CHAPTER I
INTRODUCTION

1.1. Background

Education is a very important tool for human survival. Education is a major factor in the formation of the human personality to establish good and bad their personality. Education helps people to develop themselves and cope with any changes in their life. In the National Education System Law No. 20 of 2003 Article 1, explained that education is a conscious and deliberate effort to create an atmosphere of learning and the learning process so that students actively develop their potential, so as to cope with any changes that occur in their life. Students are accused to study a wide variety of sciences such as science, social, religious, arts and so on.

Natural science is one of the sciences that can support the technology, and physics is one of the elements in science. Physics related to the facts and principles that exist in natural phenomena and how to obtain the facts and principles. Physics is a subject that can develop analytical thinking skills, inductive, and deductive in resolving problems associated with natural events around, both qualitatively and quantitatively by using mathematics. Subjects of physics can develop the knowledge, skills and confidence. Physics is very necessary to learn at every level of education from elementary school, middle school to college (DEPDIKNAS, 2006).

Physics has always been considered as difficult lesson and complicated. One of factors that cause unresolved physics student learning outcomes related to the learning process. Teachers rarely provide a wide variety of ways in learning material, explaining the material to students only with one way or monotonous without considering response from students. It makes students become bored and passive during study physics, and many students who complained that physics is difficult and tedious lesson.

The research was implemented at the school MAN 3 Medan. Based on the initial survey to observe and interview the teachers in MAN 3, seen that the teachers only use conventional learning without the use of instructional media.

Teachers simply known as informer, and learning that takes place centered on teachers, which teachers identify learning materials and students just sit, see, hear and receive lesson passively. The result of interview by reseacher with mam Riana Napitu who is one of teachers in MAN 3 Medan that said she still use conventional learning and almost of all teachers in MAN 3 Medan using this learning. Mam Riana said that so many students that not interest in physics lesson and students become passive in class. When the teacher finished to explain the topic, there's no student that has question. But when examination did, students always get low value so that teacher must do remedial test to give addition in their value.

To make learning activity more interesting and can involve the students to be more active when teaching and learning activity, the teacher need innovations in teaching and learning activity. For example, use a variety of learning models and use a variety of media in supporting the success of teaching and learning activities. Thus, one of steps that taken by the teacher is to implement learning model, one of them is a cooperative learning model that consists of several types. One of cooperative learning model types that make learning activity more interesting is Jigsaw Type.

Cooperative learning model is not the same as simply learning in group. There are basic elements that distinguish cooperative learning with group learning compiled by random. Implementation of the basic principles of fundamental system of cooperative learning model correctly will allow teachers to more effectively manage the classroom. In cooperative learning model, the learning process does not have to learn from the teacher to the student. The Students can learn with the other fellow students. Learning by peers (peerteaching) is more effective than learning by teacher (Rusman, 2010).

The lack of creativity in learning media also makes students often wrong concept because the teachers always use conventional learning to explain the phenomenon in physics. According to Bruner in Arsyad (2003) there are three main levels of learning mode, ie direct experience (enactive), the experience of pictorial/image (iconic), and the experience of abstract (symbolic). Based on the

Bruner's theory, to explain the material in physics, the teachers need to do some experiments and demonstrations immediately. For the teacher must be able to present a more active learning activities, creative and fun for the achievement of the golden generation in the future. The lack of using the media or the equipment to conduct experiments and demonstrations of physics is sometimes become obstacles to learn in school.

Based on some journals , international journal by Gelu maftei from Romania concluded that Using the jigsaw method, it is much easier to understand Bohr's planetary model and will be able to extrapolate knowledge to the other atoms with more electron. International journal by Kazim Karebekir from Turkey Stated that jigsaw technique has a positive influence on their learning principles and methods of teaching course, he said too that Jigsaw technique should be able used in all phases of education. From national jounal i get by Khoirul Musthofa from FKIP UNS concluded that type of Jigsaw can increase activity of students in physics learning. Through student activity like discuss in home teams and expert teams can give chance to students to express their idea and opinion, so that can stimulate students to be more active in learning activity. Furthermore, national journal by M.A. Hertiavi, H.Langlang and S. Khanafiyah from FMIPA Semarang State University concluded that type of Jigsaw can increase ability of students to solve the problems. It seems from the increasing significantly on students' learning outcomes. The last journal from State University of Medan by Sugianto, Dian Armanto and Mara Bangun Harahap concluded that type of Jigsaw that compare with type of STAD, type of Jigsaw significantly can increase more the ability of reasoning of students mathmatically and their communication compared with use cooperative model type of STAD.

Based on the above, the author conducted research using cooperative learning model Type of Jigsaw using animation media on learning outcomes of students in Electromagnetic waves subject matter in class X which will be held in MAN 3 Medan. The title is taken the author is: " **The Effect of Cooperative Learning Model of Jigsaw Type Using Animation on Student's Learning**

Outcomes in Temperature and Heat Subject Matter in X Claa Even Semester MAN 3 Medan Academic Year 2014/2015".

1.2. Problems Identification

Based on the background that has been considered, so that the identification of problems in this study are:

1. Student's learning outcomes in physics subject is low.
2. Students not interest to learning physics.
3. Physics teacher still using conventional learning.
4. Lack of use of instructional media.

1.3. Problem Limitations

Based on the identification of the above problems, the authors limit this problem, namely:

1. The effect of physics student's learning outcomes seen in the presence of a significant different between cooperative learning model of Jigsaw type using animation
2. The physics learning outcomes of student are the scores obtained from the research instrument test
3. This research will conduct to students of X Class MAN 3 Medan Even Semester Academic Year 2014/2015
4. The topic at class X which will research is Temperature and Heat.

1.4. Problem Formulation

Based on the background above, problem identification and limitation of study above, so the problem statements in this research are:

1. How the achievement of student's learning outcomes using Cooperative Learning Model of Jigsaw Type using animation in Temperature and Heat subject matter in X Class in MAN 3 Medan A.Y. 2014/2015?

2. How the achievement of student's learning outcomes using Conventional Learning in Temperature and Heat subject matter in X Class in MAN 3 Medan A.Y. 2014/2015?
3. Is there signifcant effect of Cooperative Learning Model Type of Jigsaw on students' achievement in subject Temperature and Heat in class X MAN 3 Medan A.Y. 2014/2015?

1.5. Research Objectives

Based on the problem of study above so the objectives that will be achieved in this research are:

1. To know the learning outcomes of students using Cooperative Learning Model Type of Jigsaw Using Animation in subject matter Temperature and Heat in class X MAN 3 Medan A.Y. 2014/2015.
2. To know the learning outcomes of students using Conventional Learning in subject matter Temperature and Heat in class X MAN 3 Medan A.Y. 2014/2015.
3. To know the significant effect of student's learning outcomes using cooperative learning model Type of Jigsaw using animation in subject matter Temperature and Heat in class X MAN 3 Medan A.Y. 2014/2015.

1.6. Research Benefits

- For School : can give a good contribution in order to improve the learning process and improve the quality of schools by increasing student achievement and teacher professionalism.
- For teacher : As a consideration in selecting learning model and media in learning physics.
- For students : Students are more motivated to learn physics, because the abstract concepts of physics can be more real through cooperative learning model Type of Jigsaw using animation media. So, the learning process

becomes more interesting and more attractive to increase students' understanding.

- For researcher : As a description to implement a more effective learning model and media that can be used as a reference.

1.7. Operational Definition

To describe more operational variables in this research, the following operational definitions presented each variable.

1. Cooperative Learning Model of Jigsaw Type is one of type or model of learning cooperatively designed for affect pattern interaction student and as an alternative to structure class for growing comprehesion concept.
2. Student's Learning Outcomes is a change in behaviour as a result of a rigorous process of learning which according to Bloom's Taxonomy consists of three domais, namely domain are cognitive, affective and psychomotor.