

## CHAPTER I INTRODUCTION

### 1.1 Background

Learning is an interaction process between students with teachers and learning sources in a learning environment. Learning is the support that is given by teachers so that process of knowledge acquisition, mastery of character and ability, and also the formation of attitudes and beliefs on the students can be happened. In other words, learning is a process to help students to learn well. The learning process experienced throughout the life of human and can apply anywhere and anytime.

Learning has a similar meaning with teaching, although both of them have a different connotation. In the education context, teachers teach so that students can learn and master the lesson content to achieve something specified objective (cognitive), can also influence attitude changing (affective aspect), and skills (psychomotor aspects) of students, but this teaching process gives an impression, it is just the only one side job, that is teacher's job. While in learning process implies the interaction between teachers and students.

Quality of learning depends on students' motivation and teacher's creativity. Students who have high motivation are supported by teachers who are able to facilitate the motivation to carry on the successful achievement of learning targets. Learning targets can be measured through attitudes and abilities changing of students through the learning process. Good instructional design, supported by good facilities, coupled with teacher creativity will make students more easily to reach the target of learning.

Learning media is a means of delivering a learning message to do with the direct learning model that is the way the teacher acts as a transmitter of information and in this case the teacher should use a variety of appropriate media. Learning media is teaching and learning aids. All thing that can be used to stimulate thoughts, feelings, concerns and the ability or skills of learners in order to facilitate the process of learning.

Based on preliminary survey conducted in SMA Negeri 3 Medan in 2013 it was found that the main problems frequently happen to the students is their perceptions that think that chemistry is the hard materials. The big reasons of students' difficulties when studying chemistry is students still find difficulties to understand the textbook that used in teaching and learning process and sometimes the teachers cannot explain the materials very well. Other reasons of students' difficulties are the teachers rarely to make some experiment in laboratory and making some interactive media, and because of that the students feel bored because they just know chemistry is a calculated material. Actually chemistry is interested materials because chemistry can be finding directly in our daily life phenomenon. Because of the reason, more than 75% of students agree that in learning chemistry required learning support facilities such as **modules** that not only contain words but also some picture and animation to make chemistry more interested.

One effort that can be done to solve the problem as described above is adding some learning media, which is using **interactive learning module**. According to Nasution, (2005) The objective of learning module are, (1) to open the students' challenge to study based on their acceleration, (2) to open the students' challenge to study on their learning styles, (3) to give the choice from a number of topic in a subject matter, (4) to give the opportunity so that students are able to know their weaknesses and revise it by remedial module, remedial test, or varicosity in teaching style. There are some advantages of learning with the module according to Mulyasa, (2003), as compared with other teaching materials are: (1) Focus on individual abilities of students, because in fact they have the ability to work independently and take more responsibility for their actions. (2) The control of the learning outcomes through the use of competency standards within each module that must be achieved by learners. (3) The relevance of the curriculum indicated by the destination and way of achieving, so that learners can find the link between learning and results to be obtained.

Interactive learning module contains some interactive learning, it means that the students can be involve in the learning not only focus in the teacher. So, the

interactive learning module using macromedia flash to show animation and using problem-based learning model to make students creative and have critical thinking to solve some chemistry problem. Problem-based learning is characterized by students working in pairs or small groups to investigate puzzling, real life problem. In problem-based learning, students will give some problem that come from real-life or from the environment phenomenon, and then they analyze them, and discuss it in groups in class. This is very interactive learning, so that students can change their perceptions about chemistry is a bored lesson, a lesson just can calculate something.

It has been proved by Masitho Purnama Sari in her Research entitled The Effectiveness of Interactive Learning Module to Improve SHS Student's Learning Outcomes on The Teaching of Redox. The results of her research in SMA Negeri 3 Medan are students who use learning modules is 50.92% higher than students without use learning modules which amounted to 36.94% and it is also in SMA Swasta Al-Ulum Medan are students who use learning module is 44.5% higher than students without use learning modules which amounted to 36.90%. It is also proved by Dameita Sumbayak in her research entitled The Development of Chemistry Learning Module To Increase Student's Achievement on The Teaching and Learning of Oxidation and Reduction Reaction. The result of her research on the experimental class (used learning module) is 52.48% higher than the control class (without used learning module) is 51.12%. It is shown for students who learn chemistry without use module is higher than students who learn chemistry without use module. It can see in the result of research, the average of students learning outcomes with using module higher than the average of students learning outcomes without using module.

Interactive learning module in problem-based learning designed learning actively, because in the learning process, students no longer act as passive learners who just listen and record teacher when teaching, but they are active learners. In the interactive learning module in problem-based learning, teacher act as managers, advisors, councilors, facilitators, and the drivers of student learning activities. Teachers will give basic problem that found in daily life related with

chemistry topic, and then students will analyze that by using experimentally in a small group discussion. Not only experimentally activity in interactive learning module also has multi-media concepts, that is macromedia flash. It will make an animation, so the students will become interest and understand deeply about the chemistry topics. Looking at the problem of learning as above, researcher interested in conducting research that's title "**The Effectiveness of Interactive Learning Module with Macromedia Flash in Problem Based Learning to Increase Student's Achievement and Foster Student's Creativity in Teaching of Colloidal System**"

### **1.2 Problem Identification**

Based on the backgrounds that have been raised from the issues, the problem can be identified are:

1. The ability of students to understand and apply chemical concepts is still low, because they think that chemistry is not interested based on the textbook that they used
2. There are still the chemistry book that is not suitable with curriculum nowadays as learning media
3. Teachers always have difficulties to prepare interactive media in teaching and learning process
4. The textbook used in senior high school still not using the facilities such as, laboratory, computer, internet to the maximum using for chemistry learning

### **1.3. Problem Statement**

Based on the background above, the problem statement of this research are:

1. How is the teacher's perception on colloidal system as the subject matter on the textbooks composed based on KTSP curriculum that is being used?

2. How is the respond of lecturer, teacher, and students on the interactive learning module composed based on 2013 curriculum in colloidal system as the subject matter?
3. Are the student's achievement between using interactive learning module is higher than student's achievement with textbook regularly publisher?
4. How does the effectiveness of interactive learning modules on the teaching of colloidal system to foster student's creativity?
5. How much the correlation of creativity towards student's achievement on the teaching of colloidal system?

#### **1.4 Problem Limitation**

This research was limited to the problem on the arranging and applying the interactive learning module with macromedia flash animation in problem-based learning on the teaching of colloidal system by comparing the class which using the interactive learning module with the class without using interactive learning module in XI grade 2<sup>nd</sup> semester.

#### **1.5 Research objectives**

The purposes of this research are:

1. To obtain teacher's perception on colloidal system as the subject matter on the textbooks based on KTSP curriculum that is being used
2. To obtain the interactive learning module based on 2013 curriculum that is suitable for students to their competence in topic colloidal system
3. To know the student's achievement that using interactive learning module is higher than student's achievement with textbook regularly publisher.
4. To know the effectiveness of interactive learning modules to foster student creativity on the teaching of colloidal system

5. To know the contribution of creativity towards student's achievement on the teaching of colloidal system.

### **1.6. Research Benefits**

The benefits of this research are:

1. As input material for chemistry teachers to use this interactive learning module as learning media that will be used in teaching of the learning material especially colloidal system
2. As a comparison or input for researcher who want to investigate the effectiveness of this interactive learning module in student's achievement and student's creativity that is related with this research objectives

### **1.7. Operational Definition**

1. SHS is refers to Senior High School
2. Learning Module is one of the teaching materials are packed full and systematic, in it contains a set of learning experiences planned and designed to help students master the specific learning objectives
3. Learning outcomes is the ability of students after the teaching and learning process, include in student's achievement as cognitive aspect and student's character as affective aspect
4. Interactive Learning Module means module which is used computer programme not only Mc. Power Point to show the slide but also macromedia flash to show the animation and it is followed by CD interactive which had contains some explanation about the topic, picture, video, and animation related to the topic