CHAPTER I

INTRODUCTION

1.1 Background

Education is a conscious effort that is intentionally designed to achieve the goal set. Education aims to improve the quality of human resources. Therefore it is necessary to improve the quality of human resources through learning process at school. The assessment of learning process toward a more effective and efficient in inseparable from the role of the teacher as the spearhead of learning in school.

Physics is just one of the science lessons, and it is a discipline based on qualitative and quantitative measurements for understanding natural phenomena around us. Students have difficulty learning physics because physics consists of more abstract concepts. Many studies were conducted by researchers about physics, especially force and motion, to better understand them (Doymuş, 2012).

In the curriculum have confirmed that learning Science should emphasize the mastery of competencies through a series of scientific process. A series of scientific process is expected to develop the experience to be able to define problems, propose and test hypotheses through experimentation, design and assemble the experimental instruments, collect, process and interpret data, and communicate the results of the experiment orally and in writing (Depdiknas, 2006).

The description above describes that a series of scientific process that meant is science process skills. Thus, the learning activities of physics in SMA/MA becomes very important to provide a learning experience directly through skill development and scientific attitude.

The experience learned directly through the skills development process and scientific attitude, the learning process that originally centered on the teacher (teacher centered) are expected to turn out to be a learning process centered on the student (student centered).

The facts on the field show different things. The learning activities are still centered on the teacher (teacher centered). This is consistent with the observation in SMA Negeri 1 Dumai that the learning activities are still dominated by the teacher. Early learning activities the teacher provides learning materials and students only pay attention, then the teacher gives problems to be solved. Teachers provide opportunities for discussion so that the matter can be resolved. However, only 5 of the 30 students making discussions. Here we can see the lack of social interaction in heterogeneous groups. Furthermore, students who have completed the matter to come forward to explain to the students in the class. At the end of the lesson, the teacher provides the opportunity for students to ask questions about the material that has been given. Students are not familiar involves cognitive skills or intellectual, manual and social.

Through this method, the student's science process skills are underdeveloped. It is supported by the results of further observations of the science process skills during a lesson in class X-Science 1, with the data obtained as follows: the skill of asking questions of 7.90%, observed of 21.49%; applying the concept of 6.58%; communicates of 4.61%, while the science process skills of students in the aspect of asking questions, interpret data, hypothesize, research plan, organize tools and materials, and predicted not appear. In addition, student achievement grade X is still low. It is characterized by the results of the midterm (UTS) in physics achieved by students in the first semester academic year 2015/2016 on average only around 36.88. The average value is still less satisfactory because a lot of students who received predicate C with KKM 60. This school uses a national curriculum with the assessment system based on the predicate. Based on the results of the midterm exam, many students still relatively predicate C. Some students who achieved predicate B and A. The purpose of learning physics based on the national curriculum of student-centered learning activities (student centered) has not been reached.

Based on the observation data from the distribution of a questionnaire conducted by researchers of December 17th 2015 at X-Science 1 and X-Science 2

Class in SMA N 1 Dumai of 57 students which contains questions about activities, interests and motivation of students to the physics. From the questionnaire it was found that 45.12% of students said that Physics is hard, boring and unattractive, 54.88% said that physics is an easy lesson, understandable and enjoyable. From the results of the questionnaire also acquired 0.45% of the students in the class who stated quite liked physics, while 22, 15% of the class of students who expressed like physics, then 52, 25% of the class of students who said it was not like a physics lesson and 25.15% of the class of students who declare mediocre. From these data it is seen that most students do not like physics because they consider the physics lessons always synonymous with mathematical formulas that are difficult to memorize that ultimately give rise to the impression that the Physics scary and unpleasant. Students become passive during the learning process. Motivation of students to physics learning still low so that students tend to be passive in the learning process. As a result, it is often encountered students talking in class, play cell phone, or draw when learning takes place.

Based on observations in SMA N 1 Dumai, teachers pay more attention to competency assessment of knowledge, especially physics teachers. It can be seen many physics teachers provide practice problems in school, homework and group assignments. According to Permendikbud No. 53 of 2015 Clause 8 explains that educators assess student knowledge competency through written tests, oral tests, and assignments in accordance with the competencies assessed. Attitudes and skills competency assessment underestimated. Permendikbud No. 53 of 2015 Clause 8 explains that educators do attitude competency assessment through observation as a primary source of information and reporting become the responsibility of homeroom or classroom teachers. In connection with the assessment of skills, Permendikbud No. 53 of 2015 Clause 8 explains that educators assess competency skills through the performance assessment, the assessment that requires learners to demonstrate a certain competence by using the practice test, product, project, portfolio, and / or other techniques in accordance with the competencies assessed. (Permendikbud, 2015).

Seeing these facts, the need for an effort to improve learning achievement and the development of science process skills by selecting the appropriate learning models the model of learning that support increased student achievement and have different stages of learning are capable of developing science process skills in students. One model of learning that has a goal to improve learning achievement is a cooperative learning model type group investigation. This can be seen on the stages of the model of cooperative learning type group investigation with aspects of science process skills there is a relationship between both of them, so expect the science process skills can be explored and trained to apply this learning model.

Results of research conducted by China (2008) that the cooperative learning model type group investigation can improve science process skills of high school students, then Nurfarida (2009) reported that the cooperative learning model type group investigation may improve the mastery of concepts of fluid static and Rahayu (2010) reported that cooperative learning model type group investigation can improve learning achievement and science process skills of students. Based on these studies, it is suggested in order to develop a model of cooperative learning group investigation to improve student's science process skills in addition to skills hypothesize aspect, communicating, and asking questions, and develop cooperative learning model type group investigation for other subjects.

From the description, the researcher is interested to examine the science process skills of physics in high school with cooperative learning model type group investigation. This is in accordance with the advice of previous researchers to implement cooperative learning model type group investigation on the othe subject matter of physics in class X SMA. Model of cooperative learning type group investigation apply to developing science process skills in eight of the ten aspects of the science process skills that involve manual and social skills. This is in accordance with the national curriculum that emphasizes on a series of scientific process. Therefore, this research entitled :

"**The Effect of Cooperative Learning Model Group Investigation (GI) Type to Improve the Science Process Skills in Static Fluid Subject Grade X Even Semester SMA Negeri 1 Dumai A.Y. 2015/2016**".

1.2 Problem Identification

Based on the background of the problems described above, it can be identified problems relevant to this research are:

1. Student achievement is still low, seen a lot of students achieved predicate C.
2. Lack of motivation of students to physics learning so that students tend to be passive in the learning process
3. The learning activities are still centered on the teacher (teacher centered)
4. The student's science process skills are underdeveloped like to ask questions, observe, apply concepts, communicate, interpret data, hypothesize, research plan, organize tools and materials, and predicted not appear.
5. Lack of social interaction in the heterogen groups
6. Teachers only see the knowledge competency assessments rather than attitude and skills competency assessment
7. Students are not accustomed involve cognitive or intellectual skills, manual and social

1.3 Problem Limitation

To give a clear scope in the discussion, there should be restrictions on the problem in the research are as follows:

1. The learning model used is Cooperative Learning Model Type GI (Group Investigation) in the experimental group and the conventional learning model in the control class.
2. This research will be investigated the science process skills Physics students.

1.4 Problem Formulation

Based on the problem limitation has been stated above, then that becomes the problem formulation in this research: Is there the effect of cooperative learning model GI with science process skills approach of students of class X Semester II SMA Negeri 1 Dumai in the subject matter Static Fluid A.Y 2015/2016 ?

1.5 Research Objective

Based on the problem formulations above, the objectives to be achieved in this study to determine the effect of cooperative learning model GI approach science process skills of class X SMA Negeri 1 Semester II Dumai in the subject matter Static Fluid A.Y 2015/2016.

1.6 Research Benefit

The benefits expected from the results of this study are:

For teacher :

1. Giving consideration for teachers to improve science process skills of students by providing alternative selecting and applying appropriate learning models.
2. Giving more insight to recognize the application of GI models in physics learning.

For student :

Train science process skills of students as well as providing an atmosphere that is different from the classroom learning methods were applied.

For researcher :

Expanding their knowledge and experience in the learning of physics by using cooperative learning model type group investigation (GI).

For school :

Can be used as input in an effort to improve the quality of learning in the learning process at the school

1.7 Operational Definition

The operational definition given in order to avoid the occurrence of different perceptions of terms available:

1. Group Investigation is perhaps the most complex of the cooperative learning approaches and the most difficult to implement. The GI approach normally divide their classes into five or six member heterogeneous groups. In some instances, however, groups may form around friendships or around an interest in a particular topic. Students select topics for study, pursue in-depth investigations of chosen subtopics, and then prepare and present a report to the whole class (Arends, 2012: 369).
2. Science process skills have been described as mental and physical abilities and competencies which serve as tools needed for the effective study of science and technology as well as problem solving, individual and societal development (Akinbobola, 2010: 234). The science process skills which should be engendered in the teaching and studying of science are those of measuring, observing, classifying, inferring, predicting, communicating, interpreting data, making operational definitions, posing questions, hypothesizing, experimenting and formulating models (Ango, 2002: 15).