

CHAPTER I

INTRODUCTION

1.1 Research Background

Development of learning module is very important and very interesting to be discussed and it's believed that using the learning module that have developed can increase students' achievement especially in chemistry topic. Development learning module in English version is very important for this moment, as we know that Indonesian Education still in process to compete with another country. In Globalization era we forced to use as International Language that is needed to be mastered. We need English to communicate with foreigners in the field of development, technology, economy, and education. Qualified education will create students who are able to compete internationally. Government has an effort to increase the quality of our education in Indonesia, which has one purpose, able to compete internationally. One of efforts that can be observed is the existence of Bilingual class in *Rintisan Sekolah Berstandar Internasional* (RSBI) or *Sekolah Berstandar Internasional* (SBI).

Teaching and learning in Bilingual class use two languages, those are Bahasa Indonesia and English, especially for subject matter such as, Mathematics, Chemistry, Biology, and Physics. For getting the concept of Bilingual class, there are some prerequisites, such as (1) learning substances should be suitable with students' cognitive development and student's English improvement, (2) School is able to create conducive learning environment in using English, (3) learning is forced to solve problems and students do cooperatively. (<http://gurupembaharu.com/home/?p=2733>).

North Sumatera has some Bilingual class in SBI and RSBI. School which get predicates as RSBI. Some of schools that has RSBI or SBI predicate are; SMA Negeri 1 Medan, SMA St.Thomas 1 Medan, SMA Swasta Budi Murni Medan, SMA Swasta Al-Ulum Medan, SMA Syafiatul Amalia Medan SMA Negeri 1 Tebing Tinggi, SMP Negeri 1 Tebing Tinggi, SMA Negeri 1 Berastagi, SMA

Negeri 1 Lubuk Pakam, SMA Negeri 1 Sidikalang, SMA Negeri 2 Plus Sipirok, SMA Negeri 2 Kisaran, SMAN 2 Balige etc.

Based on observation during done training teacher program in SMA Negeri 1 Tebing Tinggi, there are two main gaps: (1) chemistry teachers' English skill is low and (2) the quality of Bilingual chemistry books was not standard from their content and language. The standard categorize is from Curriculum Education Unit. To reach the objectives of RSBI and SBI, both of those gaps should be solved. Experience in training school showed that the biggest gap was english skill of chemistry teacher in RSBI was low. It's mean that senior teachers who are mastered in Mathematics, Chemistry, Biology, and Physics could not teach their subject matter by using English. None of teacher is able to used English while teaching and learning process. They used English only in opening session and closing session. This gap will be solved because State University of Medan has a Bilingual program for Faculty of Mathematics and Natural Science. Candidate of professional International teacher will be graduated next year. The second gap is the qualities of Bilingual chemistry books are not standard from their contents and language. Students use Mathematic book, Chemistry book, Biology book, and Physics book in Indonesia version. Bilingual books as a supplement. To overcome this gap, it's important and interesting to develop chemistry learning module which would be standarized in content, language, and its presentation.

Module is a complete unit, independently, it consist of a series of learning activities that is arranged to help students in reaching the objectives that has formulated specifically and clearly. Module is a set of curriculum that is prepared to learning autonomously. Module learning give chance for students to learn by their style, so they use different technique to solve certain problems based on their knowledge background (Nasution, 2005). But in this case module is designed as a learning media that consist of learning materials. It is created communicatively. The material will be discussed is clear and measurable. It is concerned in learning activities of people who use it (Munadi, 2008). Module is a printed media that can help teachers to increase their students' achievement. According Sunyoto (2006),

learning module could improve student's achievement in automotive mechanic-engineering of SMK Panca Bhakti Banjarnegara course year 2005/2006. From the calculation of t_{count} is bigger than t_{table} means that students using interactive learning module have better learning performance.

Factually, learning chemistry can be concluded that, (1) chemistry is not famous subject matter for students; (2) chemistry is not able to improve students' cognitive ability; (3) chemistry make a gap between teacher and students; (4) chemistry has not improvement. Even thought school programs have an effort to develop students' conceptual understanding, but there is no relationship among the materials (Burhan, 2008). The material in chemistry is needed to be developed. Especially in topic Oxidation and Reduction Reaction that is difficult to be understood by students. Usually teacher explains this topic by conventional method, difficult language to be gotten, and inappropriate learning media.

Based on gaps above, it is better to develop a module that is written in Bilingual version, and it has standardized content to help teaching and learning chemistry in Bilingual class, RSBI, to create effective learning. The writer is interested to do research with the title **“The Development of Chemistry Learning Module to Increase Student's Achievement on the Teaching and Learning of Oxidation and Reduction Reactions”**.

1.2. The Problem Identification

Based on the background explained above, there were some problems which identified to make the research be formed. The problem identification were:

1. How does the sequence of chemistry materials to be arranged in the module in order the topic of Oxidation and Reduction Reactions is easy to be learned and it meet the curriculum education unit?
2. How to make learning module in topic of Oxidation and Reduction Reactions be attractive, easy to be understand, can increase the students' achievement in order it can be used to help students to learn chemistry?

3. How do the chemistry teachers opinion on the standard learning module in topic Oxidation and Reduction Reactions?
4. How does the effectiveness of learning module in topic Oxidation and Reduction Reactions can be used to increase students' achievement in chemistry?

1.3. The Problem Formulation

The problem formulation of the study were:

1. Did the sequence of chemistry materials that will be arranged in the module in order the topic of Oxidation and Reduction Reactions was easy to be learned and it meet the curriculum education unit?
2. Did teachers' perception that learning module had fulfilled the standard categorize?
3. Did the learning module in topic Oxidation and Reduction Reactions could increase students' achievement class X, academic year 2012/2013?
4. Did the learning module in topic Oxidation and reduction reaction effective to be used in increasing student's achievement?

1.4. The Scope of Research

There were so many problems that had identified; the writer limited the problems as below:

1. Developing and standardizing module in topic Oxidation and Reduction Reactions will be concerned on the content, language, and its presentation.
2. The sources of module that will be developed are from minimal 4 chemistry books that usually used by RSBI or SBI students.
3. This module will be assessed and revised by chemistry teachers, chemistry lecturers and the students until the resulting product of learning modules.
4. The trial of learning modules for teachers and students is limited.

1.5. The Research Objectives

The specific research objectives were:

1. To arrange the sequence of chemistry materials in the module in order the topic of Oxidation and Reduction Reactions is easy to be learned and it meet the curriculum education unit.
2. To observe chemistry teachers' opinion on the standard learning module in topic Oxidation and Reduction Reaction.
3. To know if learning module in topic Oxidation and Reduction Reactions can increase students' achievement class X, academic year 2011/2012.
4. To know whether learning module in topic Oxidation and reduction reactions effective to be used in increasing student's achievement.

1.6. The Significance of Research

The advantages that were hoped from this research:

1. Chemistry teachers can use learning module to make an effective teaching and learning process and to increase students' achievement.
2. For researcher, to develop and standardize the module in increasing student's achievement.
3. Students who learn chemistry can understand the topic of Oxidation and Reduction Reaction easier, more attractive, and enjoyable.
4. For the next researcher, can contribute the idea to do other researcher.