

CHAPTER I

INTRODUCTION

1.1. 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 Government Regulation no. 19 Year 2005 on National Education Standards, and perfected Curriculum of Education Unit Level Curriculum (KTSP) to Curriculum 2013. Based on this condition, perhaps that the students have a good learning achievement. But the fact, it isn't same with the expectation. As the observation result at SMA N 1 Matauli Pandan, the learning achievement especially in Physics is not maximum yet.

Learning is a process of interaction between the learner and his environment so that there is a change toward better behavior. According Djahiri (in Siregar, 2012) the main principle in the learning process is the involvement of the whole or most of the potential student (physical and nonphysical) and the meaning for themselves and their lives today and in the future (life skills).

Learning Physics in general is still oriented towards the teacher. Students tend to accept what is described by the teacher without having to know the meaning of the lesson. Students also tend to memorize the definition and formula, the learning approach is less associated with natural phenomena, everyday life, and technological developments. This causes students passive and less motivated in learning, students assume that physics is difficult and boring, they learn physics because physics is a compulsory subject, so students have difficulty learning and lead to a low learning achievement of Physics.

The emphasis should be relevant to physics daily life learning, so that the physics obtained will be useful, and will have an important role for students to apply in everyday life. Next will be an impact in creating quality human resources. Therefore, to awaken students' enthusiasm for learning physics, required learning strategies, such as Project Based Learning models.

One of the problems facing our education is lack of learning problem, where the learning process, students are not encouraged to develop critical thinking skills. As stated Yusoff bin Harun in the Project-based Learning Handbook: *“The old-school models of passively learning facts and reciting them out of context is no longer sufficient to prepare students to survive in today's world”*

The learning process in the classroom is directed to the child's ability to memorize information, the brain is forced to recall and hoard a variety of information without being required to understand the information that is remembered to connect with everyday life. As a result, students are theoretically smart but poor application (Retno, 2008). Based on the observation result, teacher rarely to practice on the laboratory. The advice at the laboratory is not complete yet. In other side, students would refer to do experiment than hearing teacher's description as usual (54.3%).

Learning physics laden with concepts, from simple concepts to more complex concepts and abstract, so it requires a correct understanding of the basic concepts in physics. One of the goals of learning physics in high school is "the students can understand the concepts of physics and its relevance and application to solve problems in everyday life and technology" (Depdiknas, 2004).

Project Based Learning (PBL) model is one of the innovations in learning that can be used as PBL aims to train students in critical thinking, creative, rational and improve understanding of the material being taught and give real experience to students. According to Buck Institute for Education (BIE) (in Ngalimun, 2012) that PBL is a learning model that focuses on the concepts and principles of the main (central) of a discipline, involving students in problem-solving activities and other meaningful tasks , giving students the opportunity to work autonomously to construct their own learning and ultimately produce valuable and realistic student work. In addition, through the model PBL, students are expected to develop knowledge through participation in the learning process. In this learning process with active student learning (student-centered) build knowledge while the teacher acts as a facilitator and motivator (Ngalimun, 2012).

Fluid topic in accordance with the model of Project Based Learning (PBL) as it is one material that is much discussed theory of physics. With the PBL models,

the term smart students theoretically but poor application can be avoided. This study will be conducted in SMA N 1 Matauli Pandan. Based on observations made average value of physics students is 50-60 with a minimum standard (KKM) 78.

And then, there is a problem that contextual to the citizen. Nowadays, almost 8 hours per day we have no electricity. As we know that our life activity is depend on electricity using such as for cooking, lighting, water pump, etc. Especially for water pump, it's an important things, because we need water for take a bath, watering plant, cooking, clothes washing, dishes washing, etc. So, when there is no electricity, there is no water. In this case, students have to find the solution of this problem using project based learning.

By solving the contextual problem above using the PBL model expected student able to understand the Fluid to the material well in order to improve student learning outcomes physics. Research with respect to the influence of PBL to increased learning outcomes in a variety of fields of study has been carried out by Bellyna (2010), concluded the application of the PBL approach has significant impact on learning outcomes of students in junior high school chemistry Brigjend Katamso field on the subject of acid-base by 30, 69%. Further research conducted by Rahmadiyah (2011), concluded that the model of learning through PBL effect on improving student learning outcomes by 51%. Recent research Anriani Devi (2012), the results showed that PBL has an influence on improving student learning outcomes of 22.8%.

Based on the description above, researchers interested in conducting research in the physics department with the title, **“The Effect of Project Based Learning Model on Student’s Achievement of Fluid Topic in Class XI SMA N 1 Matauli Pandan Academic Year 2013/2014 “**.

1.2. Problems Identification

Based on the background above, the problems identification of this research are as follows:

1. Students just know the theory not the application

2. In learning process students less encouraged to develop critical thinking skills
3. Study physics was saturating and boring
4. Low of student's achievement for physics
5. Low of student's understanding the concept
6. Learning model still not variated that used by teacher
7. The dominance of the teacher in the learning process, so students do not have a chance to express their opinion.

1.3. Problem Formulation

The problem formulation of this research are:

1. Is there the influence of Project based Learning model to students learning achievement in Fluid topic in SMA N 1 Matauli Pandan Class XI Academic Year 2013/2014?
2. Does the student's achievement in the Fluid subject using Project based Learning Model higher than Conventional Learning in Class XI SMA N 1 Matauli Pandan Academic Year 2013/2014?

1.4. Problem Limitation

In order to keep this research become more focused and directed, the researcher limit the problems as the following

1. Learning model used is a Project Based Learning Model on the experimental class and Conventional Learning on the control class.
2. The material taught is Fluid.
3. Conducted to determine the influence of the Project Based Learning Model on student learning outcomes.

1.5. Research Objectives

The research objective is as follows:

1. To know if there is the influence of Project based Learning model to students learning achievement in Fluid topic in SMA N 1 Matauli Pandan Class XI Academic Year 2013/2014
2. To determine the differences of student's achievement in the subject matter Fluid using Project based Learning Model and Conventional Learning in Class XI SMA N 1 Matauli Pandan, Academic Year 2013/2014.

1.6 Research Benefits

The benefits of this research are:

1. As a ground for researchers in conducting research.
2. Adding the experience of researchers in improving student learning outcomes based project based learning model.
3. Opening think conception of teachers in developing teaching and learning model one uses project based learning model.
4. As consideration for other researchers to examine the same issue in a different location and as an alternative information materials for physics teachers in selecting models or learning methods.
5. As solution for the same case in society.