

## CHAPTER I

### INTRODUCTION

#### 1.1 Problem Statement

The quality of education in Indonesia is not so good. According to the Education For All Global Monitoring Report 2012 issued by UNESCO, education Indonesia is ranked 64th for education worldwide from 120 countries. Data Education Development Index (EDI), Indonesia, in 2011 Indonesia was ranked 69th out of 127 countries.

The author conducted interviews to class X SMA N 1 Sidikalang to search according to a variety of learning difficulties biology students. Some of the reasons given are as follows: (1) biology is difficult to understand for many memorizing Latin, (2) lack of facilities and equipment in the laboratory so that inhibit students' knowledge, 3) questions given by the teacher is very difficult. While teachers complained: (1) weakness of mastery concepts of biology, (2) students lack enthusiasm for learning in the classroom (3) the participation of students in the class in the following subjects is very low. Based on the interviews that have been conducted and reflection on learning is done, the author realized that the authors also observed a class in the teaching process when field experience (PPL) precisely in SMA Negeri 1 Sidikalang that learning biology was still stiff and unpleasant. Teachers also still tend to apply a teacher-centered learning and provides exercises that much in an effort to improve the ability of students accomplishing about the UN, and SBMPTN.

Based on the fact that the authors obtained from the interview with subject teacher of biology in high school during Field Experience Program (PPL) time in SMA Negeri 1 Sidikalang, students tend more to memorize the concepts, theories, and principle without interpret the acquisition process. Learning with the lecture method causes less active of students in the teaching -learning process. Directed learning to memorize therefore, students are theoretically clever but poor in application. Teachers have been applied some learning model such discussions method, but the result not show progress, students held discussions method tends

inactive and can't express their opinion, it just some students are active on discussion, while others tend to rely on students are usually active in the class.

From the research of unstructured interviews the teachers biology at the school, but the fact the field indicate that many students who have difficulty studying biology. This learning difficulties impact directly or indirectly on students' interest and motivation of the subjects of biology, as a result of teachers have many difficulties to focus the attention of students in the learning process. This causes the interest and motivation of students to study biological sciences lower result in the poor quality of processes and student learning outcomes.

Ecosystem is learning about the concept, facts and process. Most students know and understand the subject matter in concept only, and poor in process, and the difficulty of students in studying this topic memebedakan some students can not use the terms habitat, niche, individual, population, community, ecosystem, biotic and abiotic factors and the students can not link the relationship between the types of ecosystems with biotic and abiotic environmental conditions. this is cause the students low in order to understanding the relationship between the subject matter concept and application in daily live. Finally this given an impact to the students learning outcomes roomates is still low and poor science process skills.

As well as the facts discovered in student learning outcomes Biology in SMA Negeri 1 Sidikalang still unsatisfactory. Grade X-1 is the difficulty in understanding the material on the material especially its of the ecosystem, the ecosystem material is material that reached the lowest value among all topics in grade X . Facts finding in grade X-1 students remedial lessons during the daily tests on the topic of the ecosystem by KKM (minimum completeness criteria) 79. the students who pass the daily tests reached KKM initially as many as 11 students (32%) graduated from 34 the number of students. and a second daily test as many as 15 students (44%) were completed and a third daily test as many as 18 students (53%). Student learning outcomes are still low. Various efforts have been made by teachers to improve the quality of learning of biology, ranging from improved planning and training.

To deal with this problem needs to be implemented innovative learning models that can increase the ability of science process skill and students learning outcomes. Discovery learning can be used as an alternative that is expected to develop scientific process skill of students in subjects of biology that will enhance the learning outcomes as well.

Ruseffendi (1984) suggests that the discovery method is a method of teaching arranged to make children acquire knowledge that they previously did not already know was not through notification, in which some or all of the knowledge found himself with the help of a teacher. In line with Ruseffendi, reveals that discovery is mental processes so that students are able to assimilate a concept or principle. Mental processes are, among others: observing, digesting, understanding, classifying, making allegations, explaining, measuring, making inferences and so on . It is expected that if the students are actively involved in finding a basic principle of their own, they will understand the concept better, remember longer and be able to use it into another context.

Discovery learning is a technique of inquiry-based learning and is considered a constructivist based approach to education. It is supported by the work of learning theorists and psychologists Jean Piaget, Jerome Bruner, and Seymour Papert. Although this form of instruction has great popularity, there is some debate in the literature concerning its efficacy (Mayer, 2004).

Bruner argues that "Practice in discovering for oneself teaches one to acquire information in a way that makes that information more readily viable in In a book summarizing much of the research on discovery methods, found that guided discovery is generally more effective than pure discovery in promoting learning and transfer to new problems. Apparently, some students do not learn the rule or principle under pure discovery methods, so some appropriate amount of guidance is required to help students mentally construct the desired learning outcome. Guided discovery is effective because it helps students meet two important criteria for active learning: (a) activating or constructing appropriate knowledge to be used for making sense of new incoming information and (b) integrating new incoming information with an appropriate knowledge base.

According Borthick and Jones (2000) states that in learning discovery, participants learn to identify problems, solutions, seeking information relevant, develop solution strategies, and implement the chosen strategy. In collaborative discovery learning, participants are immersed in a community of practice, solve problems together. Hoffman (2000) discovery learning is a teaching strategy that can instructor utilized to increase student engagement and relevance. There are five learning the invention comprises: a case-based learning; incidental learning; learn to explore; learning by reflection; and simulation-based learning alone, or in combination, which can be applied to activities and teaching skills.

The Discovery Learning more emphasis on the discovery of a concept or principle that were previously unknown. The difference with the discovery is that the problems that confronted discovery to students some sort of problem that is engineered by the teacher, while on inquiry the problem is not the result of engineering, so students must put all thoughts and skills to get the findings in the matter through the research process.

Discovery learning can be used as alternative models in order to improve students' science skill process and increase students' learning outcome. Discovery learning model will be guided the students to find out information bt themselves, this also influence their science skill process including: students ability to describe result observation, classification, predict, interprest, field questions, plan experiments, applying concept and communicating.

Based on the problem statement that describe above, the research had been conducted with title “improving learning outcomes and science skill process in biology with scientific approach discovery learning on ecosystem topic grade X SMA Negeri 1 Sidikalang”.

## **1.2 Problem Scope**

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

1. Students' Learning outcome in SMA Negeri 1 Sidikalang is still under standard and didn't pass Minimum Competences Criteria (KKM).

2. Teaching and learning process is still using conventional method and discussion.
3. Science Process Skill in teaching-learning process is still low

### **1.3 Scope of the Study**

Based on the background and identify the problems noted above, there are many factors that affect student learning outcomes in subjects Ecosystem. so the researchers focused on the research it conducted restrictions on the problem. In this study, the problem is limited to the problem improving learning outcomes and science skill process in biology with scientific approach discovery learning on ecosystem topic grade X SMA Negeri 1 Sidikalang Academic year 2015/2016.

### **1.4 Research Question**

Based on the problem definition above, the proposed formulation of the problem as follows:

1. Is the model of discovery learning can improve students' learning outcomes in biology on ecosystem topic grade X SMA Negeri 1 Sidikalang ?
2. Is the model of discovery learning can improve students' science skill process in biology on ecosystem topic grade X SMA Negeri 1 Sidikalang ?

### **1.5 Research Aim**

The purpose of this study is to :

1. Improve students' learning outcomes at topic Ecosystem by using Discovery learning model Class X SMA Negeri 1 Sidikalang
2. Improve students' science process skills at topic Ecosystem by using Discovery Learning Class X SMA N 1 Sidikalang.

### 1.6 Significant of research

Practically , the significance of the research study namely, for the teacher , this research can help to increase class management in students 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 research this research useful as the references. For the research, as an input and motivation to carry out the profession as a teacher in tthe future.

