CHAPTER I

INTRODUCTION

1.1.Research Background

As we know, education is one of important sector in the building of our country, it can be as a invest for a human in a long term. Beside that, education is also one of the effort to develope potencies that have by all students through learning process. That's why the learning process should be able to make the students potency for future of the students, due to the knowledge can be implemented as long the student's life.

Teacher is the special one in increasing the quality of education. As the main subject in the front line in learning process, so the education and guidance that is given by teacher to the students be who determines in carrying the succesfull of education (Huda, 2012).

For this time, at school , there are many teachers just focus on the subject matter and the result of learning. They were just bustled in some activity to decide the competence goal that would be achieved, to arrange the material that would be taught, and to design the evaluation (Hamruni, 2009).And also in teaching, especially in teaching chemistry topic faces many difficult to get the objective of the teaching. One of the problems is the satiation of students in learning if the teacher just explain in front of class and the students just sit on their own seat with different intellegence of the students one to each other. (Tzu-Pu-Wang, 2012)

Based on researcher's experience in PPLT at SMAN 1 Matauli Pandan observation, in learning chemistry topic, the students just listen without understanding the topic. Some of them who have high intelligence can understand the topic just by listening and reading their book, but some of the student who didn't know the topic just keeping silent because of some reason. The reasons are some of them didn't like the subject matter they felt bored to see the teacher just spoke in front of class, while the

other reasons are being shy to ask to the teacher due to social reason, it can be they are being afraid if the other friend will know about their ignorance. While, the learning process of the students in school is not only get the knowledge from the teacher, also through the interaction and learn with other student, so she can develop her thinking ability, expression and keep the social interaction with other, so that as the final result, they can have good academic achievement. (Chunta.2010)

Based on problem above, the learning process must be implicated well to make the students involved actively. Teacher must be thought and planned a strategy or method to increase the learning process of students. In this case, teacher must be able to do a dynamic process in organizing a class, and using the method and strategy in teaching learning process. Teaching is demanded to be able to manage the teaching-learning process which give stimulation to the students so that th students will learn (Daryanto, 2012).

Basically , the topics learning in Chemistry have 3 characteristics that is the decomposition of concepts, mathematical calculations, and execution experiments. All of these characters suppport each other in the full mastery on topic of learning in Chemistry (Zebua, 2009). Solubility and solubility product is one of chemistry topic in Senior High School at the second semester class XI. In this topic, students will learn solubility and solubility product, common ion effect and solubility product relationship with pH. Material solubility and solubility product is a concept that is not enough, but there are only memorize the concepts that need to be observed through the teaching and learning activities with learning models and learning media to find the right concept. Problem Based Learning (PBL) based on collaborative is one of model that can be used in this topic, where in this topic have many discussions and calculations.

Boud and Felleti (1991) said, PBL is away of constructing and teaching course using problem as a stimulus and focus on student activity. The student are expected to have motivation to study , not only just listen and remember but also trained to explain their explorer another and traine to solve the problem when they learn chemistry. In PBL, students are trained in develope their skills include asking the questions, answer the questions, active listening, communicate ideas/opinions, being in the task and so on. (Tosun.2013)

Research conducted by Awang (2008), concluded that the problem-based learning approach can improve the creative ability of the students though students find difficult problem-based learning, but they said that they did more thinking than memorize, understand the lessons better through discussion.

Efforts to improve the quality of education continuously carried out both conventional and innovative. Government has also made efforts to improve the education system either via software (software) and hardware (hardware). Mellyzar and Silaban (2013), stating the use of learning strategies better when integrated with appropriate instructional media, such as carrying out practical lab or in observations through computer-based video strung together. Innovative learning with computers becoming one variation of the use of modern learning media that can improve student learning outcomes.

Dirckinck research results (2009), concluded that the problem-based learning that is integrated with the ITC is a way to change for the better approach.One medium thatcan be used are media Macromedia Flash. Through Macromedia Flash, learning activities can more intractive and can provide visual experience to students in order to provide the motivation to learn, clarify and simplify the complex and abstract concepts become more simple, concrete, also easy to understand.

Based on background above , the researcher will make research which its title is : "**The Implementation of Problem Based Learning Model Based On Collaborative With Macromedia Flash To Increase Student's Achievement on Solubility and Solubility Product In SMA**".

1.2.Problem Indentification

Based on the background above, the problem can be identified as follows:

1. Is the learning approach used by teacher already eligible in learning activities?
2. Are the students interaction between one to other students still passive and low social?
3. Why do little teachers not apply the macromedia flash in learning chemistry?
4. Why the conventional learning model is less encourages students to develop their thinking skills?
5. Why there are still many students who pretend to understand in studying chemistry ?

1.3.Research Scope

To make this research to be spesific, the researcher identifies the problem and limit only on the using of Problem Based Learning model Based on Collaborative with Macromedia Flash can increase the student's achievement on solubility and solubility product topic to students grade XI in science program in academic year 2015/2016.

1.4.Problem Statement

The problem statement of this research are :

1. Is the student's achievement by using PBL model Based On Collaborative with *Macromedia Flash* is higher than using direct instruction model?

2. Do the formation of Collaborative group can increase the activity of students to working together in the learning process?
3. What is the cognitive aspect will be improved by implementation learning solubility and solubility product with Problem Based Learning Based on Collaborative learning with *Macromedia Flash* ?

1.5.Research Objectives

According the problems, so the objectives of this research are :

1. To know the student's achievement by using PBL based on collaborative with *Macromedia Flash* is higher than using direct instruction model .
2. To Know the formation of collaborative group can increase the activity of students to working together in the learning process.
3. To know the cognitive aspect will be improved by implementation learning solubility and solubility product with Problem Based Learning Based on Collaborative learning with *Macromedia Flash* .

1.6.Research Benefits

The benefits of this research are :

1. For the teacher especially chemistry teacher, this strategy can be implemented in class to increase the learning quality especially in teaching solubility and solubility product
2. For student, it can increase the student achievement in learning can increase the students brave to ask and to discuss to their student, in other word, it can students social interraction to each other, this can be affect to students achievement in learning especially in solubility and solubility product.
3. This research can increase the experience and the knowledge of the students in learning solubility and solubility product.

1.7.Operational Defenition

1. Problem Based Learning is a way of constructing and teaching course using problem as a stimulus and focus in student activity. Problem Based Learning is a learning model with a principal that problem can be used as beginning for reaching or for integrating a new knowledge (Boud & Felleti, 1991)
2. Collaborative learning is a situation which two or more people learn or attemp to learn something together. Collaborative learning is based on the model that knowledge can be created within a population where members actively interact by sharing experience and take on ashymetry roles.
3. Macromedia Flash is a software program that is able to present an audivisual message is clear to students that the material is abstractand can be illustrated in a move interesting to students with a variety of animated that can stimulated student interest.
4. Student's achievement is an ability that is obtained by students after doing learning activity (Abdurahman, 1999)
5. Solubility and solubility product is one topic of subject matter in chemistry lesson that taught in SHS grade XI in even semester. The subtopics in this subject matter consist of solubility, solubility product (Ksp), the relation of Ksp to solubility, determination of solubility based on Ksp, value, and the inffluence of common ion.