

CHAPTER I

INTRODUCTION

1.1. Background

According to Indonesian dictionary education words have meaning or how to process or act of educating. By definition language education is the process of changing attitudes and code conduct of a person or group in a mature business man through teaching and training efforts. Awareness about the importance of education has prompted various efforts and attention of the whole society against any development of education, particularly developments in the field of technology and information, then the learning process should be able to develop students' skill in order to have quality fully human resources both to meet the challenge there. In the learning process of teachers are required to be able to choose appropriate learning models according to the circumstances of the student in order to achieve success in learning.

Physics is one of the science subjects in schools that teach a variety of knowledge that can develop the power of reason, the analysis, so that almost all of the problems connected with nature can be understood so interesting to learn. To understand the physics broadly, it must begin with the ability of the understanding of the basic concepts in physics. A student in learning physics said to be less successful if the change in behavior that occurs has not been able to determine the discretion to achieve result that has been set correctly in the allotted time. To achieve maximum learning outcomes, many aspects that influencing, including aspects of teacher quality, level of desire learners to learn, teaching and learning methods media, and others.

Based on interview the researcher to one of physics teacher Mrs.Ir.Julina at SMAN 1 Perbaungan at October 16th, 2014 when researcher is training teacher in that school, she stated that during the learning and teaching using only conventional learning to explain the learning material coupled with the provision of independent tasks to students after giving an explanation in the classroom. She

also said that the average value in physics are not satisfy, where the average value are 65 has not reached the minimum completeness criteria, minimum value specified criteria completeness of school at 70 to declare the student completed the study of physics. Value achieved by students categorized enough, but not purely from the results of their own learning abilities but has additional from teacher, including the assessment of teachers to personal tasks, student attendance, and student discipline during the process of learning. The problems faced by students in the learning process that students are difficult in understanding the material taught by teachers using learning model that has not enable all students. They assume that physics is the most difficult lesson and when they face various types of formula and calculation the physics. Students are also difficult to investigate the questions of physics when they face the problem to answer the questions. Based on interview about the laboratory, the teacher tells that's seldom to use. In that school just has one laboratory for science that's combined with one, there are physic, biology and chemistry lab. The problems about the lab are the teachers seldom lazy to ask students discuss in lab because they have many reasons, so that they just tell by conventional model.

In the learning process involves the variety of activities to do to get optimal results. One way that can be used in order to obtain optimal results desired as is focused in the learning process. This can be done by selecting one appropriate learning model for the selection of appropriate learning model essentially is an effort to optimize student learning outcomes. One of the learning models that allows students to interact one each other is a model of cooperative learning. Cooperative learning models can motivate students, utilizing all social energy of students, each taking responsibility. Cooperative learning model is useful to help students learn ranging from basic skills to solve complex problems. According Slavin (2005) in cooperative learning, students will sit together in groups of four people to master the material presented teachers. There are several types that can be applied in cooperative learning model, among others: 1) Student Team Achievement Division (STAD), 2) Jigsaw, 3) Think Pair Share (TPS), 4)

Number Head Together (NHT) and Group Investigation (GI) is planning a general classroom setting where students work in small groups using cooperative inquiry, discussion groups, as well as planning and cooperative projects, in this case the students were released to form his own group consisting of two to six members.

To solve the problem, the researcher changes the conventional learning model with cooperative learning model and also the Conceptual knowledges used about the learning outcome by using the Andersons' cognitive start from C4 until C6 about analyze, evaluate and create. Cooperative learning models have some types. One type of cooperative learning model to build students' confidence and encourage their participation in the classroom is a Group Investigation cooperative learning model. It is one form of cooperative learning that emphasizes the participation and activities of the students to find their own materials (information) lesson will be studied through the suitable materials, from a textbook or students can search through the internet. It is often seen as the most complex model and the most difficult to implement in a cooperative learning. It involves students from planning, both in determining the topic as well as a way to learn through investigation. It requires the students to get a good ability to communicate well in a group process skill .The teachers who use it generally divided in to five till six students with heterogeneous characteristics. The division of the group can be also based on the pleasure of friends or common interest to a particular topic. The students choose the topics that they want to learn, following a thorough investigation of the various sub topics, then preparing and presenting a report to the class at all.

In some of the studies that have been done to apply the cooperative model of type Group Investigation obtained improving student learning outcomes. As Ahmad Fauzi (2012) who conducted research in SMAN 1 Sumbul with dynamic electric materials have different results when using the cooperative model of GI type with direct learning model that has 16.37% increase in the average results of his study reached 60.63 become 72.50. Weakness obtained by researcher is the

lack of planning early in the organization of the group and the capability of beginning students. Suheni (2013) conducted a study on the subject matter Temperatures in class VII SMP, obtain an average value of 75.3 where the value exceeds the value with the criteria. Researcher also obtained that with this model of learning activities of students in becoming active.

Based on explanation above the writer wants to do the research with title **“The Effect of Cooperative Learning Model Group Investigation (GI) Type to Conceptual knowledge Student’s in Topic Optic Geometry Grade X SMAN 1 Perbaungan Academic Year 2014/2015”**.

1.2. Problem Identification

Based on the background that already explained, so the problem identification in this research are:

1. The physic teacher still use the conventional learning
2. Students' learning outcomes of physics is still low in cognitive
3. During the lessons teacher never do jokes so that the lessons feel bored
4. Student rarely do physic experiments and rarely to use laboratory
5. Interaction between students and teachers in cooperative learning is still low

1.3. Problem Limitation

Based on the problem identification, researcher limits this problem items namely:

1. Sub topic that will be learn is Reflection in the mirrors and Refraction in the lens
2. Cooperative learning model of type group investigation is used in research

3. Physics student learning outcomes in the Conceptual knowledge domain bounded in grade X SMA

1.4. Problem Formulation

Based on the limitation problem, so the problem formulation are:

1. How is the physics outcome learning of students during the teaching and learning process by using the conventional learning in the topic Optic Geometry grade X SMAN 1 Perbaungan Academic Year 2014/2015?
2. How are the physics outcome learning of students during the teaching and learning process by using cooperative learning model Group Investigation (GI) type to conceptual knowledge student's in topic Optic Geometry grade X SMAN 1 Perbaungan Academic Year 2014/2015?
3. Are learning outcome physic for students by using in cooperative learning model group investigation type to conceptual knowledge student's better than conventional learning in topic Optic Geometry grade X SMAN 1 Perbaungan Academic Year 2014/2015?

1.5. Research Objective

There are some research objective items, namely:

1. To analyze student's learning outcomes by using Conventional in topic Optic Geometry grade X SMAN 1 Perbaungan Academic Year 2014/2015.
2. To analyze student's learning outcomes by using Cooperative learning model Group Investigation (GI) type to conceptual knowledge student's in topic Optic Geometry grade X SMAN 1 Perbaungan Academic Year 2014/2015.
3. To analyze which one better use about outcome learning physics, Conventional learning model or cooperative model Group Investigation

(GI) type to Conceptual knowledge student's in topic Optic Geometry grade X SMAN 1 Perbaungan Academic Year 2014/2015.

1.6. Research Benefit

From this research expected are:

1. To make the teacher understand about the type model and improve the models that use cooperative in Group Investigation to high cognitive
2. For materials input to physics teachers in selecting appropriate learning model.
3. As the source for another researcher to develop research about cooperative learning model of group investigation type to high cognitive
4. For reference for researcher in do more research further

1.7. Operational Definition

Operational definitions are presented in this study are as follows: cooperative learning model type Group Investigation is one type of cooperative learning which consists of six stages used to review the facts and basic information that govern the interaction of students. Basically the goal of cooperative learning is to train students to be able to think and work in groups, discussing to solve a problem and then be responsible for reporting the results of their discussion. Six points in Group Investigation namely: 1) Identifying, 2) Planning, 3) Investigation, 4) Presented, 5) Evaluation.