

## CHAPTER I

### INTRODUCTION

#### 1.1 Background

A great education is an education that can lift up the dignity and value of a State. Education established automatically can make a nation speak in the international area. Learning activity is one of the most vital components in determining the quality of education. Learning activities performed by two actors, are teachers and students. The behavior of the teachers is teaching and students are learning behavior. Teaching behavior and learning behavior is related to the subject matter. Learning is essentially a process of interaction between teachers and students, either direct interaction such as face-to-face activities and indirectly, by using a variety of instructional media (Rusman, 2012).

Teachers as classroom manager should be able to manage the classroom as a learning environment that needs to be organized. As a manager, a teacher is responsible for maintaining the physical environment of the class to always fun to learn and directing or guiding the processes of intellectual and social in its class. Thus the teacher not only allows students to learn, but also develop the ability to work and learn effectively from among students. A teacher can actually improve adequate results in the learning process, where teachers as educators are able to leverage the model and the right media in learning. In teaching, the teacher always requires students to learn, teachers also require students to solve problems, but rarely teach how students should solve the problem (Arends, 2009). On the other hand, (Rusman, 2012) suggests that the curriculum Problem Based Learning (PBL) helped to boost the development of lifelong learning skills in a mindset that is open, reflective, critical, and active learning. PBL curriculum facilitates successful problem solving, communication, teamwork and interpersonal skills better than other approaches .If we view from the non-social factors include learning media, where learning media is one means of to enhance the teaching and learning

process. A great education is an education that can lift up the dignity and value of a State. Education established automatically can make a nation speak in the international area. Learning activity is one of the most vital components in determining the quality of education. Learning activities performed by two actors, are teachers and students. Learning activities performed by two actors, are teachers and students. The behavior of the teachers are teaching and students are learning behavior Teaching behavior and learning behavior is related to the subject matter. Learning is essentially a process of interaction between teachers and students, either direct interaction such as face-to-face activities The selection of media that will be used very concerned with teaching methods that will be used. Therefore in teaching and learning activities teachers must have a strategy so that students can learn effectively and efficiently and are expected to hit the goal.

Based on data reported by the Department of Education of North Sumatra, Friday (25/5), students in senior high school / MA that pass the UN amounted to 119, 945 people (99.88%) of the 120,090 participants. While the students who pass the exam is 72,410 people (99.87%) of 72,504 participants. For the IPA program, from 62,331 participants from the UN SMA / MA in North Sumatra, which pass as many as 62, 257 people or 99.88 percent. As for the national level graduation rate reached 99.70 percent of the 628,495 participants. Especially for high school, there are eight regencies / cities in North Sumatra with a 100 percent graduation. The eighth area of each Sibolga, as well as Pakpak Bharat, West Nias, Dairi, Mandailing Natal, North Padang Lawas, Humbang Hasundutan and Nias. For the MA level, 100 percent graduation occurred in 24 of 33 districts / cities in North Sumatra. Nine districts were still some students do not pass the exam include Medan and Deli Serdang, Langkat, Labuhan Batu, Karo, South Labuhan Batu, shavings, South Tapanuli, Asahan and North Padang Lawas.

The researchers did the observations for approximately three months at SMA Negeri 1 Berastagi, in the context of Field Experience Program (PPL), researchers discovered a lot of various phenomena in the implementation of learning. In fact,

most of the students find physics lesson is a scary lesson, difficult, and tedious. In addition, students are passive and do not pay attention when the teacher explains the lesson. Even the students seem saturated during the learning process. At the end of the lesson, students can't answer the teacher's question about the material that had just delivered and when students are asked to inquire about things that are not understood, students often silent. In addition, about 60% of students in each class X science still has a value below KKM standards of Physics at the school which is 2.60.

The researchers discuss the applications of various physical phenomena in daily activity in the classroom, the researchers found that in fact there is an interest and desire of the students to develop their potential in solving the problems of physics concerning daily life, but this is often not channeled as a result of the use of models and methods used in the classroom. Researchers also found that the using of media in the classroom is less. the condition of physic's lab is also less ,it's make the students can't do experiment there, so the students are not able to develop and find out about physic .The Schools should also be facilitated, like infocus so it can project a variety of media such as animation media. This is mainly the effect of less attention in learning process that is used in general is still teacher's center. Researchers also distributed a questionnaire to determine students' interest about physics, and the result is almost 70%, the students assume that physics is boring and very difficult.

The various problems that researchers have encountered, researchers feel need the existence in learning to makes the students active in class, involving all students in the learning process-oriented student's center by raising more authentic physics phenomena in daily. And most important is the existence of an increasing the student learning outcomes. It is support by a good model and media's learning. The good model that appropriate to make the learning process can active is Problem based learning model, because in this model, the students must be active to find the problem by themselves.

Problem-based learning (PBL) is an instructional approach that provides learners with opportunities to identify solutions to structure, real-world problems. Problem-based learning (PBL) is an instructional approach that enables learners to conduct research, integrate theory and practice, and apply knowledge and skills in order to develop a solution to a defined problem (Savery, 2006). According to Barrows (2002), the key components of PBL are , unresolved, ill-structured problems that will generate multiple thoughts about the cause and solution, a student-centered approach in which students determine what they need to learn , teachers serve as facilitators and tutors, and problems are authentic and reflect professional practice. Barrows (1996) also suggests that learning in a PBL environment should be integrated from a wide range of disciplines or subjects such that students study and integrate information from diverse disciplines that might relate to understanding and solving a particular problem. In short, PBL is an approach to learning in which students work together to find solutions to complex problems (Ferreira & Trudel, 2012).

Based on the description above, the writer interested to do research with the title *"THE EFFECTS OF PROBLEM BASED LEARNING MODEL (PBL) ASSISTED ANIMATION TO INCREASE STUDENT'S LEARNING OUTCOMES IN TOPIC 'HEAT AND TEMPERATURE' AT GRADE X-SCIENCE IN SMAN 1 BERASTAGI ACADEMIC YEAR 2015/2016"*.

## 1.2. Problem's Identification

Based on the background described above , can be identified that there are some problems,

that is ;

1. The less of student's interest to physics subject
2. The low of student's learning outcomes in Physics subject
3. The lack of student's learning activities
4. The lessons are still teacher's center Learning
5. The utilization of media is less

### 1.3. Problem's limitation

Considering the wide scope of the problem and limitations of time and the ability of the author, it is necessary to restrict the problem, that is:

1. The learning model that used is Problem based learning (PBL) with animation
2. Learning outcomes in SMA N 1 Berastagi
3. The students activity in SMA N 1 Berastagi
4. The students that observed is X science semester II in SMA N 1 Berastagi

### 1.4 Problem formulation

Based on the problem definition, the formulation of the problem in this research are:

1. How do the results of student learning outcomes using Problem Based Learning (PBL) assisted animation in topic heat and temperature at grade X –Science in SMA N 1 Berastagi A.Y .2015/2016?
2. How do the results of student learning outcomes using conventional model in topic heat and temperature at grade X –Science in SMA N 1 Berastagi A.Y .2015/2016?
3. How the value from students activity using conventional learning model in topic heat and temperature at grade X –Science in SMA N 1 Berastagi A.Y .2015/2016?
4. How does the value from activity of students using Problem Based Learning (PBL) assisted animation in topic heat and temperature at grade X –Science in SMA N 1 Berastagi A.Y .2015/2016?

### 1.5 Research objectives

Based on the problem's formulation, the objectives that obtained in this observation is to know

1. The student's learning outcomes with Problem based learning model assisted animation on topic heat and temperature at grade X –Science in SMA N 1 Berastagi A.Y .2015/2016
2. The student's activity with conventional model on topic heat and temperature at class X SMA N 1 Berastagi A.Y.2015/2016
3. The student's activity with Problem based learning model assisted animation on topic heat and temperature at grade X –Science in SMA N 1 Berastagi A.Y .2015/2016

### 1.6 Research Benefit

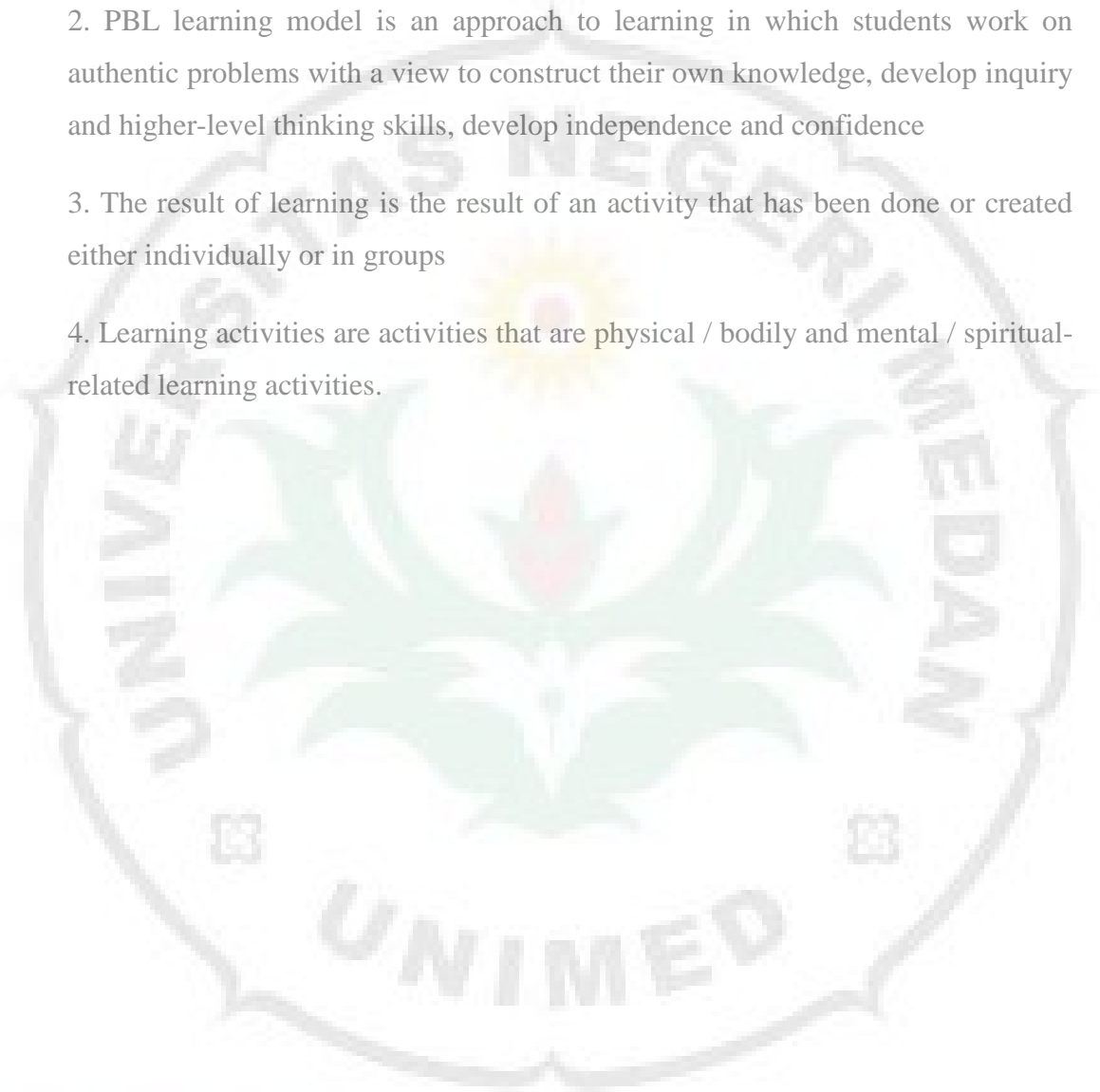
The benefit from this research entitled the effect of problem based learning assisted animation to increase students learning outcomes on topic heat and temperature is

1. As information of student's outcomes with using *Problem based learning* model (PBL) assisted animation in topic heat and temperature at grade X – Science in SMA N 1 Berastagi A.Y .2015/2016?
2. As alternative information selecting the learning model (Problem Based Learning or PBL)
3. To know the different of result between problem based learning with conventional model.

### 1.7. Definition

1. The effect is due, influence, or the impression that arises in the reader's mind (after seeing something)

2. PBL learning model is an approach to learning in which students work on authentic problems with a view to construct their own knowledge, develop inquiry and higher-level thinking skills, develop independence and confidence
3. The result of learning is the result of an activity that has been done or created either individually or in groups
4. Learning activities are activities that are physical / bodily and mental / spiritual-related learning activities.



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