

## CHAPTER I

### INTRODUCTION

#### 1.1. Background

Education is a process of improve student that change in behavior is that the make their useful to this process, so the targets of that change can be reach as expected (Hamalik, 2009). One of the goals of the chemistry teaching is to develop more effective, pedagogically and scientifically sound, strategies to teach high school students the concept of chemistry. The success is evident from the two sides are of the level of understanding and mastery of the material provided by the teacher (Sudjana, 2005). The government provides a solution for students who want to do tutoring to help overcome learning difficulties and support student's achievement. Non formal education was held for residents people who need education that serves as replacement, enhancer, and complement formal education in order support lifelong education ( Depdiknas 2009).

Based on the experience of researchers for programs of field experience (PPL) XI SMA Negeri 1 Sidikalang, many students attend tutoring outside school hours. For every class that consist  $\pm 30$  students, there are  $\pm 15$  students attending tutoring of test guidance. Some reason for students to follow tutorial including in order to perform better in school, students think that chemistry is difficult to understand because they contain an abstract concept and a lot of calculations, there are also students who think that the way teachers teach in school are less attractive, as well as the lack of time in school lessons so as to make students less motivated to study chemistry at school. The lack of student motivation can be seen from the low value of daily tests students. In grade XI Science on the odd semesters in an academic year 2014/2015, 35% of students achieving grades Completeness Minimum Criteria (KKM) and 65% failed.

Based on interviews with Jujung Siagian (2015) owner tutoring Quantum Smart Education (QSE), there are several factors that lead to low learning achievement, namely the lack of student motivation, both of self-motivation and motivation to learn from the teacher, lack of exercise in working on matter-of

chemistry at school due to lack of time in school lessons. This has led many parents and students who want to learn more hours in school, one of them by following the guidance of learning. For students who have sufficient financial, follow the guidance of learning that requires a considerable cost as Medica, SSC, Quantum, Ganesha Operation (GO) and others is not a problem. But unlike most of the other students who do not have sufficient financial, this will be a problem for the student to be able to follow the tutorial. Many students who are less satisfied with the learning delivered by teachers in schools choose to follow tutoring outside of school. Following the test guidance used as an alternative of students repeating a lesson that has not been understood at school and became preparedness exam or test at school so as to improve learning outcomes. To overcome the teacher must create an atmosphere of learning in the classroom to be attractive so as to facilitate the students to understand the lesson. To help the students understand chemistry concepts and allows teachers to teach these concepts requires a learning model that directly relate to the subject matter. The strategy or way to make chemistry lesson is interest and fun for student is by using learning method.

Drilling method is a method of teaching to train students to material that has been taught / given in order to have the dexterity or skill from what has been learned (Sudjana, 1995). Drill method is better than the recitation method of learning because this method will make students more active and sincere in doing the exercises (Siadi, 2008), in his study " The Comparison the Student Learning Outcomes between Given the Drill Method with Recitation Method on Learning of Buffer solution", based on the research results, obtained an average pre-test score of experimental class1 is 43.48 and experiment class2 is 42.19. While the average post-test score of experimental class1 is 79.83 and experiment class2 is 75.57. This study suggests that there are differences in learning outcomes chemistry between classes given by the drill method and recitation method. The result of studying chemistry with drill method is better than on the method of recitation.

This method will be integrated with the web-based learning media in the learning process is expected able to make the students can be active in learning by their self, and also to increase of the interesting and motivation of students in chemistry lesson. Using of this media is also accelerating the interaction of teacher with students, and makes the learning process be more meaningful and effective. Motivation is the impulse that arises in a person, consciously or unconsciously to perform an action with a specific purpose. According Ngalm Purwanto (1999) motivation is everything that drives a person to act to do something. Studies that have been made in connection with the result of research Rudi Purwanto (2010) with the title "The Effectiveness of Web Based Learning Media in Improving Student's Achievement on the Teaching of Salt hydrolysis". The averages data of student's motivation from the experimental class is 4. 21 389 and 49 351 control class is 2, so the mean difference of student's motivation is 1.72038.

Based on the description above problem, the researcher is interested to do a research with the title: **"The Implementation of Drilling Method Integrated into Web Based Learning Media to Increase the Student's Achievement and Motivation on Learning of Buffer Solution"**.

## **1.2. Problems Identification**

In connection with the use of web based learning on student achievement in the subject matter buffer solution can be identified the problem as follows:

1. Student found difficulties in studying chemistry in school.
2. Student's motivation on learning Chemistry is relatively low.
3. Not all student can follow tutoring outside school because their financial problem.
4. Selection of learning media that do not conform to the school facilities like computer and internet.
5. The lack of involvement of the student in the process of learning and make the student's achievement is still low.

### **1.3. Problem Limitation.**

In order to keep this research more focused and directed, research was limited as follows:

1. Research will be conducted in SMAN 2 Medan Grade XI Science of Senior High School.
2. The learning method that will be used in this research is Drilling Method integrated into web based learning media.
3. The topic that will be taught in this research is Buffer Solution on Grade XI Science in even semester.
4. Student's Achievement and motivation of students who are following tutorial and who are not following tutorial will be measured in this study.

### **1.4. Problem Formulation**

The problems studied can be formulated as follows:

1. Is the student's achievement of students who are following tutorial is higher than student's achievement of students who are not following tutorial by using Drilling method with web based learning media?
2. Is the student's motivation of students who are following tutorial is higher than student's motivation of students who are not following tutorial by using Drilling method with web based learning media?
3. Is there a significant correlation between student's motivation and the increasing of student's achievement?

### **1.5. Research Objectives**

The specific objectives of this study are:

1. To determine whether student's achievement of student who are following tutorial is higher than student's achievement of students who are not

following tutorial by using Drilling method with web based learning media.

2. To determine whether student's motivation of student who are following tutorial is higher than student's motivation of students who are not following tutorial by using Drilling method with web based learning media.
3. To know that there is a significant correlation between student's motivation and the increasing of student's achievement.

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

The usefulness of this study can be stated as follows:

1. For Researchers

Broaden knowledge and skills to use the type of Drilling method with Web based learning media in learning process.

2. For Teachers

Through these results, it is expected to be a reference or feedback about effective learning model to improve learning outcomes of students.

3. For learners

This study can foster the spirit of cooperation among students, increase motivation and learners improve learning the outcomes of teaching buffer solution.

4. For observers

Education can be used as an evaluation, as well as to get feedback, to become the reference studies (literature) for improving the quality of education, especially chemistry lesson.

5. For the reader

In order to foster child to increase interest in learning particular chemistry subjects.



### 1.7. Operational Definition

1. Tutorial can be defined as a process a teacher or a tutor to students to avoid learning difficulties, which may arise during the learning process, so that students can achieve optimal learning results.
2. Drilling method is a method of teaching to train students to material that has been taught/ given in order to have the dexterity or skill from what has been learned (Sudjana, 1995).
3. Web-based learning media is one way to learn, using web-based technologies or tools in learning process. In other words, learners use mainly computers to interact with their teacher, other students and learning material.
4. Student's achievement is the realization or the expansion of the skills of potential or capacity of a person as a result of the interaction of various factors both internal and external.
5. Student's motivation is the level of student enjoyment to explore new information in learning. It was assessed by administered questionnaire.
6. A buffer solution is an aqueous solution consisting of a mixture of a weak acid and its conjugate base or a weak and its conjugate acid.