

## CHAPTER I INTRODUCTION

### 1.1 Background

Education is one of efforts to develop the intellectual life of the nation and to improve the quality of human resources. Therefore, education plays an important role towards the progress of a nation. This has been recognized both by the government where so many efforts have been undertaken to improve the quality of education in Indonesia. Such as curriculum improvement, teacher quality improvement, provisioning the International/ Bilingual schools that have the ability to competing and so forth.

Education is not just acquired in a short time, but it requires a learning process. Learning is a process of one's efforts to obtain a new behavior changes as a whole, as a result of his own experience in the interaction with the environment.

Therefore, researchers and other educators give the considerable time to do a study on improving the quality of education, particularly in improving the quality of teachers. As Slameto states that “the role of teachers has increased from as a teacher became a director of learning process. As director of learning process, duties and responsibilities of teachers are more increase, including increasing the function of teachers as lesson planning, learning managers, appraisers learning outcomes, learning motivator, and as a mentor”.

Nowadays, when students do the learning, students are usually dominated by the writing, recording, listening to the teacher explain and read a book. These habits are only elements of writing or words that cause only the left brain are working, while the right brain is not working at the time of study. This imbalance makes the students think that learning is not fun. Same with learn physics at school.

Physics teacher who gave lessons with lectures method, invite students to read and memorize materials tend to make students feel bored, annoyed and a lack of willingness in the minds of students for the depths. Teachers can make students feel interested and motivated in many ways, one of which is to use the media and the different methods of learning and teaching interesting because of the use of

media in teaching and learning and a desire to generate new interest, to encourage motivation and stimulation of learning activities, and even take effect - psychological effects on students.

According to demands of teacher professionalism, it still got the problem that many teachers who lack knowledge of learning media as a means of supporting learning success. On the other hand there are some teachers who are already making use of learning media, but the shape and style is outdated or unsatisfactory success.

According to the result of observation during the researcher running the PPL (Experience Field Program) in SMA N 1 Perbaungan, the students consider that physics was “a scary” lesson. This means that students are worried that physics will make them not pass the national examination and also they do not want to enter science class for the class X. According to the interview with the physics teacher, the mark of the students three years ago have the average about 60.15, but when using the media a year ago like the power point, the mark of them become increase and can achieve the mark average. But it's average mark of the student just 77.6 whereas the minimal achievement criteria at that school is 65.

The low physics student's marks caused by students do not understand the material that presented to them. From the main factor of a lack of student learning outcomes in learning physics, it is necessary to increase learning outcomes by combining experimental methods with media learning interesting and fun. One of the instructional media will be given to students is assembled media simulation of macromedia flash.

Physics is a subject that is difficult by students considered because physics has a lot of formulas. This is caused because the students think the formula is more important than the concept. Though students must first understand the theories and concepts of Physics and then, from that concept, students can understand how to solve problems in physics. Not just use the lecture method alone, but also use experimental method so that the students better understand the concepts of what is presented in theory. Lack of teacher that use the media make the researcher choose virtual simulation media that is expected

able to improve the students learning outcome. Researcher hope with using the virtual simulation media and experimental method, the learning outcomes of students can be increase more than two years before.

With the virtual simulation learning media combine with experimental method, students can more easily understand the physics concepts that are abstract. Based on these problems, it is necessary to research the title “**The Effectiveness of using Virtual Simulation Media with Macromedia Flash Combine with Experimental Method to Improve Students’ Learning Outcomes in Dynamics Electric’s Subject for the First Grade of SMA N 1 Perbaungan A.Y. 2012/2013**”.

### **1.2 Problem Identification**

Based on the background presented above, the problems identification in this research is as follows:

1. The low of students' learning outcomes on physics topic.
2. Lack of teachers who use learning media as a means of supporting successful learning.
3. Students’ activities are too passive with the usual learning.

### **1.3 Problem Limitation**

To focus the problems, these problems are limited to:

1. Solve the problem about the low of students' learning outcomes on physics topic.
2. Use learning media as a means of supporting successful learning.
3. Students’ activities are too passive with the usual learning.

### **1.4 Problem Formulation**

Based on the background that has been said, the main problems that can be concluded are:

1. Do the using virtual simulation media combine with experimental method more effective to improve students’ learning outcomes in dynamic

electric's subject for the first grade of SMA N 1 Perbaungan AY. 2012/2013?

2. How do students act to the using of virtual simulation media combine with experimental method in dynamic electric's subject?

### **1.5 Research Objectives**

Referring to the formulation of the problem, the purpose of this research is:

1. Test the effectiveness of using virtual simulation media with macromedia flash combine with experimental method with learning without the using of virtual simulation media and experimental method to improve learning outcomes in dynamic electric's subject for the first grade of SMA N 1 Perbaungan AY. 2012/2013.
2. Knowing the students' activity to using of virtual simulation media combine with experimental method in dynamic electric's subject.

### **1.6 Research Benefits**

The benefits of this research hoped able to be empiric proof about the effectiveness of using virtual simulation media combine with experimental method to improve students' learning outcomes in physics. And the result can used by the people that having an interest in this research.

### **1.7 Operational Definition**

1. The effectiveness comes from the word which means effectively, no effect. Effectiveness in question in this research is the success of the action that is successful in the use of virtual simulation media. Is it better if students understand the concepts without virtual simulation media than if they were given the virtual simulation media? Effectively demonstrated by students' understanding of concepts better if given the media a virtual simulation compared with no application of virtual simulation media.

2. Media is a virtual simulation program that provides a learning atmosphere that resembles a simple situation or phenomenon (Rochman, 2007:38). Computer will give a visual or an explanation of a situation and students interact opportunity to respond to the situation. The simulation program includes text, graphics, animation, sound, and issues appropriate and useful to replace the real situation that cannot be done in virtual class. Simulation used in this study were taken from the site did not pay (freeware).
3. Understanding the concept is defined as an aspect refers to the ability to understand and grasp a concept and then interpret the meaning of a material.

