

## CHAPTER 1 INTRODUCTION

### 1.1. Background

Physics is one of the sciences that important in education. Physics is a natural science is concerned with how to find out about natural phenomenon systematically, so that the natural science is not just a collection of knowledge mastery of facts, concepts, or only principle but also is a process of discovery. In natural science education expected become facilities for learners to learn about human and environment, as well as the prospect of further development in applying them in daily life. The process of learning gives emphasis on providing the experience to develop competence in order for learners exploring and understanding the natural science.

Physics till now is one of subjects that are less attractive to students. It is evident from the low percentage of students mastery the learning matter. This is because in addition to the material in these subjects is difficult to understand, sometimes the delivery of content by teachers lacking attract students. In general, physics teacher at school often discussing the theory of the handbook, providing formulas and solving problems. The system of teaching learning process focus on teacher centered and use conventional learning.

Solving the problem that teacher still using conventional learning or teacher centered in learning process it is better to change the learning process become student centered. The school which researcher choose for this research is SMA Negeri 1 Perbaungan.

Based on preliminary observation through the direct observation by interviewing the physics teacher in SMA Negeri 1 Perbaungan showed that the average value of class X for physics matter is often the lower value compared with other lessons. Data of preliminary observations in SMA Negeri 1 Perbaungan, also show that students average value is below of passing standard value that is 75 as KKM standard value. In presenting the subject matter, the teacher explain to the class and give a summary of the material with notes on the board and the students

listen and record the important things of the material being taught. From interviews said also that the students learning outcomes in physics subject is low. This causes students are less actively and decrease their learning outcome because not directly involved in the learning process so that students irresponsible, this all will certainly have an impact on value of students and will cause a minimum completeness criteria (KKM) of SMA Negeri 1 Perbaungan not be reached or is below standard students value that is 75.

Based on the preliminary observation with questionnaire found about 50 % students in SMAN 1 Perbaungan which like the physics as an obligation . And 33 % students stated physics interested in learning physics. If only the method of teaching the teacher are good and interactive , it will make them more interested in learning physics. In their daily life, they will be respond well to the subjects of physics, this can be seen when teachers teach, they observe and record things that are important.

Observation data show 60 % of students prefer to learn physics in groups. In reality teachers rarely engage student in the the process to get knowledge and in group discussion and only emphasize the students to memorize formula and doesn't emphasize on the concept and its application. In fact, many students are still difficult in using the formula to solve problem and some of them is misunderstanding on the concept. During the learning process, the teacher rarely conduct students in experiments for the material significantly.

Learning process show students as the listeners and teacher is dominated the class or teacher-centered (teacher centered). Dominance of teacher in this study will cause the student less motivated and less curiosity in this subject in acquiring knowledge.

Generally, learning physics in this school is still using conventional learning method because this method is easy to implement and quickly seen. In the learning process that is likely to be teacher centered domination master teacher in the classroom. Teacher writes on the blackboard, and then, goes on solving the problems related to it. The students prepare for the exam by memorizing these concepts and formulas, and by solving the related problems. Meanwhile, some of

the students can not comprehend the concept, others are not interested in the subject as they think that it is not useful to them, and the others are like spectators while few students come to the blackboard and solve the problems.

Problems above must developed by fixing learning model that can improve students learning outcome and students become active in learning process. Student not only receive the teacher explanation but also student can understand the real physics concept and the important understanding the concept for resolving the problem. An effort to improve students learning outcome implementing the Problem Based Learning model.

Solving this problem the researcher must be able to manage required for each step and can really adjust the time allocation there with the lesson plans are made. And involve teachers in the learning process so that students become active so student can increase their learning outcome.

Based on the description above, will be conducted research with title

**"The Effect of Problem Based Learning (PBL) Model toward Student Learning Outcome in Dynamic Electricity Topic at Class X in SMA Negeri 1 Perbaungan Academic Year 2014/2015"** expected the results will provide benefits for teachers, especially in providing an alternative model of learning in classroom, particularly in efforts to improve student's learning outcome.

## **1.2. Problems Identification**

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

1. Paradigm of physics is difficult
2. Students learning outcome in physics subject are still relatively low
3. Lack of students involvement in learning activities

### **1.3. Problems Limitation**

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

1. Research Subject is all student in class X SMA Negeri 1 Perbaungan Academic year 2014/2015.
2. Subject matter is Dynamic Electricity by using Problem Based Learning Model (PBL)
3. Learning outcome will be researched in cognitive aspect.

### **1.4. Problems Formulation**

Based on the problems limitation which described above, hence the problems formulation in this research are;

1. How the average value of students learning outcome between using PBL Model and Coventional Model in dynamic electricity topic at class X SMA Negeri 1 Perbaungan?
2. How the students activity after using Problem Based Learning Model in Dynamic Electricity topic at class X SMA Negeri 1 Perbaungan?
3. Is there any significant difference of students learning outcome between using PBL Model and Conventional Model in Dynamic Electricity topic at class X SMA Negeri 1 Perbaungan?

### **1.5. Research Objectives**

The goals of this research is:

1. Knowing the average value of students learning outcome using Problem Based Learning in Dynamic electricity topic at class X SMA Negeri 1 Perbaungan.
2. Knowing the students activity after using Problem Based Learning Model in Dynamic electricity topic at class X SMA Negeri 1 Perbaungan.

3. Knowing significant difference of student learning outcomes between using PBL and Conventional Model in Dynamic electricity topic at class X SMA Negeri 1 Perbaungan.

#### **1.6. Research Benefits**

- For school: Give good contribution to the quality of school as students learning outcome and increase teacher's professionalism.
- For teacher : The results of this research are expected to be input in expanding knowledge and insight about Problem Based Learning (PBL) model in teaching science, that become one of alternative teaching models as effort to improve student's outcome.
- For student: The results of this research are expected to increase students learning outcome in learning physics.
- For researcher: The results of this research are expected to be description of learning model implementation in teaching physics and increase the quality of researcher writing.