# CHAPTER I
# INTRODUCTION

## A. Background

Education is a human need, as it has an important role in life to provide knowledge, insight, skills, and skills specific to the individual in order to develop the potential of him so able to deal with any changes that occur due to advances in science and technology. For the roles of education, then held a series of education, both formal and non-formal. The formal education process of learning and learning covering different fields of science including science of religion, science, social, language and mathematics.

In Indonesia system of education, mathematics is a field of study that occupies an important role. This can be seen with the hours of math in school more hours compared with other subjects. In addition, Syahbana (2012) suggested that mathematics as a discipline that clearly rely on the thought process is considered very good to be taught to students, so often the main purpose of teaching mathematics is not to accustom so that students are able to think logically, critically and systematic.

To the implementation of the curriculum now, one of the learning that is often used in school are learning that only material and mastery-oriented learning process in the classroom teacher are still largely centered instead of student centered learning, so it was only directed to the child's ability to memorize information. The students were forced to recall and stockpiling the various information without interpret information that he obtained. This is not

an indication that the child has the ability of memory is weak, but it is rather caused by a lack of innovation and creativity of educators or parents in educating children. Should teachers be more creative and innovative in the presentation of the material.

Mathematical learning is an active activity in one's attempt to understand or master mathematical concepts. There are some things that need attention in learning mathematics, which knowledge must be built by students actively, learning is more emphasized on the process not only on the final achievement. However, in reality most societies assume that mathematics is a science that is not easy. Some students say that mathematics is a frightening and tense lesson, so students perceive it as their enemy, but students who think mathematics is a difficult, abstract and meaningless thing. The view that causes students are not interested in studying mathematics which ultimately has implications for mathematical achievement.

To overcome this, various efforts are made to improve the quality of education. The success of the quality of education, especially mathematics is influenced by several factors, including the students themselves, subject matter, teachers, parents, and learning models and teachers must master the material taught and skilled in teaching it. In preparing the lesson material up to the time of its implementation, the teacher must selectively determine a more effective and efficient learning model, which actually involves the students during the learning process takes place.

Based on the results of initial observations of researchers through direct interviews on math teachers and students on Monday 13 February 2017, the process and the results of mathematics learning in SMA Negeri 12 Makassar class XI consisting of 6 classes showed that mathematics learning is still experiencing obstacles so that students' mathematics learning achievement still relatively low. This is caused by some students assume that mathematics is a difficult lesson, the difference in understanding the concept of a particular material, less motivated to learn and think related to the calculation, so that the achievement of learning mathematics is not in accordance with the expected and the process of learning mathematics has not reached competence expected. In addition, the lack of prior knowledge of students about concepts will be given as a basis for learning.

At the time the researcher did the observation, the Minimum Exhaustiveness Criterion (KKM) score was 72, so the students should be able to obtain the KKM value of $\geq 72$ which has been determined by the school as the minimum mastery standard of SMAN 12 Makassar. The average value of daily grade XI SMAN 12 Makassar with the number of students about 38 people is largely incomplete study so most of them have to remedial in order to reach the predetermined KKM. One of the reasons student achievement does not reach KKM is the use of less precise learning model in learning mathematics.

In addition, one of the causes of mathematics lessons is said to be difficult by the students because basically many concepts and principles in

mathematics are difficult to master. The concepts and principles that are not mastered because the students do not have the skills in solving math problems well. Teachers can make students feel interested and motivated in various ways, for example by using models and instructional media in accordance with the material that will be taught so that students can think critically, logically, understand the concept and can solve the problem with an open attitude, creative and innovative and not boring so that students' mathematics learning achievement can increase.

Therefore a teacher should be able to choose the appropriate learning model in delivering the subject matter on learning mathematics. One of the right learning to improve learning achievement in learning mathematics is learning with problem posing learning model.

Questioning is a task that leads to a critical, creative and well-understood attitude because students are asked to make inquiries from the information provided. In the learning model problem posing has several types, but that will be used in this research that is problem posing learning model post solution posing and pre-solution posing types.

The problem posing model of post solution posing type requires students to make new and challenging questions from existing problems. While in problem posing leaning mode of pre-solution posing is one of the learning model that involves students actively in teaching learning process. This learning model requires students to make their own questions and

answers based on questions given by teachers (Astra, Umiatin, & Jannah, 2012).

The application of the two learning models is expected to be more effective in learning mathematics, because students will learn more actively in thinking so that the concept of mathematics can be more easily understood, so that active learning will be created, students will not be bored and will be more responsive. When associated with the increase of student achievement, the question is a means to stimulate the ability to think and train themselves in making and resolving questions.

Therefore, with the application of learning model problem posing expected to improve student achievement in learning mathematics. In problem posing, students are not only asked to make a question or ask a question, but to seek a solution. Completion of the problems they make can be done alone, asking for help friends, or done in groups.

Based on this background, the researchers tried to lift a study with the title "The Mathematics Learning Achievement Comparison of Students Using Problem Posing Learning Model". This research is experimental by using problem posing model of pre-solution posing type and post solution posing type in grade XI students of SMA Negeri 12 Makassar).

## B. Problem Statements

Based on the background have been explained, the formulation of the problem in this research are as follows:

1. What is the student's mathematics learning achievement after being taught by using problem posing learning model of pre-solution posing type on grade XI SMAN 12 Makassar?
2. What is the student's mathematics learning achievement after being taught by using problem posing learning model of post solution posing type on grade XI SMAN 12 Makassar?
3. What is the description of student's activity taught by using problem posing learning model of pre-solution posing and post solution posing types on grade XI SMAN 12 Makassar?
4. Is there any difference of student's mathematics learning achievement after being taught by using problem posing learning model of pre-solution posing type and after taught by using problem posing learning model of post solution posing type on grade XI SMAN 12 Makassar?

## C. Research Objectives

Based on the formulation of the problem mentioned above, the purpose of this study was to determine:

1. To know the student's mathematics learning achievement after being taught by using problem posing learning model of pre-solution posing type.

2. To know the student's mathematics learning achievement after being taught by using problem posing learning model of post solution posing type.
3. To know the description of student's activity taught by using problem posing learning model of pre-solution posing and post solution posing types
4. To know any difference of student's mathematics learning achievement after being taught by using problem posing learning model of pre-solution posing type and after taught by using problem posing learning model of post solution posing type.

## D. Research Benefits

The benefits expected from the results of this study are:

1. Can motivate learners in the learning process which gave a positive role in the ability of critical thinking and understanding of the concept of learners.
2. The results of this study can give an idea of the learning model Problem Posing in mathematics right so that educators can use as consideration in the process of teaching and learning in schools.
3. Helping schools to evolve in terms of improvement/progress on self-teaching and education to the school.
4. Increase insight, knowledge and skills of researchers, especially related to research using problem posing learning model.

## E. Terminology

To avoid errors of interpretation and understanding, then the limitation of terms used in this research include:

1. The comparison of this research is to see the significant difference in the result of student's mathematics learning achievement which is taught by using problem posing learning model problem of pre-solution posing type and the students are taught by using problem posing learning model of post solution posing type.
2. Learning model used in this research is problem posing learning model of pre-solution posing and post solution posing types.
3. Problem posing learning model of pre-solution posing type is one type of learning problem posing model that involves students actively in teaching learning process. This learning model requires students to make their own questions and answers based on the questions given by the teacher.
4. Problem posing learning model of post solution posing type is a type that involves students actively in the learning process where students are given the problem and its completion, then based on it the students are asked to ask a new kind of problem and challenging.
5. Learning achievement is referred to in this study is the result of learning after following the learning process, learning achievement is expressed by the score or the value of the ability of students in mastering the material that has been taught by answering the problem of achievement test.