CHAPTER I

INTRODUCTION

A. Background of The Study

Mathematics is mother of science, mathematics is very important in learning and daily activity. Mathematics given to student in the form of subject that can be related daily activity.

Man is a being who thinks , Sitti Hartinah (2008: 12-13), says that man is a being who thinks, or *homo sapiens*, a being which is shaped or *homo faber*, a being who can be educated or *homo educandum*. Student must be can think and active in the learning process.

Student's active in learning process is effect by internal factor and external factor. Internal factor of student are the talking ability, problem solving ability and brave to give the opinion. Those abilities can appear when student have critical thinking ability. Radno Harsanto (2005: 43), says that critical thinking is a model of thinking that is not receiving any data without evidence or obvious. A critical thinking should be able to give reasons for the selection decision taken. This means, a critical thinking must already have logicalanswers for any of his thinks.

Children until old men need education to be shaped and can think. While the education itself has the sense of conscious effort and planned to bring about condition of learning and the learning process so that students actively develop the potential to have a religious spiritual strength, self-

control, personality, intelligence, morals, as well as the necessary skills they need in society.

Education can be given to children though home education and school education. Education at school can't be removed from the process of learning and interaction between teachers and students. Usually, in learning activities the teacher is more dominant than students. Teacher giving material to students and students just listen to the teacher at the seat. Conventional model like this should not be continued, because it will make the distance between teacher and students.

Teacher can use cooperative model as the alternative. Cooperative model has many types and development. Teacher can apply this model in the teaching and learning activities.

One type of cooperative learning model is *Two Stay Two Stray* (TSTS). Cooperative learning model type TSTS is cooperative learning model that given opportunity for group to share information with other group. It can be said that cooperative learning model type demanding students active in learning process.

Based on the background above, researcher is interest to conducting study with titles "Experimentation of Mathematics Learning By Using Cooperative Model Type *Two Stay Two Stray* (TSTS) On The Subject Of A Circle Viewed From Student's Critical Thinking Ability" on students Grade VIII SMP N 1 SURAKARTA.

B. Problem Identification

Based on the description of the background above, reseacher can identify the problems that arise in study, include:

1. The learning model which is used by teachers in teaching and learning processes is still conventional.
2. One of the cooperative learning model that can be used by teacher is type *Two Stay Two Stray* (TSTS).
3. Critical thinking ability is needed by students in learning activities.
4. Critical thinking ability every student is differs.
5. Critical thinking ability of student enables to affect students' achievement.

C. Limitation of The Study

For this study can focus the discussion, not too far-reaching then limitations on the problem is needed. The limitations of the problem in this Study are:

1. Cooperative learning that use is type TSTS (*Two Stay Two Stray)*.
2. Learning mathematics taken is subjects of a circle.
3. Critical thinking skills include: the ability to recognize a problem in more detail, found a way that can be done to resolve the problem, collect relevant information, identify assumptions and values that is behind the belief, knowledge, as well as conclusions.

D. Problem statement

Based on the background, problem identification, and limitation of the study above, the problem statements can be formulated as follows:

1. Is there difference effect of using cooperative learning model type TSTS and conventional learning model to student's mathematics achievement?
2. Is there difference effect of critical thinking ability of the students to student's mathematics achievement?
3. Is there interaction effect of using learning model and critical thinking ability of students to student's mathematics achievement?

E. Objectives of The Study

Based on the problem statement above, the objectives of this study are follows:

1. To analyze and examine the difference effect of using cooperative learning model type TSTS and conventional model to student's mathematics achievement on the subject of circle.
2. To analyze and examine the difference effect of critical thinking ability of the students to student's mathematics achievement on the subject of circle.
3. To analyze and examine interaction effect of using learning model and student's critical thinking ability to student's mathematics achievement on the subject of circle.

F. Benefit of The Study

1. Theoretical benefit

   Theoretically, the result of this study is expected to contribute to learning mathematics. The result of this study is expected to know effect of student's critical thinking ability with the application of cooperative learning model type TSTS against the student's mathematics achievement. In particular, the results of this study can be used to developing similar studies.

2. Practical benefit

   Practically, in this Study is expected to provide the following benefits:

   a. For teache rs or prospective mathematics teacher is expected to provide in determining appropriate teaching model.
   b. For schools, the study is expected to contribute improvements in learning mathematics.
   c. For researcher, the study is expected to test the ability of provision the theory obtained from College. As well as efforts to develop knowledge, insights and experiences in the process of rebuilding themselves as prospective teacher.