

CHAPTER I INTRODUCTION

1.1 Background

Physics study up to now is still become a lesson which difficult for most students to obtain good learning outcomes in class. Results of data obtained during Field Training Program in SMAN 2 Kisaran, show that the students average value of X grade for physics class is 69. The students average value are below of passing standard score, even based on the assessment carried out in school, students must master at least basic competence in classical and individual type above or equal to 80.

The low of student's learning outcomes is caused by various factors, one of them is because students are less interested in physics, most students in X grade claimed that they followed lessons of physics only as an obligation. Although there are some students who are able to understand formulas in physics, but it is still difficult for them to implement these formulas in daily life, so they think that physics is not needed to solve various problems in daily life. It can be concluded that most students are not motivated in learning physics. Students only write, listen and do the the work in learning proses.

Teacher who teach are usually using conventional model, where students in the compulsory to understand formulas without explaining to students of physics concepts contained there in and its relationship with other subject matter taught in classroom. In addition, use of media and experiment in learning is also very minimal. So students become very limited activity and the teacher more active in the class then the students or called teacher center.

According to the *Human Development Report* 2003 (Manalu, E.L:2011) version UNDP, the rank of HDI (*Human Development Index*) or the quality of human resources in Indonesia is in the rank of 112, than Filipina is in the rank of

85, Thailand in the rank of 74, Malaysia in the rank of 58, Brunei in the rank of 31, South Korea in the rank of 30 and Singapore was ranked 28. Given this reality means that there must be addressed within the Indonesian human resource. One affects of the low human resource factor is education. The education system in Indonesia is considered not capable of producing human resources ready to compete with universe. So there should be reforms in education.

If the facts above considered then to be related to the teaching-learning process in schools that had been impressed monotonous. In addition, the learning process that occurs not maximize the potential of students in physical or psychological. During this time the students think that learning is boring. Especially for a physics because physics famous with numbers and formulas. Teaching in schools usually discuss the theory from the handbook, then given some formulas and problems. By use this kind of teaching, the students feel bored and lazy to learn. In addition, the work that attempt by the government to increase the educational quality are: changing the curriculum, improving the educational facilities, using models, increasing the quality and quantity of textbooks and preparing the professional educators.

PBI is a learning model that presents problem to students before they construct their knowledge. The problem presented is problem which always experienced by students in their daily live. Through PBI students trained construct their own knowledge, develop problem solving skills, accustomed in using media, and used to enhance interaction among students of students, so students become independent, more confident and have a great motivation in learning physics. Meanwhile, Ibrahim reveals that the PBI, teachers try to encourage students to have intrinsic motivation (Rusmiyati & Yulianto, 2009:75).

Some research relating to the use of Problem Based Instruction method has already been done, among others; by Festiyed & Ermawati (2008), where their reaeach showed that by using PBI in learning can provide an increase in activity and student's learning achivement, this thing can seen from average value

of student learning achievement which have increased from 5.7 in Cycle I to 6.09 in cycle II. There is also an increase in value of the lowest in cycle I was 4, in cycle II, the lowest value obtained 5. Most student's scores have increase, initially they received score of 5 and 6 in cycle I, to 6 and 7 in cycle II. Research conducted by them is classroom action research using cycle model. They also suggested that experiments of this study is more extensive, so as to ascertain how far this PBI can increase activity and student learning outcomes.

Then by Hapsoro, H.S (Fitria : 2012), where the results of their study showed that PBI-assisted learning aids can achieve basic competencies of students and student learning outcomes, in addition, PBI-assisted learning aids are better than conventional learning, this indicated by students' cognitive learning outcomes, with average value of 69.3415 in control class, while 73.5238 in experimental class. Increased learning outcomes in control class by 45% whereas in experimental class by 52%. The results of this research were obtained by using two classes as a grade control and experimental classes. Advice given in their research is aimed to improve the quality of education especially in learning activities, among others; teacher should consider PBI-assisted learning aids to be applied, because the learning method is proven improve basic competencies and student learning outcomes significantly, and also implementation of PBI learning takes a long time so that the efficiency of time is necessary for the purpose of learning can be achieved.

Research about PBI model to improve student learning outcomes conducted at high school of grade X in Medan. This research is conducted by considering of students in learning physics which ultimately have an impact on learning outcomes of students automatically become low. Method of this research is by using quasi experiments with one group post-test. Based on description above, will be conducted research with title **"The Effect of Problem Based Instruction (PBI) Learning Model on Students' Learning Outcomes in Electrical Dynamic Topic for Class X SMA Negeri 2 Kisaran Academic Year 2012-2013 "**.

1.2 Problems Identification

Based on description of background above, problems can be identified as follows:

1. Students still have low motivation to learning physics
2. Students not interest to learning physics
3. Students difficult to understand in learning physics
4. Teachers still using conventional learning model
5. In learning process still focused on the teacher as the main source of knowledge
6. Students are not active in learning process

1.3 Problems Limitation

Problems that developed in this paper should be limited to provide a clear description of the issues that will be reviewed. In accordance by problem identification, problems limitation of this paper are:

1. The topic that will teach is electrical dynamic using problem based instruction (PBI) learning model in X class.
2. Students' learning outcomes that will research are cognitive, affective, and psicomotor (activities) aspect.

1.4 Problems Formulation

Based on the problems limitation which described above, hence the problems formulation in this research is :

1. How the effect of problem based instruction (PBI) learning model on students' learning outcomes in electrical dynamic topic in class X SMA Negeri 2 Kisaran academic year 2012-2013?
2. How the students' average in affective domain using problem based instruction (PBI) learning model?

3. How the students' average in psychomotor domain (activities) using problem based instruction (PBI) learning model?

1.5 Research Objective

Referring to problem formulation, the objectives to be achieved in this research were to:

1. Knowing the effect of problem based instruction of the students' learning outcomes.
2. Knowing the affective using problem based instruction.
3. Knowing the psychomotor using problem based instruction

1.6 Benefits of Research

From this research are expected to obtained the benefits as follows:

- 1) As information and research results on the effect of problem based instruction learning model of the student's learning outcomes on the electrical dynamic material.
- 2) As an alternative model for physics teachers.

1.7 Oproasional Definition

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

1. Problem Based Instruction (PBI) Learning Models is a learning strategy that uses problems as a first step in collecting and integrating new knowledge through investigation.
2. Student's learning outcomes is a change in behavior as a result of a rigorous process of learning, which, according to Bloom's Taxonomy consists of three domains, namely domain of Cognitive, Affective and Psychomotor.