

CHAPTER I

INTRODUCTION

1.1. Background

Education is one of the most important things in the world. On the basis of wisdom and sanity grounds, education is the light that enlightens in them the ability to differentiate between right and wrong, true and false, correct and incorrect and also is the milestone in the development of integrated personality, the righteousness in character, the enlightenment of conscience and the inculcation of social, moral, ethical and spiritual values.

Education that should be implemented for Indonesia, according to the Law no.20 / 2003 on National Education System is education that can develop the skills and character development and civilization of dignity in the context of the intellectual life of the nation (Article 3); and actively develop the capacity of students to have spiritual powers, religious, self-control, personality, intelligence, noble character, and skills needed him, the community, the nation, and the state (chapters 1: 1; 3).

The educational goal of course is supported by the current study that curriculum of 2013, where we can see that the core competency in all educational material has been stated, especially in the core competencies to which: (1) Living and practice the teachings of their religion. (2) Living and practicing honest behavior, discipline, responsibility, caring (mutual assistance, cooperation, tolerance, peace), polite, responsive and proactive, and demonstrate behaviors as part of a solution to various problems in interacting effectively with the social environment and nature and the place itself as a reflection of the nation in the association world. (3) Understand, implement, and analyze factual knowledge, conceptual, procedural, and metacognitive based on curiosity about science, technology, art, culture, and humanities with human insight, national, state, and civilization-related causes of phenomena and events, and apply the procedural knowledge in a specific field of study according to their talents and interests to

solve the problem. (4) processing, reasoning, and presenting in the realm of concrete and abstract domains associated with the development of the learned in school independently, act effectively and creatively, and be able to use the method according to the rules of science. By learning has been supported by the device then the next is to achieve these objectives it is necessary to effective learning

Learning is an inseparable part of the educational process. Because education cannot happen just like that without going through the process of learning and exercises. Learning in order to effectively and efficiently, there should be a variety of efforts and approach to suit the purpose, in an effort to improve the quality of education.

The appropriate learning in the educational process must aimed to achieve the main goal of education itself. For that to achieve that goal, we have made many innovative learning model developed with the aim to streamline the educational process itself. Model of inquiry learning, discovery, problem based learning, project based learning, and others are examples of the many learning model developed at this time. All learning model that certainly aims to achieve the main goal of the educational process and streamline the process.

Although many learning models that have been developed, but there are things to consider that the selection of appropriate learning models appropriate for the subject matter as well. Because even though the learning model that we use has been innovative but if the subject or the material we teach is not appropriate or suitable for the material then it is not even efficient learning process but instead stunted and produce results that are not in line with expectations. Because it needs to be careful consideration and selection of the right model for the right subject or learning material.

Learning media is one of the tools that the learning process is intended to optimize the learning process and obtain maximum results. One of media that can be found today are learning modules. Where the module is a textbook or handbook to help participants better understand the students to the material being taught. This has been proven by many studies that prove the effectiveness of the module in the learning process, one of which is Dameita Sibayak with research

entitled The Development of Chemistry Learning Module To Increase Student's Achievement on The Teaching and Learning of Oxidation and Reduction Reaction. In that study results obtained from the experimental class that uses the module is 52.48% higher than the control class that does not use a module is 51.12%.

Module experiment is one medium that is great for use in learning due to the presence of the module, the learning process, especially experiments can easily be done with the hope of getting maximum results. The learning module has to be able to help students to study by their style independently, so they use different technique to solve certain problems based on their knowledge background and their ability (Situmorang, et.all., 2012)

Innovative module is the kind of modules that are developed and compiled with the creative and efficient. Innovative module contains not only words but also can be an image or chart with attractive colors. This will attract students to read the module innovative and students will more easily understand the material provided.

Chemistry is the science that is very complex. Chemistry is perceived by students as a challenging subject, since it is difficult to construct the abstract concepts frequently encountered in the subject area (Ayas & Demirbas, 1997; Nakleh, 1992). Chemistry is one of the subject that laboratory or experiment basis. One of the materials studied in chemistry are buffer solution. On the topic buffer solution should be emphasized mastery of concepts are accompanied by experiments conducted. Buffer solutions are materials that are very close to our daily life, but with no proper teaching the concept of buffer solution are close to daily life can be difficult to be understood by students.

According to my experience during my PPLT in SMA Plus Negeri 1 Matauli Pandan,, the school have good facilitation such as chemistry laboratory and have qualified teacher that enough to support the learning process. The experiment of chemistry is not doing optimally in SMA Plus Negeri Matauli because of lack of good experiment or guide practicum textbooks they have.

Experiment books or guide practicum textbooks they use is not interesting, not comprehensive, and has many difficult experiments.

Because of lack of experiment books, researcher chose innovative chemistry module with integration of experiments to fix that problem. Provision of data, information, and the question in this case is through an innovative chemistry module with integration of experiment included in the making of the conclusions will be based on the modules. And based on that, the researchers made research entitled “**The Development of Innovative Chemistry Module with Integration of Experiment on The Teaching Buffer Solution** “

1.2. Problems Identification

Based on the background described above, problems can be identified as follows :

1. Lack of ability of student in understanding chemistry especially in experiment because the experiment or guide practicum book they used is not interesting so they don't interested about chemistry.
2. Student mostly understanding only theoretical of chemistry but lack of understand in practical or experiment of chemistry.
3. The arrangement of chemistry experiment learning modules on the topic of Buffer Solution to order it is suited to the common curriculum
4. Prepare an innovation chemistry experiment learning modules on the topic of Buffer Solution in order the teaching and learning process can be proceeded optimum.
5. Standardize a developed Innovative chemistry module with integration of experiments according the standard provided by BSNP.

1.3. Problems Statement

Based on the background described above, then the problem can be formulated as follows:

1. How is the teacher's perception on buffer solution as the subject matter on the experiment textbooks composed based on 2013 curriculum that already used?

2. How is the respond of lecturer, teacher, and students on the innovative learning module composed based on 2013 curriculum in buffer solution as the subject matter?
3. How to prepare an innovative chemistry learning module with integration of experiment on the topic of Buffer Solution in order the teaching and learning process can be proceeded optimum?
4. What kind of innovation can be made on to the learning material of Buffer Solution in order the students can easily to study chemistry?
5. How to standardizing a developed innovative chemistry module with integration of experiment according the standard provided by BSNP?

1.4. Problem Limitation

In order for this study the problem in this study should be limited. From the formulation of this problem, so that limit the problem in this study are:

1. Arranging and developing the innovative chemistry module with integration of experiment on the topic of Buffer Solution according to standard provided by BSNP.
2. Preparation of innovative chemistry module with integration of experiment developed from the chemistry guide practicum textbooks used in some Senior High School in Medan.
3. Analyze the chemistry experiment textbook used in Senior High School on the topic of Buffer Solution.
4. Innovative chemistry module with integration of experiment will be reviewed and revised by the chemistry lecturer in Chemistry Department, chemistry teacher from various Senior High Schools, and students from Senior High School to obtain the standard of innovative chemistry module with integration of experiment.
5. Development of innovative chemistry module with integration of experiment only reach until standardization stage, not to the implementation stage.

1.5. Research Objectives

The objective of this research are :

1. To obtain teacher and lecture's perception on buffer solution as the subject matter on the experiment textbooks based on curriculum 2013 that already used.
2. To obtain the innovative experiment learning module based on 2013 curriculum that is suitable for students to their competence in topic buffer Solution.
3. To prepare an innovative chemistry module with integration of experiment on the topic of Buffer Solution in order the teaching and learning process can be processed optimum.
4. To know what kind of innovation can be made on to the learning material of buffer solution in order the students can easily to study chemistry.
5. To standardized a developed innovative chemistry module with integration of experiment according to the standard provided by BSNP.

1.6. Benefits of Research

The benefits of this research are:

1. As input material for chemistry teachers to use the innovative chemistry module with integration of experiment as learning media that will be used in teaching of the learning material especially Buffer Solution.
2. Provide guidelines for science teachers especially chemistry teachers to implement Innovative chemistry module with integration of experiment in learning process.
3. Give reference of best learning media (Innovative Chemistry Module with Integration of Experiment) which can improve the students' achievement on the teaching of buffer solution based on the 2013 curriculum
4. Give motivation to teachers to conduct similar and better research examining learning media to chemistry topic.
5. Provide inputs for next researchers to do similar research in the future.