

## CHAPTER I

### INTRODUCTION

#### 1.1 Background

Education has a very important role in order to generate fully human resource both as individuals and as a society. Education quality in Indonesia must be improved in order to reach a goal in the form of changes in behavior, knowledge, and skills in self-learners.

In pasal 3 UU No.20 Tahun 2003 on Sistem Pendidikan Nasional (UUSPN) stated that the function of Education is to develop skills and form the character and civilization of a dignified nation in the context of the intellectual life of the nation. As one component of the success of the students, then the school should be able to achieve its objectives. Success or failure of educational attainment lot depends on how the learning process experienced by students as learners. Atmosphere of learning and use directed learning so that learners can develop their potential (Sanjaya, 2008). This means that the educational process must be oriented to students (student active learning).

Physics is a part of the Natural Sciences (IPA) is an object of interesting subject matter and more requires an understanding of the pronunciation, comprehension rather than memorization, understanding the physics knowledge through learning activities will be the cornerstone mastery of Science and Technology (science and technology), and a lower level of education to the next level. Learning science of physics is often viewed as an abstract science theories presented in the form of a less appealing and seem tough, assume that physics is so difficult to be understood and mastered. Learning physics has the objective to solve the problems faced by students in order to have a broader view and to have respect for the usefulness of physics as part of the natural sciences and technology (science and technology). But, reports from various print and electronic media showed unsatisfactory results on students' learning outcomes physics.

Physics is one part of the Natural Sciences (IPA), which is the study of symptoms, events, or natural phenomena, as well as uncovering the secrets of the law of the universe. Physics objects include characters, symptoms, and events or contained in inanimate objects or objects that do not do the development themselves. Physics is one branch of Natural Sciences (IPA) which underlie the development of advanced technologies and the concept of living in harmony with nature. Physics itself is not just a science that studies the phenomena of nature but more than that, physics is a science that requires understanding rather than memorization. But the fact that many students who do not like physics. This can be seen when the applicant PPLT practice that, in most of the students have developed a strong impression that physics is a difficult subject to understand or less attractive.

Based on the curriculum of the educational unit level (Mulyasa, 2006:105) groups of subjects especially physics Natural Sciences at the SMA / MA / SMALB, aims to develop a logical, and analytical thinking skills of learners. Learn the following: Develop and apply information, knowledge and technologies in a logical, critical, creative, innovative and independently; Indicates competitive attitude, sportsmanship, and work ethic to get the best results in the field of science and technology, as well as Demonstrated ability to analyze and solve problems complex.

To achieve the goals listed based In pasal 3 UU No.20 Tahun 2003 on Sistem Pendidikan Nasional (UUSPN) is not as easy as imagined. Many problems which can be categorized as factors inhibiting the achievement of these goals. These problems not only come from the teacher but also from the students and even the school itself. The problem that is often experienced by students include: many students who consider physics as a scamed subject. Many of those who do not like physics and physics considered not only as a subject but also by product. They assume that physics is a difficult and boring subject. Too many students are formulas so difficult to remember these formulas. The problem often comes from teachers regarding the model and teaching methods in staticly which eventually

became the reason why physics lessons into lessons that boring, besides teachers emphasize understanding of mathematical formulas concerning the teacher is not only able to apply the concept of understanding in students. So the presumption arises ultimately on students that physics is only suitable subjects studied by those who wanted to be a scientist or a physicist detail .Such problems are also likely to be found in the high school SMA Negeri 1 Tebing researcher were obtained based on interviews and observations of researchers to teachers of physics as well with students, of which about 80 to 90% of students are less interested in the physics, and there is also students tend to memorize concepts and less able to use these concepts if they meet a problem in real life, but it is also less creative teachers in teaching, that teachers are less able to vary the learning model used. There are some of reason that make students got a lower on learning outcomes in classromm : Students do not like physics. Physics student learning outcomes are unsatisfactory. Learning model that is less varied. Teacher-centered learning. Students doesn't understand how to connect physics' concept in technology. Student doesn't know an application of physics'concept in daily life. Student only take some exercises in classroom and less information about physics matter. Students doesn't understand about physics experiment because their teacher almost never take an experiment in physics' laboratory. Teacher don't take some media to teach in classroom. Learning process only focused at one source from its school. From interviews with students note that the method often used is such as lectures, discussion, take notes, and work on the problems one by one or the so-called conventional methods. In the process of learning all the activities centered on the teacher. There is no interaction between the students in terms of giving their opinions. Students just crammed explanation by the teacher at each of the learning process, causing students to be passive. In addition, the conventional learning methods students are not trained to understand a concept that departs from a problem that can be encountered in everyday life One impact of these problems is a mediocre student learning outcomes. Given the value of the average physics class XI science first semester is 75 have a mediocre value with minimal completeness criteria in physics is 75.Eventough, the learning outcomes are not

satisfactory. And based on an observation of XI-IPA 4 and XI-IPA 5 is gotten that 50 % their teacher sometimes give them physics problem that related to daily activity and daily technology. Hence, they still understand the application of physics concept in their daily activities and daily technology. Based on some of the problems encountered, the applicant seeks to provide a solution that begins with varying learning methods are used in schools. The methods offer researchers the case study method. This method of form description of the problem, event, or situation, then the student was assigned to look for alternative solutions. Then this method can also be used to develop critical thinking and find new solutions of a topic is solved. This method can be developed or applied to students, when the students have knowledge about this issue (Martinis, 2008).

Case Study is a way of giving students the chance to perform tasks based on direct instructions, issues, events, or situations that have been prepared teachers. After that the students are tasked to find an alternative solution. In performing this task the students can gain hands-on experience and real. Tasks can be assigned in groups or individually. Through this method, students can develop the skills and habituation to an independent, honest, develop critical thinking the pattern and find a new solution of a task to be solved. This method can be applied when the student has had prior knowledge about the issues presented.

The advantage to using the case method is to observe, think, and act in dealing with certain situations they believe what is observed and found many ways to escape observation and search it. Besides Shiva can know by observation that perfect real picture that really happened in his life so that they can learn with interest and more detailed problem.

While the weakness of the case method is to group activities require more physical facilities and had a lot of cases, and teacher takes a lot of time to prepare the case material encountered and instructions on how to solve that required students.

According to research ever undertaken by Larissa Fradkin many students who enter high in the UK have a different background, it could be very difficult to conduct learning activities since the beginning of understanding that students are not the same. Using the Socratic method, this method is used to determine the difficulties experienced by these students. The same was delivered by Neil Sheflin, in his experience while using the Socratic Dialogue can create an active student and ask the student to learn more. Thus the Socratic dialogue is used to establish a common knowledge among students by asking each other so that we can know where the lack of understanding of these learners.

Over time and development of technology used Socratic dialogue in distance learning or by oline class. By using online media (Online Class) teaching and learning process can happen very well. This is due to the time used for direct face-to-face is not possible with a long time but with the online class this is not an obstacle.

By using asking techniqe, many things that can be felt by learners such as fear, curiosity, challenge, satisfaction, engagement, and others. With the assessment of each of these questions can make learners have a hand in every problem. Actually Socratic dialogue is used to form active beta students and formed his own knowledge on the basis of the questions asked. Therefore, educators need to develop knowledge to be able to ask questions that could provoke curiosity educates participants.

If the case method and dialogue Socrates being grown in physics learning allows students to think critically, skilled and learn more. Because many of the problems to be solved. Moreover, its application in the study of physics very much. And ready to be asked in each problem. Therefore, teachers are expected to have more information and wide, in order to explain to the student, if the student can not solve the problem.

Using the case method to teach online classes introduce environment-centered learning culture. By learning-centered, referring to the students develop their own responsibility for their learning. The instructor is a facilitator and further

refines the skills of critical thinking and analysis. Using the case method allows the balance of power between teachers and students. In addition, the cases are very motivated as demonstrated by an increase in meetings. Instructors have a lot of information to make the case. For experienced students, they can be challenged to see the other side to a topic, thereby enabling further improvement of their minds on the issue of this case. Case method can be a good tool to stimulate students to think about the step-by-step planning.

Accordingly, prospective investigators try to do research by maximizing the case study method. Based on the description above, applicants interested in conducting research entitled "**The Comparison of Student Learning Outcomes of Fluid Using Case Study and Conventional Method of Class XI SMA Negeri 1 Tebing Tinggi Academic Year 2012/2013**".

## **1.2 Problem Identification**

Based on the background of the above problem, then the problem can be identified as follows:

1. Students do not like physics.
2. Physics student learning outcomes are unsatisfactory.
3. Learning model that is less varied.
4. Teacher-centered learning.
5. Students doesn't understand how to connect physics' concept in technology.
6. Student doesn't know an application of physics' concept in daily life.
7. Student only take some exercises in classroom and less information about physics matter.
8. Students doesn't understand about physics experiment because their teacher almost never take an experiment in physics' laboratory.
9. Teacher don't take some media to teach in classroom.
10. Learning process only focused at one source from its school.

### **1.3 Limitation Problem**

Given the extent of the problem in learning is a necessary limitation in this study as follows:

1. Using Case Study method of fluid topic because students doesn't understand about physics experiment because their teacher almost never take an experiment in physics' laboratory.
2. To improve student knowledge of relating physics concept in technology and daily life because Student only take some exercises in classroom and less information about physics matter.

### **1.4 Problem Formulation**

In this study, the formulation of the problem is:

1. How is student learning outcomes with case study and conventional learning method of Fluid in SMA Negeri 1 Tebing Tinggi Class XI Academic Year 2012/2013 based on problem formulation that stated "Physics student learning outcomes are unsatisfactory".
2. Is there any difference in student learning outcomes are taught with case study method with students who are taught by the conventional learning method based on problem formulation that stated that "Students do not like physics".

### **1.5 Research Objectives**

From the formulation of the problem, the purpose of this study is:

1. To determine student learning outcomes using case study and conventional method of fluid of Class XI SMA Negeri 1 Tebing Tinggi Academic Year 2012/2013.

2. To determine differences of student learning outcomes using case study and conventional method of fluid of Class XI SMA Negeri 1 Tebing Tinggi Academic Year 2012/2013

### **1.6 Benefits of Research**

The benefits of this research are:

1. As a ground for researchers in conducting research.
2. Adding to the experience for researchers in improving student learning outcomes based learning using case studies.
3. As consideration for other researchers to examine the same issue in a different location and As an alternative informational materials for physics teachers in selecting models or learning methods