skills. The importance of biology can summarized as that, they believe in the importance of knowledge of biology, but according to them, biology is not one of the essential issued of their own lives.

Since the 1970s there is a consensus that environmental education (EE) is crucial for achieving the goals of sustainable development, by creating an environmentally literate citizenry capable and motivated towards environmentally responsible lifestyles (UNESCO-UNEP, 1992). The magnitude of this challenge is such that in 2005, UNESCO launched the Decade of Education for Sustainable Development. Underlying this is the understanding that education is the driving force for the change needed (UNESCO, 2005a).

Attitude is a mental state of readiness that influences the individuals’ response to everything it is related to. Schultz and Zelezny (2000) say that the attitude of concern for the environment originates from individual’s concept of self and from the degree of perceiving himself as a fundamental part of natural environment. Behavior is what people do, if it is environmentally appropriate or not (Hernandez, 2000). Behavior is generally supported by the knowledge and attitude, but the direct connection from knowledge to attitude and on to the behavior does not always exist (Monroe, 2000).

As efforts to intensify environmental education in schools have continued to increase over the years, a considerable number and variety of claims have been raised severally concerning the inability of the students to participate in environmental action. In 1991, for example, the Minister for Environment and Natural Resources voiced his concern for the lack of practical conservation principles in the students’ daily activities (Kenya Times, Nairobi, 19 August,

1991). Similar observations have been made in other parts of the World (Tubianosa et al, 1995). It is becoming increasingly necessary to see the evidence supporting these claims.

Research dealing with students' participation in environmental action has tended to focus on the products in the environment rather than on the process involved in arriving at such action. The studies done by Buskov (1991), Pieters (1991), Sutti (1991), Gagliardi and Alfhtan (1994) are valid examples. Most of these researchers employed the systems analysis approach that focuses on easily quantifiable variables relating to the quality of the products arising from environmental action projects as directed by the teachers. Data produced in this way may not necessarily provide an insight into the process of students' participation in environmental action. As Emmons (1997) observes, the relationship between environmental education and positive environmental action is a complex one and requires a deeper understanding of the contributing factors. This is because a behavioral manipulation of many variables can result in students' participation in environmental action in the manner that is pedagogically undesirable. Research designs that elicit phenomenological data could help us understand students' participation in sustaining and improving environmental quality.

In Faculty Mathematic and Natural Science (FMIPA) State University of Medan, after observation and interview directly, there are students still littering, the trash is still in the classroom, and also around building in FMIPA. The researcher gave 10 questions to 40 students in FMIPA State University of Medan. The question is the form of essay test which include about knowledge and attitude of students which relates to General Biology 2 (Appendix 4). After the students answer the questions, there are still 32.5% of students who understand about General Biology 2 topics, 20% of students are middle, and 47.5% of students are low about General Biology 2. Some of students says the lecturer variation way of learning general biology is lack where class condition and learning process is rigid.

General biology as the one of subject matter which learn by students of Faculty Mathematic and Natural Science (FMIPA) State University of Medan.

Where its including mathematic, physic, chemistry, and biology students. Because of it researcher want to know about knowledge and attitudes of students FMIPA about General Biology 2 focused on environmental biology.

Based on the background described above, the researcher think that it is necessary to conduct the research about **“Analysis of Knowledge and Attitudes toward General Biology of Faculty Mathematics and Natural Sciences’ Students State University of Medan”**.

### **1.2 Problem Identification**

Based on the background description above, researcher identified the research problem as follows:

1. General biology is learn by all students in Faculty Mathematic and Natural Sciences State University of Medan.
2. Students less action for saving environment.
3. Students are still throwing rubbish around classroom.
4. Students less understanding about General Biology 2.
5. Lecturer lack variation way to learn about General Biology 2.

### **1.3 Problem Scooping**

In order to obtain an appropriate discussion, the research has some limitations as follows:

1. Students knowledge and focuses on General Biology 2 only in 4<sup>th</sup> semester faculty mathematic and natural sciences students for education class State University of Medan 2015/2016.
2. Students attitudes toward General Biology 2 subject matter only in 4<sup>th</sup> semester faculty mathematic and natural sciences students for education class State University of Medan 2015/2016.
3. General Biology subject matter is about environmental biology (General Biology 2).
4. Data collecting tool of General Biology 2 just focuses on the cognitive aspect.

5. Questionnaire is validated by lecturer of General Biology 2 and qualified about education and evaluation. Ideally about attitude test is validated by lecturer of Education Sciences of Faculty like psychology lecturer.

#### 1.4 Research Question

There are some questions of this research as follows:

1. How does the students' knowledge toward General Biology 2 of 4<sup>th</sup> semester mathematic, physic, chemistry, and biology department State University of Medan?
2. How does the students' attitudes toward General Biology 2 of 4<sup>th</sup> semester mathematic, physic, chemistry, and biology department State University of Medan?

#### 1.5 Research Objectives

This research is conducted to achieve some objectives as follows:

1. To know students' knowledge toward General Biology 2 in the 4<sup>th</sup> semester of mathematic, physic, chemistry, and biology department State University of Medan.
2. To know students' attitudes toward General Biology 2 in the 4<sup>th</sup> semester of mathematic, physic, chemistry, and biology department State University of Medan.

#### 1.6 Research Benefits

Considering about the research result and discussion, this research expected has significant beneficial both theoretical and practical. **Theoretically**, this research by hope has some significant benefit, as follows; as additional reference for biology lecturer about students' understanding and attitudes toward General Biology 2, as motivation to the biology lecturer to improve the way to teach General Biology 2, and being reference to conduct further research. Meanwhile, **practically** as reference for develop meaningful learning process focused on General Biology 2.

### 1.7 Operational Definition

To get same perception and avoid the difference of interpretation of some terms in this research, it will be necessary to explain some terms that are used.

1. Analysis as the process of breaking down a something into its parts to learn what they do and how they relate to one another.
2. Knowledge is the products of inquiry, and can be considered either as a collection of information, or as an activity, or as a potential. As understanding of students on General Biology 2.
3. Attitudes as a psychological tendency to view a particular object or behavior with a degree of favor or disfavor, related to activity of students in daily life.
4. General Biology 2 as one of subject matter that learn by students in Faculty Mathematic and Natural Sciences (FMIPA) State University of Medan focused on environmental biology.