

CHAPTER I

INTRODUCTION

1.1 Background

Education is never ending. It starts with the birth of an individual and then it goes on till the last of the individual. Education makes an individual a real human being. About education, P.O. Bannerjiin (in Rather, 2004) said. "It is the development of the power of adaption to an ever changing social development." On the basis of wisdom and sanity grounds, education is the lighthouse 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. "A child's legs, arms and body are made stronger by healthful play. We can deduce the mind with its organic counter – part, the nervous system, improves and becomes better equipped because of use and exercise in the form of reading, calculating, memorizing, speaking, imagining and other mental activities."(Rather, 1948). This is education that is responsible for the all round development of human beings. According to Law No.20 of 2003 on National Education System stated that education is a deliberate conscious effort to create an atmosphere of learning and the learning process so that learners are actively developing the potential for him to have the spiritual strength of religious, self-control, personality, intelligence, noble character, as well as the skills needed him, society, nation and state. However, today we see that itself is the problem of education in Indonesia. The weakness of the learning process is driven by the inability of children to develop students thinking skills. The learning process in the classroom to direct more students are forced to memorize, a child's brain is required to remember, without the need to understand and comprehend. What is

the effect? When our students graduate from school, they are just smart in theory, can not be applied in daily life.

Education is one of the efforts to improve the quality of human resources. Education is currently placing students as the center point of the process of learning in which students as subjects who developed through experiential learning. The main problem in learning in formal education (schools) nowadays is still low absorptive capacity of learners. This is evident from the average student learning outcomes are always still very alarming. This achievement is certainly a result of the learning condition is still conventional and do not touch the realm of the learner's own dimension, namely how to actually learn (learning to learn). In a more substantial sense, that the learning process is still giving do teachers' dominance and not provide access for students to develop independently through the discovery in his thinking process (Trianto, 2009). Chemistry is one of the natural sciences (IPA), which plays an important role as well as a significant influence on the development and technological progress. This field of study has an important role and is widely used in daily life, such as food, drink, clothing and even industry. Seeing the importance of chemistry in human life and technology students need to be equipped to strengthen the ability of a chemical to produce a Human Resources (HR) are competent, to be able to follow the development of science and technology which is currently a development priority. Learning chemistry in school is less precise if only pay attention on product without considering the process that takes place in every learning. It happens due to the lack of constructivist learning models that are applied in high school, most of learning is still dominated by the teacher (teacher-centered), so non-cognitive skills are less honed. With this model students will become passive learners. The low achievement of students in learning chemistry can be seen in the average of School Exam (UAS) scores of students in area of North Sumatera, academic year 2004/2005 on chemical subject is 4.01, academic year 2005/2006 was 6.75, academic year 2006/2007 was 6.50, academic year 2008/2009 was 6.25 (<http://www.waspada.co.id/index.php//20.10>). They're shown that the student's scores in chemistry is far from optimum value. It can be seen from 6.25, which is

not optimal. Based the experience of researcher on field study experience (PPL) in SMA N 1 Plus Matauli Pandan, chemistry is difficult subject towards student's understanding. Most of students become obnoxious at time. It is seen from the results of pure value of daily exam (UH 1) on academic year 2014/2015. With the KKM 78, only five students can fear this test. The highest value was 98 (XI MIA 5), and the lowest value is under 10 (XI MIA 8). But, when the researcher taught chemistry subject integrated with inquiry, there was an increasing value that achieved by students. It can be proved by UH 2. The highest value was achieved at 100 (XI MIA 1) and the lowest value is between 60 to 40, and KKM for the test is 78. Although, there maybe no significant in increasing but, researcher believed that someday, all students can get the maximum value. (Published in SMA N 1 Plus Matauli Pandan, 2014).

Concepts and strategies that teachers use this time also decreased. Teachers no longer wanted to change the way they teach, just focused with teaching and learning activities which are monotonous. Teachers do not try to understand their students' abilities, resulting in students may not understand what the teachers taught. Descriptively, teaching in principle is to guide students in the teaching implies that teaching is an effort to organize the environment in conjunction with students and teaching materials, resulting in the learning process. Teaching is defined as an organized activity or set the environment as well as possible and connecting with children, resulting in learning process. Or said, teaching in an attempt to create conditions conducive to ongoing learning activities for students. (Rovegno and Nate, 2003)

Inquiry is a umbrella term that covers a number of other approaches to teaching and learning. As contrasted with more traditional forms of teaching and learning, inquiry emphasizes the process of learning in order to develop deep understanding in students in addition to the intended acquisition of content knowledge and skills. Inquiry draws upon a constructivist learning theories where understanding is built through the active development of conceptual mental frameworks by the learner. One way to conceptualize inquiry based learning is the notion of "playing the whole game," an idea by David Perkins, professor at the

Harvard Graduate School of Education. Perkins in (<http://www.teachinquiry.com/index/Introduction.html>) begins with the belief that teachers generally approach the complexity of teaching in one of two ways:

1. Students learn isolated skills and knowledge, starting with the simple building blocks of a particular topic and then building to more complex ideas. While this appeals to common sense (think of the efficiency of a automobile assembly line), the problem with this approach is the removal of any context to the learning, making deep understanding of the content less likely. Perkins calls this approach *elementitis*, where learning is structured exclusively around disconnected skills and fragmented pieces of information.

2. Students learn about a particular topic. This approach is frequently utilized in history and science classes, where students are taught about other people's ideas but rarely if ever given the opportunity to produce and refine their own ideas. Perkins calls this *aboutitis* where learning is equated with consuming knowledge or information, without developing the critical thinking or creative, knowledge-building skills necessary to transfer knowledge to novel situations.

The solution that Perkins offers to the typical classroom experience is what he calls learning by wholes, structuring learning around opportunities to experience or engage in the topic as it would exist outside of school. Using the metaphor of a baseball game, Perkins believes that the experience of most students involves either learning isolated skills (i.e., only ever throwing a ball) or learning about the game (i.e., studying baseball statistics or the history of baseball) without ever getting out onto the field and participating in an actual game. In a classroom setting, this means providing opportunities for students to experience the 'whole game' of mathematical thinking or scientific problem solving or historical analysis of primary source artifacts. (<http://www.teachinquiry.com/index/Introduction.html>)

To improve human resources in education, it is necessary to invent the changes in learning strategies. In order to assist students in understanding and understand the lessons to be learned. Inquiry-based learning is one of the learning strategies that can be used by teachers in the classroom. Inquiry-based learning is one of learning model that centered only to students. The main purpose of inquiry-based learning is to push students to develop the diciplint of intelektual and the thinking skills by giving the questions. The strategy of inquiry-based learning pulling on to the process of looking and finding. (Retno, 2010). In enhancing inquiry-based learning strategies, the authors conducted a study on **“The Implementation of Inquiry-based Learning Model with Concept Mapping to Improve Student’s Achievement and Interest on the Subject of Salt Hydrolysis”**.

1.2 Problem Identification

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

1. The problem in learning caused the quality of education in Indonesia.
2. The quality of education in Indonesia is still low.
3. Chemistry is one of subject that lack of understanding by students.
4. The lack of delivery material and learning models that lead to bored students in learning.
5. Model and media on teaching and learning process can make students easily understanding the chemistry concept that abstract and bored.
6. The capacity of cognitive aspect in salt hydrolysis is still low.

1.3 Problem Statement

1. Is the student’s achievement by implementing the inquiry-based learning model with concept mapping than student’s achievement in inquiry-based learning model on the salt hydrolysis topic?

2. Is the student's interest by implementing the concept mapping in inquiry-based learning model higher than student's interest in inquiry-based learning model on the salt hydrolysis topic?
3. Is there any significant correlation between student's interest to the student's achievement obtained by Inquiry-Based Learning model with concept mapping than inquiry-based learning model?

1.4 Problem Limitation

1. Strategy of model of Inquiry-Based as free inquiry combining with concept mapping.
2. The student's learning achievement to be measured in this study is cognitive aspect of level C1,C2,C3,C4 using instrument test.
3. The student's interest to be measured in this study is the interest of student in this topic.
4. The main topic will be taught in study is salt hydrolysis.
5. The subject of this study is students of XI Nat. Science SMA Sw. Raksana Medan.

1.5 Research Objective

The general objective of this research is to know what the model of inquiry-based learning with concept mapping increase the student's learning achievement and interest in salt hydrolysis topic

The specific objectives are:

1. Whether or not, the student's achievement that be taught by inquiry-based learning model with concept mapping is significant higher than student's achievement in inquiry-based learning model on the salt hydrolysis topic

2. Whether or not, the student's interest that be taught by inquiry-based learning model with concept mapping is significant higher than student's interest in inquiry-based learning model on the salt hydrolysis topic.
3. Whether or not, there is significant correlation between student's interest to the student's achievement in implementing inquiry-based learning with or without concept mapping.

1.6 Benefit of Research

This study is expected to provide benefits, especially for chemistry teachers, students and also for the other researcher about how to improve learning through inquiry-based learning integrated with concept mapping. The expected benefits of this research are generally described as follows:

1. For Chemistry teacher and researcher, this research result can be as alternative model beside other model presented in increasing quality of teaching and learning process especially in salt hydrolysis by applying inquiry-based learning using concept mapping.
2. For Students, to increase the student's achievement through innovative model learning to make interest of learning process so that it can increase the student's interest to learn chemistry and repeat the subject matter until they comprehend and it will result student's learning outcome and increasing the value.
3. For other researchers, it can be a modal to make a further research related to the study.

1.7 Operational Defenition

1. Inquiry-Based Learning (IBL) is an appropriate method of learning because it has a significant role to play in professional practice development.
2. Learning model of this study is an collaboration between IBL and concept mapping.

3. Concept maps are a creative way of individual students to generate ideas, lesson notes, or planning a new study.
4. Interest is choice of pleasure in activities and can excite a person to fulfill its readiness to learn.
5. Salt hydrolysis is lesson that learned about the salt that formed by strong acid and base, weak acid and base, strong acid and weak base, and strong base and weak acid. In this study also learned about how to find the pH value of salt from each kinds of salt.