

CHAPTER I

INTRODUCTION

1.1. Background

Chemistry is one of the natural sciences, which plays an important role and have a significant influence on the development and advancement of technology. Chemicals widely used in daily life such as food, beverages, clothing and even industry. The students from high school and even college chemistry capabilities reinforcements need to be equipped, in order to follow the development of science and technology development priorities at this time. The chemistry lesson is one of those subjects that are considered difficult by students, so that students by themselves need to investigate, growth the curiosity against to the learning materials. Professional teacher and a good learning model are needed to support them and carry their mind to the solution based on the problem or the difficulties to make them investigate and growth the curiosity by themselves, and also need the media to make them easy to conclude the materials or to see the key word for the problem.

Based on the function and purpose of national education, it is clear that education at all levels should be organized systematically to achieve that goal. This is related to the formation of the character of the students so that they can compete, ethics, morals, manners, and interact with the community. This suggests that the quality education students are very important character to be improved (Sudrajat, 2010). The formation of the character of the students, teachers as professional educators is needed so that the goal of education attained, the teacher has the function, role and strategic position in the national development in the field of education.

Character education is increasingly urgent to implement, given the events that occur around us. One juvenile delinquency cases that often occur in the world of National Education is a lack of discipline and lack a sense of responsibility in the school, such as not making homework, scribbling on the bench, at the dedication of the flag is not orderly, not dressed, often coming late, do not submit assignments on time, in class always teasing, fights, lack of respect for teachers. If

this habit is persistent, then the national education goals will be difficult to materialize. As a civilized nation, such a situation is obviously very unfortunate for the future of the nation, especially in the birth of the future generation of intelligent, intellectually, emotionally, spiritually, and socially. In such a context, there needs to be a serious effort from all parts of the nation to restore the lost national character.

The problems that right to get attention in many school are the way of teaching that always constant, that is direct instruction method. In this case, the student only hear the teacher without action. Only see the teacher was talking and write in the whiteboard, mean the student do not involve in teaching process, no spirit in student learning process. The other point in this method is when the student faced the materials of lesson about calculation, the student will solve by followed the formula. The matter is if they are asked to solve the other problem that has a little different from the formula, sure that they will not able to do. It is caused in the teaching process they do not involve to find out the formula, they do not know from where that formula coming from. In their memory, the just remember the general formula and can not to develop that formula to other problem. Because of that, needed a certain strategy that will be applied when they face the other problem. The strategy also able to develop their curiosity to the problem, so the students were involved to identify the problem. The other hand, for the theoretical matter, needed strategy that make them realize that lesson has already in around of them, so they will have a memory in a long time. The uninvolved student in teaching and learning process indicates that the responsibility sense of student to their self is very warned.

Based on this problem, the researchers offered a solution using two learning strategies, namely problem-based learning strategy integrated with computer-based media and the other is using the direct instruction method. Research conducted by Silvia Budianti (2007) concluded that the usage of problem based learning method has good effectiveness. The conclusion from these studies resulted in improved learning outcomes by 29.35% compared to learning using direct instruction method.

Research conducted in the educational journal E.J Wood (2004) concluded that PBL embraces the principles of good learning and teaching. It is student-directed (which encourages self-sufficiency and is a preparation for life-long learning), and promotes active and deep learning. It often includes or requires peer teaching, which encourages students to digest information so that they can present it to the group with some degree of authority. But also it taps into existing knowledge, and this again has to be digested knowledge so that it can be explained and used confidently.

Besides the right strategy, it needed the support of the media to promote the spirit of student learning, visualization is one way that can be done to concrete something abstract. In the era of visualization informatics developed in the form of moving images (animation) that you can add sound (audio). One of the interesting media that uses computer media power point with animation. Media animation is a medium that contains a collection of images are processed in such a way as to produce motion and comes with audio so memorable life and keep learning messages.

The subject of reaction rate that is taught in class XI semester I. This material discusses molarity, rate of reaction, relation reaction rate and coefficient of reaction, reaction order, factors that affected the rate of reaction, and the application. Overall the reaction rate material characteristics and understanding of concepts and descriptions are the usage and application of the formula in his understanding, so that students are required to solve a given problem. In addition, teachers are also required to use the media interest in learning. However, most of the students showed a less satisfactory learning outcomes, teachers are also difficult to use media interest.

Based on the references obtained, then an effort to improve responsibility sense, and student's learning outcomes, the researcher felt, need to conduct a study entitled **“IMPLEMENTATION OF PROBLEM BASED LEARNING INTEGRATED WITH MULTIMEDIA BASED ON COMPUTER TO IMPROVE RESPONSIBILITY AND STUDENTS'S LEARNING OUTCOMES ON REACTION RATE SUBJECT MATTER IN SENIOR HIGH SCHOOL”**.

1.2. Problem Identification

1. The number of students who are less responsible in the learning.
2. Less than optimal implementation of character education in schools.
3. Lack of student involve in learning process.
4. Difficult lessons students understand abstract concepts.
5. The useless of multimedia in teaching chemistry in schools.

1.3. Problem Formulation

The formulations of problem in this research are:

1. Are there significant higher of student's learning outcomes that taught by problem based learning strategy integrated with multimedia based on computer compared by direct instruction method?
2. Are there significant positive correlation between the improvement responsibility sense with student's learning outcomes that taught by problem based learning strategy integrated with multimedia based on computer?
3. Are there significant positive correlation between the improvement responsibility sense with student's learning outcomes that taught by direct instruction method?
4. How does the effectiveness of student's learning outcomes using problem based learning strategy integrated with multimedia based on computer compared by direct instruction method?

1.4. Research Objective

Based on the formulation of the problem, the objectives of this research are:

1. To determine whether there are significant higher of student's learning outcomes that taught by problem based learning strategy integrated with multimedia based on computer compared by direct instruction method.
2. To determine whether there are significant positive correlation between the improvement responsibility sense with student's learning outcomes that

taught by problem based learning strategy integrated with multimedia based on computer.

3. To determine whether there are significant positive correlation between the improvement responsibility sense with student's learning outcomes that taught by direct instruction method.
4. To investigate the effectiveness of student's learning outcomes using problem based learning strategy integrated with multimedia based on computer compared by direct instruction method.

1.5. Problem Limitation

Based on the scope of the problem that has been described above, the extent of the problem in this research includes:

1. This study is limited to the study of chemistry class XI IA SMA Negeri 2 Medan TA 2013/2014 on reaction rate subject matter.
2. This study is limited to the implementation of character education is a sense of responsibility.
3. Conducted on student learning and serve two groups, where the first group of students taught by Problem Based Learning strategy, integrated with multimedia based on computer, and the second group of students taught by direct instruction method?
4. Multimedia based on computer in this study uses the facilities of Microsoft Power Point and video.

1.6. Benefit of Research

The benefits of this research are:

1. Generated model of learning which is expected to improve student learning outcomes.
2. Motivating students to have more responsibility in the learning so that the learning becomes better.
3. Improving the quality of teaching and learning process to make it more attractive in an effort to improve student learning outcomes, especially on reaction rate subject matter.
4. As for the author's own insights and further research in education.

1.7. Operational Definition

1. Responsibility is the behavior in taking appropriate and effective decisions to change one's self which changes the form of knowledge, understanding, skills, attitudes and values.
2. Learning outcomes is a change in behavior that is obtained after a learning activity.
3. Problem Based Learning (PBL) is a learning that include of problem formulation, learning objective, and assessment related to each other. Problem formulation is the problem/ challenges against to the student. Critical to the success of the approach is the selection of ill-structured problems (often interdisciplinary) and a tutor who guides the learning process and conducts a thorough debriefing at the conclusion of the learning experience.
4. Direct Instruction method is a method of lecture as a teaching method is illumination and narrative orally by the teacher to the class.
5. Media is a tool that is used as an intermediary to convey messages and can stimulate thoughts, feelings and progress of audience (students) so as to encourage the teaching and learning process.
6. Learning model is the result of the integration between learning strategies and media used.