

CHAPTER I

INTRODUCTION

1.1 Research Background

Education is one of the factors to support the progress of a country. Therefore, to improve the quality of education in Indonesia has issued in *BSNP* (*Badan Standar Nasional Pendidikan*). Based on this condition, perhaps that the students have a good learning outcomes. But the fact, it isn't same with the expectation. As the research observation result at SMAN 1 Tebing Tinggi, the learning outcomes especially in Physics is not maximum yet. It can be seen from the results of daily exams with the *Kriteria ketuntasan Minimum* (KKM) value of physics is 75, while the students that are able to achieve only about 30%.

The government is trying to advance education in Indonesia. These efforts can be seen from the 9-years compulsory education by providing BOS (*Bantuan Operasional Sekolah*) funds and also give teachers more salary by provide certification to professional teachers. In fact, the physics teachers in SMAN 1 Tebing tinggi already teachers certification, but still can't handle the student outcomes and still use teacher-centered learning or usually called direct instruction model.

Based the results of the survey, students whom value under the KKM must do remedial. The remedial was given only a test without giving the matter of learning. Writer proposed the implementation of remedial not only do repeated tests, but teacher must repeat the subject matter again so the student who doesn't have understand would be understood. However, the implementation of remedial, of course, will require additional time and made a new problem when the implementation schedule for the semester will end and change with the next semester and teachers are required to immediately resolve an administration preaches it.

Factors that affecting low student learning outcomes are teachers rarely use fun methods or models of learning and less variation. Teacher just explain in

front of class and student only listening and take a notes, learning just focuses to physics equations and calculations than explain the basic concepts, teacher doesn't tell the relationship of physics with daily life, and the physics problems in daily life, so that students consider that physics is the hardest lesson and so difficult to understand.

Problems above are need to overcome by develop a learning model that can improve student learning outcomes and seek student become active so in learning student not only receive what the teacher explain but also student can understand the real physics concept and no trouble in resolving the problem. The learning model must also be able to increase the motivation of students in learning. Problem-based learning (PBL) is an example of a student-centered learning environment. It was first developed in the mid-sixties of the last century in medical education with the aim to bridge the gap between what was learned in school and relevance for future professional practice. In PBL, small groups of students work together on meaningful problems under the guidance of a tutor, according to Barrows in Wijnia,L., (2014)

A PBL cycle generally consist of three phases: an initial problem description, discuss study phase, and a reporting phase. During the initial discussion, the problem description is usually describes a phenomenon that can be observed in daily life. Students read and discuss the problem by use of prior knowledge and common sense and eventually formulate learning issues for further self-study, which are questions that guide their self-study activities. Afterward students reporting their result discussion.

PBL intends to help promote students' intrinsic motivation. Impact of motivation on learning of students in education is important. In education the role of motivation is effective on students learning. Due to motivation students do any task and achieve the goal. Motivation increase speed of work and a person is doing everything to achieve goal. Motivation increases the performance of learning.

The research with respect to the influence of PBL to increased learning outcomes in a variety of fields of study has been carried out by Makmur (2013)

result the problem solving ability of physics using problem based learning model better than problem solving ability of physics using direct instruction. Further research conducted by Grace (2013) result that the student of high learning motivation was better than those who had the low learning motivation with significant value $0,041 < 0,05$. Research of Matthew (2011) concluded that PBL as a method of teaching and practicing science in advantageous for immersing pre-service teachers in stimulating environments of problem solving where curiosity and desire to understand the world are nurtured and talents, interests and skills are fostered. Research by Sezgin, G (2010) concluded that problem based-learning method not only encouraged the students' deep approach to learning, but also improved interest (a component of attitude) towards the physics course. Becerra, et al., 2010 concluded that students who following the PBL can develop scientific reasoning habits in problem solving skills, and show gains in conceptual learning, attitudes and interest.

Based on the description above, the writer wants to apply PBL to see the effect in the class, whether good or not. The writer will do the research which the title is: **“The Effect of Problem Based Learning Model and Motivation to Learn Physics on Learning Outcomes of Heat and Temperature Topic in Class X SMA Negeri 1 Tebing Tinggi Academic Year 2014/ 2015.”**

1.2 The Problem Identification

Based on the background issue, the problem identification are :

1. Physical ability in student learning outcomes is relative low.
2. The creative thinking of students in learning physics is relative low.
3. Spend a lot of time to repeat the lesson materials on students who get a low value (under *KKM*).
4. Students does not active in the teaching and learning activities.
5. Students are mostly just remember the formula not understanding a lesson.
6. Students do not understand the application of the science that's been learned into daily life.

7. The learning process is still centered on the teacher so that teaching and learning are less meaningful.
8. Teachers just give a matter without give student opportunity to ask the question.
9. Lack of teacher's intuition to create a good learning model.
10. Incomplete laboratory facilities and teachers who have not been adept at using the tools in the laboratory.

1.3 The Problem Limitation

The problem limitation in this research are :

1. Physical ability in student learning outcomes is relative low.
2. The creative thinking of students in learning physics is relative low.
3. The learning process is still centered on the teacher so that teaching and learning are less meaningful.

1.4 The Problem Formulation

To make research brief that can be used as reference, so the problem statement is made as below:

1. Is the student's outcomes that taught by problem based learning model significant better than the student's outcomes that taught by direct instruction model?
2. Is the student's outcomes that taught by high motivation significant better than low motivation?
3. How does the interactive of problem based learning with the learning motivation to student outcomes?

1.5 The Objective of Research

The objectives of this research is to know "The Effect of Problem Based Learning Model and Motivation to Learn Physics on Learning Outcomes".

Specific objectives of the study are:

1. To determine whether there are significant better of the student's outcomes that taught by problem based learning model than the student's outcomes that taught by direct instruction model.
2. To determine whether there are significant better of the student's outcomes that taught by high motivation than the student's outcomes that taught by low motivation.
3. To investigate the interactive of problem based learning model with the learning motivation to the student outcomes.

1.6 The Benefit of Research

1. Practical Uses
 - a. To express the effect of problem based learning model towards student outcomes
 - b. To inform teachers in senior high school factors to increase learning motivation and student outcomes
 - c. To inform teacher in SMA N 1 Tebing Tinggi use the Problem Based Learning model to increase learning motivation and student outcomes
2. Theoretical Benefits

The result of this research can be use for another research to reveal and proof empirically the problem based learning still more superior if compare with another experiment. The result of this research also can be use as a reference to the next researcher that use the same research.