

CHAPTER 1 INTRODUCTION

1.1 Background

Education is one of the efforts to improve the quality of human resources. Education, in the sense of conscious and deliberate effort to realize the lifelong learning process, touching all levels of society, all walks of life and all ages. Awareness of the importance of education has pushed efforts and attention from the whole society towards the development of education, in particular the development of information technology, where knowledge of physics that is closely associated with science and technology needs to be developed starting from the basic level to be able to complete and survive in conditions that era always evolve over time, so that the learning process should be able to develop the ability of students complete in order to have quality human resources well to face the challenges.

The main component in education is teachers. The teacher is required to compensate for even go beyond the development of science and technology developed in the community. Through the touch of a teacher at the school is expected to produce learners who are extremely competent and ready to face life's challenges with confidence and confidence is high (Sanjaya, 2006).

In improving the quality of education, the process of teaching and learning in school is a very important activity, because the learning process is a process that contains a series of actions of teachers and students on the basis of reciprocal relationship or interaction. Interaction in the event of learning not only the relationship between teachers and students, but in the form of educational interaction. Educational value due to the interaction of teaching and learning activities undertaken are directed to achieve specific goals before the instruction is done, teachers consciously planned teaching activities systematically by utilizing everything for the purpose of teaching. Through the process of learning the optimal expected national education goals can be achieved.

Teachers need to have knowledge about the approaches and techniques of teaching is good and right so that learning activities can take place effectively and efficiently according expected goals. Whether or not the teaching quality will affect the success of student learning. Teachers should be able to create a classroom atmosphere that is conducive to the survival of student learning activities. One is the use of teaching proper technique, especially in learning physics.

Physics is often seen as a hard science students with theoretical and difficult questions. This statement obtained by author when implementation PPLT-UNIMED in SMA Negeri 1 Sidikalang, there are several problems were found that many students who consider physics as subjects frightening and assume Physics as a subject that is difficult studied so the average value of physics is still under 70 .

Some problems in the learning process of the students are caused by environmental factors and social students. The low learning outcomes physics based on implementation PPLT, due to: (1) Physical Learning model which is less varied (conventional model) where the learning process is performed centrally on the teacher (teacher centered) in order to explain, give examples, exercises and assignments. Variation of teaching methods that the teacher is less adjusted based on the characteristics of the material taught. (2) Laboratory equipment is still incomplete (3) Teachers rarely use learning media. (4) Teachers are rarely offered an opportunity for students to interact with peers or with teachers in developing students' knowledge that causes students being passive and difficult to understand and master the subject matter, so that the activities and learning outcomes less than the maximum.

The problems of students who find it difficult and tired with physics need to be pursued solution is to perform actions that can change the atmosphere of learning that involves students. Active learning by students in the learning will be more meaningful because students are directly invited to construct this knowledge, in addition to fostering cooperation between students who are good and less good , the student is guided in the form of heterogeneous groups.

Those problems can actually be solved if teachers can see the problems in classroom and find an appropriate learning approach the subject matter presented in order to be absorbed and understood by students well. Based on the above acquired learning physics that can improve students' thinking skills by using Problem Based Learning model. with the student's problem solving skills, will be able to increase the activity of students in the learning process.

Problem Based Learning Model is an innovation in teaching because of the student's problem solving skills learning and teaching process truly optimized through the process of work group or team that is systematic, so that students can empower, honing, testing, and develop the capacity to think on an sustainably.

The essence of problem based learning consist of presenting student with autentic and meaningfull problem situation that can serve as springboard for investigation and inquiry. Arends (2012:397)

Learning is based on the problem as one of the student-centered learning and adhering to the constructivism learning paradigm. A paradigm shift in the learning process that had been centered on the teacher (teacher centered) into a student-centered learning (student centered) is expected to encourage students to be actively involved in building the knowledge, attitudes, and behaviors. Centered learning process students will make students gain the opportunity and facilities to construct their own knowledge so that students can gain in-depth knowledge, and ultimately improve the quality of student learning and students play an active role in constructing the concepts learned.

The use of Problem Based Learning model can improve student learning outcomes. Research on the Problem Based Learning Model is already been done and reviewed by Tresia (2015) the average value of pretest students 55.78 and the average value of posttest 87.75. The conclusion that can be seen in the thesis of Tresia that this model can improve student learning outcomes significantly, but this study has weakness in preparing for media and teaching aids used, as well as the allocation of time less efficiently so that teaching and learning results obtained are still lacking

good. Efforts will be made author to overcome these weaknesses is to provide learning model Problem Based Learning with Power Point as a learning media, so that with the power point help of students more easily understand the concept of dynamic electricity. In addition, authors will provide student worksheet relevant to daily life easier so that students do and make the lesson plan with the allocation of time as efficiently as possible so that the expected result will be a better student learning outcome. Based on the background described above the author intends to do research with the title **"The Effect Of Problem Based Learning Model Assisted Concept Map To Authentic Problem Solving Skills Topic On Dynamic Electric Grade X SMA Negeri 1 Sidikalang A.Y 2015/2016"**

1.2 Problems Identification

Based on the background described above, it problem can be identified relevant to the research include:

1. The average of student learning outcomes is still under 70.
2. Students is still less interested in studying physics.
3. Students are still less active and involved in the learning process.
4. Lack of practice over theory learned and laboratory use are less effective in school.
5. Teaching and learning process is still teacher centered.

1.3 Problem Limitations

The limit problem in this research are:

1. The learning model used is the Problem Based Learning Model
2. The subjects were students of Grade X SMA Negeri 1 Sidikalang A.Y 2015 / 2016.
3. The basic material is a Dynamic Electric Grade X SMA Negeri 1 Sidikalang A.Y 2015 / 2016.

1.4 Problem Formulation

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

1. Is there the effect of problem based learning model to problem solving skill of student in topic dynamic electric ?
2. Is there is the differences of problem solving skill of student that learn by problem based learning model and conventional learning ?
3. Is the student's problem solving skills as a result of the influence of problem based learning model better than conventional learning topic on dynamic electric grade X SMA N 1 Sidikalang A.Y 2015/2016 ?

1.5 Research Objectives

Based on the formulation of the problem, the objectives to be obtained in this study are:

1. To analyze there the effect of problem based learning model to problem solving skill of student in topic dynamic electric.
2. To know the differences of problem solving skill of student that learn by problem based learning model and conventional learning.
3. To know the problem solving skills of students as a result of the influence of problem based learning model better than conventional learning in Dynamic electric topic in class X SMA N 1 Sidikalang A.Y 2015/2016.

1.6 Research Benefits

The benefits of this research are:

1. For students, is expected to train students to develop problem solving skill in the learning process of physics.
2. For teacher as an alternative to the selection of information materials learning model.

3. For school, expected as resources need to design the learning system with the model of Problem Based Learning as an effort to improve problem solving skill of student in Physics.
4. Researcher here in after, the expected results of this study can be used as a reference or consideration for doing research on the same topic in the future.

