

CHAPTER I

INTRODUCTION

A. Problem Background

The education problems in Indonesia are still around the low quality in; relevance, efficiency, productivity and effectiveness. The reason is; (1) the educator availability and educational staffs who are not yet sufficient in quantity and quality, (2) educator welfare that is not adequate yet, (3) lacking in infrastructure and has not been optimally utilized, (4) education cost is not yet sufficient to support learning quality. The one of problem root is the educational staffs in low quality (Renstra Depdiknas 2005 dalam Gultom, 2007).

The Indonesia education quality is so poor. It is evidenced among others by UNESCO data (2000) in Human Development Index ranking (Human Development Index), which is the composition of the ranking educational attainment, health, and income per head is shown that Indonesia human development index decline. Among 174 countries around the world Indonesia ranks number is 102th (1996), 99th (1997), to-105th (1998) and 109th (1999). The Survey of Political and Economic Risk Consultants (PERC) the quality of education in Indonesia is in ranked 12th of 12 countries in Asia. Indonesia's position is under Vietnamese. The data which is reported by the World Economic Forum in Sweden (2000), Indonesia has a low competitiveness, which ranked is only 37th of 57 countries surveyed in the world. And still According to a survey in the same institution in Indonesia only as a predicate as the follower rather than technology leaders

from 53 countries worldwide <http://www.idonbiu.com/2009/10/latar-belakang-masalah-pendidikan.html>.

The Indonesia low education quality is also shown by the research and Development Center data (2003) that is out of 146.052 elementary schools in Indonesia turned out to be only eight schools that are received by world recognition in the category of The Primary Years Programme (PYP). From 20.918 high schools in Indonesia are also only eight schools that are received by world recognition in the category of The Middle Years Programme (MYP) and the 8.036 High School are turned out to be only seven schools that are received by world recognition in the category of the Diploma Programme (DP).

The education quality in Indonesia is considered by many opinions are still low. It can be seen from the several indicators as follows:

1. Schools graduates or universities that are not ready to enter the working world cause lacking of competence. According to economic analysts Berry Priyono skills that is supplied and obtained from education institutions is not sufficient to be used independently, because what is taught in educational institutions is often just focused on theory therefore learners are less innovative and creative;
2. Indonesia Human Development Index (HDI) is still low and it's ranking is the position 111th of 117th countries in 2004 and 111th of 117th countries in 2005 but Vietnam's ranking is 110th.
3. The report of International Educational Achievement (IEA) that the Indonesia's learners reading ability of elementary school is in the ranking position of 38th out of 39 countries surveyed;
4. Academic quality among countries through the Programme for International Learner Assessment (PWLASA) in 2003 shows that 41 countries surveyed for the field of Natural Sciences, Indonesia is ranked 38th. While for the field of mathematics and reading ability is ranked 39th when compared with South Korea, the ranked is so far, to the field of Natural Science the ranked is 87th; , reading rating and Mathematics is the ranked 7th;

5. World Competitiveness Year book Report 2000, Indonesia's competitiveness in the Human Resources is located at the position 46th of 47th countries surveyed;
6. Indonesia Higher Education position which are considered as favorite, such as the University of Indonesia and Gadjah Mada University are in the position 61th and 68th of 77th Higher Education in Asia (Asia Week, 2000); and
7. Indonesia is lagging in the field of Science and Technology compared to countries like Malaysia, Singapore, and Thailand <http://arison001.wordpress.com> / 2009/01/12/guru-dan-tantangan-globalisasi.

The poor quality indicators in Indonesia's education are over more concerned with the data of Youth Ministry and Sport which states that as many as 37.06 percent of the Indonesia youth just graduated of elementary school. From 217 million Indonesia population are estimated to total 97 million young people. It is assumed to be young people aged 15-35 years. Under these conditions is difficult to expect them to become social change agents, as expected by widely society (Media Indonesia, October 4, 2009).

Regarding to teacher's condition as curriculum implementers, Fatah (Harian Umum Pikiran Rakyat, edisi 15 Desember 2005) gives the following picture: most teachers in Indonesia are not worth teaching. For elementary school teachers who are not eligible to teach as many as 605.217 people (49.3%), Junior High School 167.643 people (35.9%), High School 75 684 people (32.9%), Vocational High School 63.961 people (43,3%). With regard to the teachers suitability to teach, 15% of teachers do not teach in accordance to their expertise. Consequently there is no compatibility between expertise with the material taught. The impact of this fact is impacted on the education quality.

The serious problem improves the Indonesia education quality is the low education quality at various education levels both formal and informal

education. The low education quality may hinder the human resources provision who has the expertise and skills to meet the nation development in various fields. The cause of Indonesia education low quality among others is a matter of effectiveness, efficiency and standardization of teaching. It is still education general problem in Indonesia. The special problems in education are: (1) low physical facilities, (2) the low quality of teachers (3) the low welfare of teachers, (4) the low learner achievement, (5) The low distribution of educational opportunities, (6) The low educational relevance needs, and (7) the high cost of education <http://uses.wordpress.com/kualitas-pondidikan-di-indonesia>.

One indicator that makes the education quality poor especially in mathematics is the reports result of Third International Mathematics and Science Research (TIMSS) which explains that the average score in eight levels of mathematics learners (level II Junior High School in Indonesia) is far below the average of mathematics learner for International scores and mathematics learners ranking is 34th of 38th countries (Suharta, 2004:2). This occurs as the mathematics lesson is often considered difficult to understand and most hated.

Mathematics has a characteristic and an abstract object. The abstract nature causes many learners have difficulties in mathematics. Those difficulties are evident from the average of mathematics score that are much lower than other subjects. As national and International mathematics achievement has not been encouraging yet.

As disclosed by Sujono (1988:81) in his book: "..... apparently a lot of people are afraid of mathematics and as far as possible try to avoid the numbers. " In line with that Ruseffendi (2001:15) also finds that: "The lesson mathematics and science for children is general an unwelcome lesson if it is

not the most hated." They consider mathematics is a difficult lesson, unpleasant and frightening.

In this case, Andi Hakim also says "there is a mathematics teacher who used it to punish the naughty pupil. More woe again, Part of people do not give mathematics as a positive appreciation. " The assumption and this condition has not changed up to this time. ([Http: // www.15.Brinkster.com /Smun21 /mainshowfull.asp?id:83](http://www.15.Brinkster.com/Smun21/mainshowfull.asp?id:83)).

Even the notion of mathematics subject is difficult seems to be reinforced increasingly by the emergence of a new regulation from the government in recent years which is established that the mathematics is one determinant of whether or not graduate learners in a graduate education level that is decided by the government through the Minister of Education (Permendiknas Nomor. 22 Tahun 2006).

Despite of effort from all aspects pertaining to mathematics education has been carried out continuously, but here and there, there are still barriers and the lack or failure. The most alarming thing that could instantly see the quality of education in mathematics who has not achieved the expected result. The average value of mathematics learners at school is very low and still far lower than the other subjects value (Karnasih in Sianipar, 2001:2).

According to Suherman and Winatapura (1993:120) state that mathematics is not knowledge that could be perfect solitude for himself, but mathematics is primarily to assist people in understanding and mastering the social issues, economy and nature. Then Hutauruk (2000:1) states that mathematics is the one of the top intellectual glory. Besides, as science, mathematics also provides the language, process and mathematics calculation theory that form the basis for engineering design. Even the rise

and fall of a country depends on the mathematics field progress. Besides, mathematics also has a very dominant role in educating learners by the way to develop the ability to think logically, critically, analytically and systematically as proposed by several mathematics (Soedjadi, 1999:7).

Table 1.1. The Average Score of The National Examination on The High School of North Sumatera Province.

No	Studies Program	Year Lesson	Average Value of National Examination						
			Indonesia	English	Literature Physics Economy	Foreign Language Biology Sociology	History and Culture Chemical Stat. Administration	Mathematics	Anthropology Geography
1	Languages	2007/2008	5,65	6,78	6,39	7,00	-	5,79	6,83
		2008/2009	4,81	8,29	6,16	6,16	-	6,43	5,12
2	Natural Sciences	2007/2008	7,15	7,34	7,11	7,96	7,82	7,59	-
		2008/2009	6,93	8,11	8,13	7,69	8,39	8,78	-
3	Social Sciences	2007/2008	6,74	6,93	8,06	7,71	-	7,67	6,91
		2008/2009	6,56	7,74	8,27	5,86	-	8,26	6,80

Source: Education Service of North Sumatera Province

The low mathematics learning result is caused of two factors: (1) learner's internal factors that include failure or psycho-physical inability such as: intellectual / learner low intelligence, emotional instability and attitude also means vision and disorders hearing, (2) External factors such as learner self: situation and environmental conditions that do not support, low family economy, teacher's conditions and learning tools are in low quality, the naughty friends and the bad building location (Shah, 2003 : 183).

According to Muljani in Pasaribu (2005:5) suggests that based on the research in various countries show the factors that affect the educational result quality significantly include teachers, books, laboratories and management.

While Rezeki (2004:2) argues, cause of the graduate being low quality or does not meet expectations viz: (1) lack of good-quality inputs, (2) teachers' personal and less precise, (3) material is not or less suitable, (4)

teaching method and evaluation system are inadequate, (5) lack of supporting infrastructure and (6) lack of appropriate administrative systems.

Hamalik (2001:57) there are five major components that play a role of learning process on human elements (learners' consisting, teachers and other staff such as laboratory personnel), materials (including: books, blackboard and chalk, photography, slides and films, audio and audio tapes), facilities and equipment (consisting of classrooms, audio-visual equipment is also a computer) and procedures (included: scheduling and information delivery method, practices, research, exams and so on) that influence each other in achievement learning goals. Of all these factors the teachers play in role.

There are three functions that could be played by teachers in teaching those are as a designer, manager, as an education evaluator, teachers' ability in understanding the function of the curriculum, principles of teaching and learning (Suyanto, 1999:15). There are still many teachers who have not mastered in learning process (Wardiman, 1996:23).

There are several factors that cause of teacher does not master in learning process. Most teachers have difficulties in:

(1) learning plan include: formulating a comprehensive Specific Learning Objectives, Specific Learning Objectives formulated referring to the General Learning Objectives and Outlines of the Principal Learning, considering the time and provided by the Principal Lines of Learning with materials and so forth; (2) implementation of learning include: providing a tool/medium of learning, to encourage learners to think differently, encouraging multidirection and so PPIN-Batan Digital Library, (online), (<http://jiptumm/gdl/s1/2009/trisnawat>).

The competencies are required by the teachers to implement learning (specific mathematics subjects) viz; pedagogy competence, professional competence, personality competence, and social competence.

There is line with the Law of the Republic of Indonesia number 14 year 2005 about the teachers and lecturers, demanding the improvement of education quality in line with the increased of teacher's professionalism. Professional teachers must have academic qualification, competence, and educators' certification.

According to Alma (2008:17) a professional teacher should have the capacity or a set of competence capabilities and so should professional performance. The ability must be owned by the teachers in fulfilling their primary duty are:

(1) pedagogy competence to manage learning. That includes concept of teaching and the readiness that is shown by knowledge mastery and teaching skills, (2) the competence of personality, namely the ability of stable, mature, dignified, role model and morality, (3) professional competence is the ability of mastering subject which matter is widely and depth, as well as teaching method, appropriate techniques and understood by learners, easy to grasp, does not cause difficulties and doubts, (4) social competence is teachers' ability to communicate and interact effectively with in-out school environment.

According to Kamars (2005:25) management also consists of being meaning that there are a series of sequential events. If the tasks in organization could be done by the people in accordance with the order then it means that management has functioned.

Experts have different opinions and many kinds of management functions. Other experts include the functions such as (1) planning, (2) budgetting, (3) staffing, (4) organizing, (5), actuating, (6) supervising, (7) controlling, (8), evaluating and (9) Communicating. But out of nine functions by several experts agree that the function of: (1) planning, (2) actuating / executing and (3) controlling /evaluating are the main functions that must not be left (Kamars, 2005:26).

Controlling is determination whether the plan has been completed as the performance assessment result by applying the measure of inspection therefore the performance is in accordance with the plan (in Kamars Terry, 2005:86). Furthermore, Robinson, 2000:443) traditional approach oversees the actual result of the comparison with the standard. After doing the activities the leader has to evaluate them to carried out as input for more detailed monitorings and evaluations tailored to the atmosphere.

This research aims to determine mathematics learning quality with Kirkpatrick approach.

B. Problem Identification

From the result of various theories which are mentioned above about learning there are many things which contribute to learning. Between theory and other theories are different in terms of affecting leaner learning. There is a number of factors that is contributed to learn. These differences led to a number of questions of following variables: (1) how extent is the school principal's role to motivate teachers to obtain learning quality?; (2) how is the influence on teacher's competence on learning quality?; (3) how are the influence on facilities and infrastructure on learning quality?; (4) how is the climate role on learning quality?; (5) how is the school committee's role to provide and support the teachers in implementing the learning? and (6) how is the influence on self-control on learning quality?.

Evaluation is development of controlling and controlling is one function of management. In implementation of controlling has to use instrument. Then it's data must be analyzed. Analysis activity is an evaluation. Evaluation in administration context and educational management is program evaluation therefore learning must be evaluated.

One main activity at school is learning program to determine whether it has been implemented correctly in accordance with the competencies possessed by the teachers and need to be evaluated. Teacher competencies are (1) pedagogy competence, (2) professional competence, (3) personality competence and (4) social competence.

Because of competence field largement and researcher limitation, this research is limited to pedagogy competence and professional competence.

C. Problem Limitation

This evaluation research is focused on teacher's competence of mathematics teacher of class X with the Kirkpatrick model approach which examine teacher's pedagogy competence and professional competence.

D. Problem Formulation

The problem will be investigated in this research can be formulated as follows:

1. How extensive does pedagogy competence influence reaction?
2. How extensive does pedagogy competence influence learning?
3. How extensive does pedagogy competence influence behavior?
4. How extensive does pedagogy competence influence result?
5. How extensive does professional competence influence reaction?
6. How extensive does professional competence influence learning?
7. How extensive does professional competence influence behavior?
8. How extensive does professional competence influence result?

E. Research Objective

This research aim is going to detect:

1. The Influence of pedagogy competence on reaction, learning, behavior, and result.
2. The Influence of professional competence on reaction, learning, behavior, and result.

F. Research Benefit

1. Theoretical

- a. With obtained the outcome will be described aspects the role of both teachers' components (pedagogy competence and professional competence) in developing, reaction, learning, behavior and result. Provided the relation between aspects of pedagogy competence and professional competence on reaction, learning, behavior, and result during learning.
- b. Develop a repertoire of knowledge about the influence on pedagogy competence and professional competence on reaction, learning, behavior and result in accordance with development of the situation and demands quality.

3. Practical

- a. Having in mind the relation between variables could be used for teacher training related to pedagogy competence and professional competence.
- b. For the information and comparative material; (a) Head of North Sumatera Province Education Department in formulating policies regarding to develop teachers' pedagogy competence and professional competence development therefore will have great influence on reaction,

learning, behavior and result, (b) For the school principal as an input to improve teacher's learning, (c) for observer's repertoire of education management add the information for human resources development, especially in terms of improving the quality of teacher's pedagogy competence and professional competence on learning in which impact on competence quality.

