

CHAPTER I

INTRODUCTION

1.1. Background

Learning is an activity in order to acquire knowledge, skills and positive values by utilizing a variety of sources for learning. Learning involves two parties namely the students as learner and teacher as facilitators. The most important activity in learning is a learning process. The learning process has several features the following: (1) Learning to realize its nature, in this case the student feels that he is learning, arise in him the motivation to have a knowledge of the expected. (2) Results obtained with the process of learning; in this case knowledge is not acquired spontaneously and instantly, but gradually. (Fuadaturrahmah, 2011)

Learning must be done individually by students, learning is experiencing, and learning cannot be delegated to others. According to Edgar Dale, argued that learning is best learned through direct experience. In learning through direct experience of the students do not simply observe directly but he should live, directly involved in the action, and are responsible for the results. (Dimiyati and Muhjiono, 2002)

To implement the effective teaching needed some condition (1) learning is active, both mentally and physically, (2) motivation, (3) planning before teaching, (4) The influence of suggestive teachers, should be given also to the students, (5) The teacher must able to create a democratic condition in school, (6) the presentation of materials to students, teachers need to provide a stimulating issues to think. (Slameto, 2003)

Chemistry is an experimental science, can not be learned only by reading, writing or listening it. Chemical Sciences not only learn to master a body of knowledge of facts, concepts, principles, but also is a process of discovery and mastery of the procedures or the scientific method. Therefore, in teaching chemistry there are two important issues that must be considered, namely the

chemical as a product of the scientists in the form of facts, concepts, principles, laws, and theories of chemistry as a process of scientific work. (Jahro, 2009)

Subject matter of abstract and concrete chemistry requires direct observation by the students towards the object and the material being discussed. Therefore, by using practical teaching methods are very effective delivery of teaching materials for students will be confronted with real situations. Practical methods of implementation in the laboratory is expected students will have the ability to think scientifically, is able to find scientific facts, identify, think critically and be able to accept criticism from fellow students owned a difference. Students are asked to experience for her/his, seek the truth and draw conclusions from what has been taught. (Simanjuntak, 2010)

Students are often difficult to understand the subject matter of abstract chemical or chemical material which is microscopic. This difficulty will bring adverse implications for students' understanding of chemical concepts, because basically the facts that abstract or a microscopic is explanation for the facts and concepts concrete. (GuruIT, 2009). Generally, teachers only emphasize the learning by using conventional method, rare used media in communicate the learning matter so that there is no interaction in learning. (Yamin, 2004).

Based on observation researcher in SMA N 2 Balige showed most of the students have opinions about chemistry. In their opinions, chemistry is difficult and abstract subject, also not interesting. When the students have examination test, the students that can passed the test only 7 students from 30 students per class with their KKM is 75 and it always happen when students get daily test after they finished to study 1 chapter and the others students always get remedial test. Some of the student that has mark above 75 are categorized as active student but some of them are categorized not active students.

In other school, based on informal interview with chemistry teacher in Senior High School where researcher will do the research at SMA N 1 Lubukpakam, the data was gotten that average value first daily test grade XI especially for XI IPA 3 class is 65 while their KKM is 75 and their average value for final test (UAS) is 75. So from that data it can be concluded that most of

students in this school have difficulties to study chemistry. Then from interview for students they tell that the teacher always teach students with conventional method and it make students not interest and feel bored when they learn chemistry and the other problem in this school is the students rarely do the experiment for chemistry eventhough in fact they have good facility for laboratory such as room, apparatus, materials and also lighting. The same problem also happen in Senior High School 2 Medan, the students are rarely do the experiment. The teacher usually used conventional method to teach them.

Experimental method is a way of teaching which provides the opportunity for students to find some facts that they need or want to know by themselves. This method emphasizes the activities that must be experienced personally, sought and found their own data and solutions. (Lazarowitctz and Tamir in Astri and Zainuddin, 2008)

Learning chemistry is closely associated with experiments suitable with the characteristic of chemistry as an experimental science. There are 2 important things that must be noticed in studying the chemistry that is chemistry as a result of the finding of experts such as principles, laws, theories and the chemistry as process that is scientific work such as laboratory experiment. One effort to improve student's achievement is to use laboratory experiment method. By laboratory experiment method, activities students will be more focused attention on the learning process and not on other things as well as students have the opportunity to develop the ability to observe all things that are involved in the process and can take the expected conclusions. (Nurasiyah, 2010)

Learning activity are all activities that done by a student in the context of learning to achieve the goals. Without any activity so the learning process will not be going well. Activity of students in the learning process not only to listening and writing. Increasingly more activities that done by students in learning, so the process of learning that happen will be better. According Sadiman (2008) studied activity is a principle or rules that very important in teaching and learning interactions.

Research using laboratory experiment method has been done by previous researchers, namely: Marlon (2008), with the research result by laboratory experiment method = 78.18 and by conventional method = 67.74. Beside that, Lubis (2007), with the research results of laboratory experiment method = 69.00 and by conventional method = 59.16, also Jahro (2009) with the results of design research methods lab PAS = 81.6 and practical methods of design without PAS = 68.7

The chemistry topics of salt hydrolysis is categorized as a difficult subject to be taught to the students as the contents of the subjects are difficult to understand. Salt hydrolysis is one of the subject matter in the even semester of Grade XI Sciences. One of learning activities that suggested by BSNP (Badan Standar Nasional Pendidikan) in syllabus KTSP 2006 is to designing and doing experiment to determine salt hydrolysis. From that learning activity so teacher has to combine the theory and practice when teaching of salt hydrolysis. So to make it easier for students to learn the salt hydrolysis, the author argues that laboratory experiment method is learning method that appropriate to be used to teaching salt hydrolysis.

From description above then the researcher interested in conducting research about practical method by the title: "**The Effectiveness of Laboratory Experiment Method To Increase Activity and Student's Achievement On Teaching Salt Hydrolysis**".

1.2. The Problem Identification

Based on the background, the problem identification in this research as follows:

1. Chemistry is difficult so as to impact student's achievement.
2. Students are difficult to understand the subject matter of abstract chemical or chemical material which is microscopic.
3. For all this time, chemistry learning only based on understanding of the concept.

4. Learning chemistry is based on the cooperative so as to impact the independence of students that can be seen from the student's activities.

1.3. The Research Scope

This research is focused on the following:

1. Chemistry students' achievement on the subject of the Hydrolysis in the even semester of high school class XI school year 2011/2012 at SMA N 1 Lubukpakam, SMA N 2 Medan and SMA N 3 Medan.
2. Learning activities were observed limited to activities related to attention to give questions, answer questions, give suggestion/argument, doing experiment/doing discussion group, write notes for observation result in experiment/discussion group result, doing test/solve problems, make conclusion from experiment/discussion result.
3. Student learning activities are categorized on the category of high and low.
4. Student's achievement on the subject of salt hydrolysis in even semester grade XI senior high school and be limited to the cognitive area of Bloom's taxonomy includes aspects of knowledge (C_1), understanding (C_2), applications (C_3), and analysis (C_4).
5. Learning strategies that used for the experimental class is the learning to use a laboratory experiment method.

1.4. The Problems Statement

Based on the background, problems identification and research scope above, so the problems statement in this research are:

1. Did laboratory experiment method effective to increase student's activities on teaching salt hydrolysis?
2. Did laboratory experiment method effective to increase student's achievement on teaching salt hydrolysis?
3. Is there relationship between student's activities and students' achievement that is taught by laboratory experiment method on teaching hydrolysis?

1.5. The Research Objectives

Based on the problems statement above, so the objectives that has been achieved in this research are to know:

1. To investigate the effectiveness of laboratory experiment method on teaching hydrolysis by looking the student's activities related to the chemistry subject after applying laboratory experiment method compare with conventional teaching method.
2. To investigate the effectiveness of laboratory experiment method on teaching hydrolysis by looking the student's achievement on solving problems dealing with related to the chemistry subject after applying laboratory experiment method compare with conventional teaching method.
3. To investigate the relationship between student's activities and student's achievement with laboratory experiment method on the teaching hydrolysis.

1.6. The Research Significance

The significance of this research are:

1. As information and input for chemistry teachers that laboratory experiment is one method that effective to be used for improving the quality of teaching and learning process chemistry to make it more effective, an effort to improve students' achievement.
2. Be using as information and reference for teachers, managers, developers of educational institutions, and subsequent researchers who will to examine in more depth about the use of laboratory methods in learning chemistry as one of the effective teaching strategy.

1.7. The Operational Definitions

To avoid the distinction or misconception of some words in this research, so in this research writer make some operational defenition that is:

1. Effectiveness

Effectiveness is influence condition, successful to effort or action. (Kamus Besar Bahasa Indonesia, 1997) On this research, the effectiveness means successful from the using of Laboratory Experiment Method on learning hydrolysis topic XI science. The indicator of effectiveness is if the average of student's learning outcomes that follow the learning with laboratory experiment method is better than student's learning outcomes that be taught by conventional method.

2. Conventional method

Step of conventional method in this research still focused on teacher include preparation phase, discussion phase, training phase, assignment, feed back.

3. Laboratory Experiment Method

Experimental method is a way of teaching which provides the opportunity for students to find some facts that they need or want to know by themselves. This method emphasizes the activities that must be experienced personally, sought and found their own data and solutions. (Lazarowitcz and Tamir in Simalango and Zainuddin, 2008). To apply laboratory experiment, there are some activities steps that must be done by teacher, such as, determine the objective of experiment, design the procedure of experiment, prepare apparatus and materials that will be used and prepare worksheet for students.(Jahro, 2008)

Laboratory experiment method in this research means learning strategy that focused to the students that observed based on student's achievement and student's activities by using instrument test and observation sheet.

4. Learning activities are all activities that done by a student in the context of learning to achieve the goals (Sadiman in Siregar, 2010) include, (1) *give attention to teacher's explanation*, (2) *give question*, (3) *answer the question*, (4) *give argument/suggestion*, (5) *observing the change that happen in experiments/seriousness follow the teaching learning process*, (6) *record a note* , (7) *discussion/cooperation in group*, (8) *doing test*, (9) *enthusiastic follow the lesson and* (10) *collecting the report of experiment/ summary report of discussion group*.

The characteristic of learning activities in this research are (1) *give question*, (3) *answer the question*, (4) *give argument/suggestion*, (5) *write a note for observation result in experiment/discussion group result*, (6) *doing test*, (7) *make conclusion from experiment/ discussion result*. It has been chosen based on the validation process of lecturer or content validation.

5. Student's Achievement

According to Catharina, student's achievement is the changing of behaviour that obtained by the students after undergo the learning activities.

Student's achievement in this research means student's achievement at aspect of concept understanding, logical, communication and problem solving.

