

CHAPTER I

INTRODUCTION

1.1 Background

English has been taught as a foreign language subject in any educational levels in Indonesia. But most of the students got problem when they learned English. According to Musthafa (2005) the problem appears because of the low intensity of exposure of English in society. It is in accordance with what Hariyanto (2007) and Nunan (1999) said that some students were successful in learning and mastering English when they were still going to school and when they were in English class. Then, when they had graduated, it vanished slowly since they hardly got exposures to English.

Nowadays, the above paradigm has changed into positive paradigm in which English is needed and taken on every occasion. Especially in education system, the Indonesian government has tried to revise the policy and he puts English as a language should be mastered by pupils. The policy of educational system is made to help students be ready to face the globalization era, in which everybody should be ready to compete internationally and to master knowledge and technology.

In line with the statements above, the government has done some improvements to reform the educational system by deciding a policy, namely: the law

of National Educational System (Undang-undang Sistem Pendidikan Nasional/UUSPN no. 20, 2003). One of the sections of the policy is section 50 verse 3 which says that: *central and/or district government is suggested to organize at least a unit of education in every level of education, and it should be developed as an international education level* (Dinas Pendidikan Provinsi Riau, 2007).

It can be seen that the government focuses on the establishment of some international schools called the pilot international standard school that refers to as Rintisan Sekolah Bertaraf Internasional (RSBI/SBI) to create and gain the global educational system. The establishment of the school is based on the regulation of national education system number 20, 2003 section 50 verses 3 and other policies which support RSBI/SBI program are:

1. The regulation of District Government, number 32, 2004.
2. The regulation of the balancing finance between central government and district government, number 33, 2004.
3. The regulation of National Development Program, number 25, 2000.
4. The governmental regulation of Education National Standard, number 19, 2005.
5. The ministerial education regulation of Content Standard, number 22, 2006.
6. The ministerial education regulation of Graduate Competence Standard, number 23, 2006.

7. The planning strategy of educational department of 2005-2009.
8. The ministerial education regulation of the Model of School Based Curriculum, number 6, 2007.

(National Education Department, 2008)

Based on the regulation of national education system number 20, 2003 section 50, verse 3, the school should run some rules and it has some characteristics that will be completely explained in the chapter II. One of the rules is teachers should use English in teaching learning process, especially teaching science and math. This rule is expected that students can acquire English for communication and they also can acquire science and mathematics in English.

In accordance with the above arguments, American Association for the Advancement of science says in Jarret (1999) that the ability to speak English and second language, combined with strong skills in mathematics and science, will provide unlimited opportunities. In addition, Soediby (2009) said that to improve our educational system, the government has developed logical educations that include science, math and language.

From the above explanation, it seems that English is important to apply in education especially in teaching and learning science and math in RSBI. The important of English in RSBI become one of the characteristics of RSBI (see chapter II). It might be relevant to what Emmit and Pollock (1991) say that language is central to learning and learning is central to teaching. So, as teachers it is particularly

important that we communicate effectively since communication is a major function of language (Emmitt and Pollock, 1991).

According to Mohan (1986), Krahnke (1987), Richard (2001), and Norland & Said (2006), the use of English in teaching and learning science is called Content-based Second Language Instruction or Content-based Curriculum or Topical Syllabus. It is strengthened by Mohan (1986) that we must look at language and learning across the whole curriculum. It means language and learning in the content class, as well as language and learning in the language class. And Mohan says this is as Language across Curriculum (LAC).

This approach seems to be called as bilingual education in Indonesia because it has the same characteristics with LAC program that includes: *ESL instruction, sheltered subject matter teaching, and instruction in the first language* (Krashen, 1997).

By running language across curriculum, according to Osborne, et al. (1983), these skills are new for the teachers and the students, unfamiliar and different from the language used in everyday life, and this may cause a problem in understanding of science and mathematics concepts. On one hand we have students who must learn science and mathematics content while they are still learning English (McKeon, 1994 and Slavit & Ernst-Slavit, 2007) and on the other hand, we have teachers, who themselves have proficiency problems with the new medium of instruction. These teachers who are not language specialist will have to cope with the double demand of transmitting content as well as language (Pandian and Ramiah, 2008). In other side,

this sudden change to the current science and mathematics medium of instruction may also cause cultural shock to the students (Aziz, 2008). And there might also be an anxiety of a tendency that the science and math teachers will show off their ability in mastering English (Lengkanawati, 2008) so that the teachers will not focus on explaining the materials but they might be more focus on the use of language or their ability of English.

Even though the teachers have studied English for several years when they were in school, most of them are not able to speak or use English as a tool of communication. So, they might be having problems to cover their subject area in an accurate and effective manner and the students might have difficulties to understand and acquire the subject.

The problems and difficulties appear because the nature of math and science language imposes a heavy burden on all students regardless of the language instruction (Cuevas, 1984; and Mestre, 1981 in George, et al. 1989). Especially for mathematics, it was known from the studies of Aziz (1992) and supported by Ihejieta's (1995) and Slavit & Ernst-Slavit's, (2007) that math was one of the interesting and important subject to learn but it was difficult one to learn.

Based on the information and statements above, this thesis wants to investigate of the implementation of RSBI, especially of using English or being bilingual in teaching and learning science and math. It is therefore essential for this research to explore teachers' and students' perceptions of using English in teaching

and learning science and mathematics in order to gather information and to get clearer picture on what have happenings in the school.

1.2 Objectives of study

Because the government has built about 200 RSBI in secondary levels since 2006 (Indosiar, 2008) and there is no research about the implementation of RSBI in Indonesia, the researcher wants to investigate whether the policy or the program of RSBI/SBI can be implemented in Indonesian secondary level or not. So, the aims of this study are to find out:

1. the extent of using English in science and math classes;
2. science and math teachers' perception on the use of English in teaching learning process; and
3. students' perception on the use of English in learning science and math.

In this study, the researcher wants to know whether the teachers and the students have positive or negative perception on the use of English as a mean of communication in teaching and learning science and math.

1.3 Research Questions

In line with the objectives of this study, there are three questions research as the main problem of this study.

1. To what extent do the science and math teachers use English in teaching learning process?

2. What are sciences and math teachers' perceptions about teaching sciences and math by using English?
3. What are students' perceptions about learning sciences and math by using English?

1.4 Significance of the Study

The findings of this study are expected to give contribution to the following parties. It is expected to give contribution to sciences and math teachers in preparing themselves to master English for teaching bilingual class in international class. It is also beneficial for the stakeholder, especially headmaster, to help the teachers in solving their problems and finding some ways to master English. And finally, before choosing or selecting a school as a RSBI/SBI, it is better for the government to observe the readiness of the human resources or teachers' ability, competency, proficiency, knowledge, perceptions, attitudes, and readiness towards the teaching of sciences and math in English or the running of RSBI/SBI. As Pandian (2002) asserts, what teachers know and can do, affect all the core tasks of teaching. In addition, Harmer (2001) states that the teacher can be as a controller, organizer, assessor, prompter, participant, resource, tutor, and observer for the learners. So, the position of teachers is important in running the program.

1.5 Scope of the Study

The respondents of the research will be sciences and math teachers because they have use English in transferring the materials since 2007 and international class of a RSBI/SBI in Pekanbaru. The school has been selected as RSBI/SBI since 2006 academic years. It means that students who are in international class have been already taught sciences and math in English.

Unfortunately, based on the researcher's small informal survey or preliminary research by interviewing some teachers and doing observation, it seemed that most of teachers felt afraid and they were not confidence to use English when they were teaching. They rarely used English in transferring the materials. Based on the interview, this condition happened because they felt that they lacked vocabularies, self confidence, and effort to learn. And they also did not want to make their students confuse in understanding and acquiring the subjects.

What happened to the teachers did not happen to the students. It seemed that they were enthusiastic about using English. Because of this contradiction, it may indicate that the teachers are not ready while the students are ready. In other words, there will be some weaknesses of the teachers will inhibit the success of the program.

1.6 Research Design

The research design of this study will be discussed clearly in chapter three of this thesis but this chapter informs the design of the study slightly.

1.6.1 Data Collection Techniques

1.6.1.1 Participant or Research Object

The respondents of this study are 3 science teachers and 1 math teacher and 76 of students of 2008-2009 academic years at RSBI/SBI.

1.6.1.2 Instrumentation

In order to get the information and data of this research, some data instruments will be used. They are observation, questioner, and interview.

1.6.1.3 Procedure

This study is started by doing observation in the classroom to see the process of using English in teaching and learning science and math. The observation is conducted for several meetings. After doing classroom observation, the questioner is given to the teachers and the students. The next is doing interview. Interview is needed to clarify unquestionable questioner items or to strengthen the questioner items because the questionnaire is the main data of this study.

1.6.2 Data Analysis

The data is analyzed by using qualitative case study. In this case, the data is explained and elaborated descriptively by using words and number. How the data analysis is conducted, it will be detail explained in chapter III of this thesis.

1.7 Clarification of Terms

In order to avoid misinterpretation, the terms used in this study are defined as follows:

- 1. Investigation.** In thefreedictionary, it is stated that investigation is the work of inquiring into something thoroughly and systematically. In addition, some similar definition say that investigation is a detailed systematic search and examination to uncover facts and determine the truth of the factors (who, what, when, where, why and how) of accidents (<http://www.chml.ubc.ca> and <http://moodle.esp-c.org>). This study will try to find out whether the RSBI/SBI program has been run at the school or not.
- 2. Implementation.** It refers to the process of carrying an undertaking, agreement, and promise into effect. Teaching and learning process of sciences and math in English at SBI is a kind of program or policy that should be run under control. There should be agreement among sciences and math teachers, English teachers, headmaster, and policy maker in running RSBI program.
- 3. RSBI or SBI.** The terminology of SBI or RSBI has become a hot issue in Indonesia since 2004. It is an abbreviation of Rintisan Sekolah Bertaraf International refers to school preparing to be international school. It is a policy of Indonesian government. This program is quite the same with the program that Malaysia has done since 2003. The focus of this program is to teach and learn science and math in English. It is expected that science and math teacher should acquire and master English in teaching their subjects and students are expected to understand the material of the subjects in English.

