CHAPTER I
INTRODUCTION

1.1. Background

Education is a requirement that must be met in the process of life. Progress of a nation is influenced by the quality of education of the nation itself because education can produce high-quality human resources. Education here means in formal, covering teaching and learning process involving teachers and students. Improving the quality of education is reflected by student achievement. While the student achievement is influenced by the quality of education is good. Due to good quality education that will lead students to improve learning achievement better. A good quality of education in a country indicate of success in education sector development in that country. There are many influences to improving the quality of education, one of them is the application of models or learning methods. In Indonesia, the quality of national education still under the national standard. This matter can be seen from the student's achievement especially chemistry in senior high school.

Many factors cause the quality of education in Indonesia is still under standard. One of them is the selection of the model or the lack of proper learning methods are conducted by subject teachers. Mistakes can lead to the selection of learning methods do not achieve the goal of teaching. Most teachers still use conventional method, therefore student's achievement is low because students no interested in learning, they feel bored. Based on my observation (2013) that is done in school SMA Negeri 11 Medan shows that student's achievement in senior high school especially chemistry. Where there are many students who have value lower than KKM, it is about 55%. The value which is should get by students is about 68. Based on that in averaging value shown that teaching chemistry was not maximal yet to get a good result.

In terms of improving the quality of education in Indonesia, the government also has made several attempts to change one of them with the curriculum. For now, the government changed the curriculum of the KTSP into the curriculum 2013. Where the 2013 curriculum requires active students in the assessment of affective, cognitive, and psychomotor.

Based curriculum 2013 that aims to prepare Indonesian people that have the ability to live as individuals and citizens who believe, productive, creative, innovative, and affective and able to contribute to society, nation, state, and civilization of the world, so that students are required to develop a balance between spiritual attitudes and social development, curiosity, creativity,

cooperation with intellectual and psychomotor abilities (Regulation minister of education and culture No. 69 of 2013).

Therefore, the selection of models or learning methods appropriate a requirement that must be met by an educator. The use of the method is necessary in order to the giving of material or instructional materials achieved well. Learning is related to the success of the learning process that the outcome will determine the student achievement that will be achieved. Therefore, in choosing learning methods or learning, a teacher must pay attention to several things; conformity with the purpose of learning methods and teaching materials, teaching methods and conformance with environmental education. The selection of models / methods of learning based on the curriculum 2013 also saw the character of students that can be developed from the subject matter that we teach. Learning model contained in the curriculum 2013 among others, the model of problem based learning (PBL), discovery learning, and project-based learning. According Suradijono, in Warmada, problem based learning is a teaching approach that uses problems as a first step in collecting and integrate new knowledge. With the use of models that model the quality of education in Indonesia is expected to be better. According to the Sofa (2008), discovery learning is learning that requires discovery mental processes, such as observing, measuring, classifying, suspect, explaining, and making decisions. While project-based learning is an innovative approach to learning that enable students to learn and work autonomously to construct their knowledge related to real life, so as to produce a product of student work. PBL learning model is student-centere learning and put the teacher as a motivator and facilitator.

Chemistry is compulsory subject matter for Senior High School, because while in junior high school has not taught as a separate subject. In 2005, chemistry is taught separately in junior chemistry with other subjects. Educational experience that is often faced by chemistry teachers in senior high school is most of students consider chemistry as a subject matter that is difficult, so it is not uncommon to have first students feel less able to learn chemistry.

According to Tanjung, N (2007) there are some factor that is suspected to be the cause of the lack of mastery of chemistry in senior high school, they are: students often learn by rote without understanding the subject matter, material that is taught often float so that students do not find the key to understanding the material, teachers can't giving the concept to master the material being taught. One of the problems that make-low the student's achievement in learning chemistry is many senior high school students in the subject of chemistry consider that is

difficult so they have a feeling not Able to study it. This case may be the caused by the presentation of topics are less interesting and boring. And finally, it leaves a dangerous, difficult, and less scare to students who understand the basic concepts of chemistry a (Situmorang, 2006). Teachers as educators, should be pay attention to the model / learning methods appropriate in the explain of the subject matter. In addition, teachers must have extensive knowledge so that they can develop and ultimately student learning topic easier to understand and can provide an optimum student's achievement.

Learning method that many of them involve the student's activeness is Discovery learning method. Balzach (2006) explains that in discovery learning students are required to learn to find something, this requires each student to learn and work independently. Implementation of discovery learning methods allows the students more active and creative in finding and solving problems.

According to Sofa (2008), discovery learning is the learning that requires mental processes, such as observing, measuring, classifying, suspect, explaining, and making decisions. In discovery learning, teachers give a problem and told to solve problems through experiments. Here the teachers are not controlling the learning process but an active role of students is more needed in learning chemistry to understand between concepts and the structure of the chemical being studied. Teachers are expected to guide the students in the discovery and problem solving. Mental skills demanded higher than discovery include designing and conducting experiments, collecting and analyzing data, and drawing conclusions.

Discovery model is not different with experimental method because students solve problems set by the teacher through the experiment. Based on the research that has been conducted by Mardiah Nur (2007) using the experimental method on the topic electrolyte and non-electrolyte solution shows that the average value calculated for the experimental class (72.75 ± 9.39) is higher than the average value of the control class (53.00 ± 15.35). This suggests that the practicum-based learning method is effective in teaching chemistry. Based on the research that has been conducted by Husnarika Febriani (2010) using the discovery learning shows that the value of the average student to class discovery for 83.63. While the average value of students for classes that use cooperative-type jigsaw of 79.63. This suggests that students who are taught by discovery learning model on average higher student's achievement than student's achievement of students taught with cooperative learning jigsaw. And based on the research that has been

conducted by Lia Isti Indriyani (2013) using experimental method using PAS on the topic electrolyte and non-electrolyte solution shows that the value of average students in experiment class (80.30±9.75) is higher than the average value in control class (70.61±8.88). So, from the data above will be doing research using discovery learning model on the topic electrolyte and non-electrolyte solution.

By using curriculum 2013 in teaching and learning activities, each teacher must develop the character of each student in accordance with the material to be taught, for example, the character of cooperation and involvement of the student.

Individualistic attitudes, selfishness, indifference, lack of sense of responsibility, communicate and lack of empathy is a phenomenon that shows no social value or character in daily life. In fact, in these conditions, education can provide a substantial contribution. Education can contribute in overcome social problems because education has the function and role in improving human resources. But the character development in schools has not yielded the expected results. Many of the causes behind why the development of character in the world of education has not yielded the expected results. Factors could cause stems from the curriculum, design or implementation of the supporting factors of learning (Syaodih, 2009).

As with the conventional method which is a way of explain information verbally to some listeners, this activity centered on the speaker and the communication that occurs in the same direction. Many conventional learning methods which use of teacher to present a subject matter that makes the students tend to be lazy to think and just listen without understand what was said by the teacher, this makes the students sleepy and bored quickly. Therefore, a teacher is required to be able to present the subject matter as interesting as possible, so that the students feel interest and creativity to be active in chemistry (Roestiyah, 2001)

Applied of discovery learning can make students learn about the real processes. In addition the student will grow and develop a sense of scientific and have a confidence to be able to define and solve problems they find, so that the results obtained in the memories of durable, not easily forgotten (Roestiyah, 2001).

Based on the problems that describe above, the authors are interested in doing research with title **"The Influence of Discovery Learning Model to Increase Student's Achievement and Student's Character of Cooperation and Activeness on the Teaching of Electrolyte and Non-Electrolyte Solution in Senior High School".**

1.2. Problem Identification

Based on the background that explained above, problems can be identified as follows:

1. Is the quality of national education in Indonesia still under national standards?
2. Are the lack of proper selection of learning models are conducted by the teachers?
3. Is the student's understand to the materials especially chemistry at the senior high school still low?
4. Is the student's character in the class to a subject matter less developing?

1.3. Problem Limitation

Based on the scope of problems in identifying the problems above, the problem limitation are:

1. The research was conducted at the Senior High School (SHS) class X using 2013 curriculum, semester 2, T.A. 2013/2014, in SMA Negeri 11 Medan
2. The subject matter that had been in this research is Electrolyte and Non-Electrolyte Solution
3. Teaching method was applied in this research are Discovery Learning Model and Conventional Method
4. Student's character that had been measured in this research are cooperation and activeness through observation sheet
5. Student's student's achievement that had been measured in this research is cognitive aspect of the level C1, C2, and C3

1.4. Problem Statement

In this research, that used as problem statement are:

1. Is the student's achievement who have learning use Discovery Learning Model higher than student's achievement who have learning use Conventional Method?
2. How many percentage the character of student's cooperation can develop through Discovery Learning model?
3. How many percentage the character of student's activeness can developed through Discovery Learning model?

1.5. Research Objective

Based on the problem statement above, the objective in this research are:

1. Knowing the student's achievement which taught by using Discovery Learning model higher than student's achievement which taught by using Conventional Method on the teaching electrolyte and non-electrolyte solution.
2. Determining percentage of development character of cooperation through Discovery Learning Model on the teaching electrolyte and non-electrolyte solution
3. Determining percentage of development character of activeness through Discovery Learning model on the teaching electrolyte and non-electrolyte solution

1.6. Research Benefit

The benefits of this research are:

1. Strengthen existing theories in the education, especially theories of learning about chemistry discovery learning method can affect student's student's achievement, cooperation and student's activeness
2. Can provide guidelines for teachers of science, especially chemistry teachers to carry out in schools to improve student's achievement and student's character
3. Giving motivate to the teachers of chemistry to choosing teaching methods are expected to provide more effective learning.
4. Provide material inputs to similar research in the future.