

CHAPTER 1

INTRODUCTION

1.1. The Background of the Research

Human resource is an important determinant of a nation's progress, but on the other hand it should be realized that the quality of Indonesian human resources is still far from ideal and lags behind neighboring countries. Agency reports the union of the nations (UN) for the field of education, united nation educational, scientific, and cultural organization (UNESCO) shows Indonesia's ranking in terms of education fell from 58 to 62 among 130 countries in the world. Clearly, education development index (EDI) Indonesia is 0935, under Malaysia (0945) and Brunei Darussalam (0965). Decline in the index mirrors the low quality of education in Indonesia is only a small picture of the education sector, among others, can be seen from how the performance of students, teachers, schools, and the quality of human resources or human capital (human capital) which is derived as the output of the education system in Indonesia compared with other countries in the world. Continued decline of the human development index (Human Development Index / HDI) which illustrates that the quality of education we are increasingly in question.

Nowadays, our government is actively encourage the education in Indonesia. It is recognized that education in Indonesia is lagging far behind if we compare with developed countries in the world. One of the government's efforts that we can see is with many schools as RSBI predicate or SBI. Especially in North Sumatra, almost every region has minimal 1 school which has been get that predicate. School which get the predicate as RSBI and SBI will try to use English as the primary language in school, include in communication and also the material used in teaching and learning process. Government and every person include in education has the big homework to complete anything important in develop the quality of education in Indonesia.

There are so big expected into RSBI and SBI class, especially in teaching exact subject, hopely student in RSBI and SBI class be able to compete internationally. Because using english in teaching and learning process will make student become usual to use english, that use as international language. As we know that the ability of using english as language make student easily to compete with another students in others country or modern country.

The survey shows that 42% of the special education teachers received no preservice training in science and education, and nearly 60% reported using the general education textbook as the basis of their instruction. The science textbook is a key element in science instruction in general education, as well. Dependency of the text is understandable such practice is efficient, if not effective, and it provides a crutch for the teacher who has only minimal background in science. At the same time, dependency on the text is questionable for student with mild disabilities, because one of their limitations is reading.

In addition to their difficulties with reading text materials, students with mild disabilities also experience difficulties with text structures. Studies have shown that textbooks are often poorly organized in terms of their structure, coherence, unity, and audience appropriateness and may be inaccurate. Textbook development is important to teach student who do not learn through traditional methodologies, and these recommendations should be practically applicable. Considering how much teachers depend on the textbook.

To ensure access to the material in the textbook for all students, teachers could provide study guides with questions and activities. These guides assist students as they read selections, highlight key points, and provide a structure for reflection. When teachers use the textbook as a resource and reference, students learn to do the same.

Educational innovation is a plan or pattern that can be used to build the curriculum, designing instructional materials and as director of learning activities within or outside classroom. Innovation in education is often associated with the renewal that comes from creative thinking, finding, and modification that includes

ideas and methods used to solve a problem of education (Riskin et al., 2006). Learning innovation using module is necessary to do in order to increase students' achievement so that impressions of learning take long remember by students (Tompkins et al., 2006).

The implementation method of teaching by organizing the material is divide the learning into learning units, each section includes one or more subjects. The parts are called modules of learning materials. Learning system with module facilities have been developed both overseas and within the country, known as Module Learning System, whose purpose is:

- 1) Shorten the time required by students to master the task of the lesson
- 2) Provide as much time as needed by the students within the limits that it is possible to carry out organized education (Santayasa, 2009).

KTSP requires certain criteria to be used as teaching materials. The module is one of the teaching materials to be used quite effectively. A teaching materials are made to be methodological and systematic. This means that teaching materials must be read and understood the students and are arranged in stages and gradually. So the basic competency achievement that has been established can be mastered with maximum.

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). Module is designed for autonomous learning system. It is created communicatively. The material will be discussed is clear and measurable. It is concern in learning activities of people who use it (Munadi, 2008). Module can help teachers to increase their students' achievement.

According Sunyoto, learning module could improve students achievement automotive mechanic engineering of SMK Panca Bhakti Banjarnegara course year 2005/2006. Based on t-test, t count is $4,303 > t$ table (1,67) that means students using interactive learning module have better learning performance.

In North Sumatra, most of school still predicate as RSBI or still use bilingual program, not using full English yet. The schools which get the predicate are : SMA N 1 L. Pakam, SMA N 1 Tebing Tinggi, SMA N 1 Kisaran, SMA N 2 Balige, SMA N 1 Berastagi, SMA N 1 Sipirok, SMA Al-Ulum Medan, SMP N 1 Tebing Tinggi, SMP Safiyatul Amaliah and others. In the application, bilingual program use 2 language in teaching and learning program , Bahasa Indonesia and English. And it's only use in exacta subject like Mathematics, Chemistry, Physics, and Biology. While other subject still adapted with the bilingual program.

In the some result of research, (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; (3) chemistry has not improvement. Even thought school programs have an effort to develop students' conceptual understanding, but there is no relationship among the materials (Perry Burhan, 2008). The material in chemistry is needed to be developed. Especially in Atomic Structure and Periodic Table as the basic topic for senior high school students. Usually teachers explain this topic by conventional method, difficult language to be gotten, not interest student and inappropriate learning media.

Based on problems above, the writer make a module that is written in English, and it has standardized content to help teaching and learning chemistry in Bilingual class, RSBI, to get the effective learning. The writer is interested to do research with the title **“The Effectiveness of Learning Module to Increase Student Achievement in the Teaching of Atomic Structure and Periodic Table for Senior High School (SHS) Students Grade X”**.

1.2. The Problem of Research

Based on the above, then the problems identification is:

1. How does the composition and chemical materials ideal sequence contained in the chemistry of learning modules on the subject of atomic structure theory with curriculum content standard?
2. How is the good form of learning modules on the subject of atomic structure for attractive, easy to understand and to improve student learning outcomes?
3. How the effectiveness of learning modules on the subject of atomic structure and periodic table in improving student achievement?

1.3. The Problem Statement

As for the formulation of the problems in this research are:

1. Does using learning modules can improve students' achievement class X, Academic Year 2012/2013?
2. Is there a difference in student achievement when using atomic structure and periodic table learning module with using guidance book?

1.4. The Scope of Research

1. Develop a learning module on the subject of atomic structure and periodic table concern to the language, content, and the presentation.
2. Assessment and revision of these modules will be done by students, teachers, and lecturer until the resulting product of the learning modules.
3. The school to do research are 3 school which has the predicate as RSBI or SBI
4. This module will be arranged from minimal 4 chemistry books as the sources.

1.5. The Objective of Research

1. To develop a chemistry module on the subject of atomic structure and periodic table based curriculum content standards.
2. To find out how the chemical form of learning modules on the subject of atomic structure and periodic table for attractive, easy to understand and to improve student learning outcomes.
3. To know how the chemistry teachers' opinions toward chemistry learning module on the subject of atomic structure and periodic table.
4. To know how the effectiveness of learning modules on the subject of atomic structure improving students learning outcomes.

1.6. The Significance of Research

This research is expected as follows:

1. For chemistry teachers, to use learning module in learning process that can improve students' achievement.
2. For students, to improve their motivation to learn and also the understanding about atomic structure theory.
3. For the researchers to make a further research related to the study.
4. For the next researcher, for inspiring to do the next research