CHAPTER I
INTRODUCTION

1.1 Research Bacground

Natural science is related to how to search and how to find natural problem sistematically. Thus natural science is not only a way to master knowledges in the form of facts, concepts or principles, but also a process of discovery. One of the problem in education is the weakness of learning process, especially in natural science subject (Mathematics, Physics, Biology, and Chemistry). Learning process in class is focus on the students ability to memorize and to remember all the information without be expected to understand that information.

Macarandang (2009) said that many schools in Batangas city (Philippines) are producing non qualify graduates.Many students are good in memorizing the information, facts and conceptsbut pour in understanding, so students did not know how to connect and applicate it in daily life. For natural science, concepts understanding and application is very important for students in order to be able to solve any problem in their daily life. A major challenge in the teaching and learning of biology isthe development of students' abilities to gather, analyze,apply, and synthesize information. These skills are importantfor students to understand the basic biological concepts and the scientific process (Gehring *et al*, 2008).

Some factors that influence the quality of learning, as indicated by the student's learning achievement, are students themselves, teachers, strategy or methods of learning, learning models, *learning tools* and evaluation (Fana, et al, 2011). So to increase the learning quality, it needs to plan and design the learning process by developing learning tools (Hamzah, 2008:2). One of the important component of learning tools that influence learning outcomes is the learning methods.

In the process of teaching and learning in classroom, teacher is one of the determining factors of the success or failure of students. In facts, until this time, teaching and learning still focus on teacher centered model and did not give the

chance for students to develop their discovery and problem solving skills (Trianto, 2009:5).

The role of teachers in education can not be separated from their ability to deliver material to students. Therefore, teachers need to enhance the ability to disign, develop and implement teaching tools and processes in order to improve the students' potential (Tirtarahardja & Sulo, 2008:1). In the tools, teacher should be ableto determine the best strategy, materials, time allocation, relevancy, feasibilty and the goals of study before doing teaching process (Harjanto, 2010:4).All that planning is arranged in learning tools, such as syllabus, lesson plan, worksheet, evaluation instrument, test, learning media and students' text book (Trianto, 2009:201).

Nowadays, learning models that expected can change the learning environment are available. Therefore, to increase student outcomes, teachers should able to select and use the suitable learning models, mainly student-centered models, that motivate students to be more active in learning process. One of the models is *Problem Based Learning*(PBL).Preliminary research on the development of learning tools based on Problem Based Learning model(Paidi, 2009), indicatesthat student's achievement in biology is increased if thought with any student-centered models. Biology learning tools based on PBL model was able to improve the student's ability to solve any problem and to enhance their critical thinking. Furthermore, Oguz - Unver and Sertac (2011) reviewed that there is no any study reporting significant negative findings on the students outcomes and skill related to PBL.

Fana (2011), reported that PBL is effective to increase student's learning achievement and problem solving skill in SMA IPA students. In this study, PBL was effectively increase student minimum criteria of mastery from 60 % to 93 %.

From many lerning models that mostly developed in education tend to cooperative learning which implemented by student's group working. Cumming (2010) said that group work can encourage the development of key professional skills, enhance student engagement and encourage deeper learning. But Wieman (2008) indicates that group work is not always succes in learning activity even it

can be a complex problem. Heller and Hollabaugh (1992) reported that group work is not always effective to improve the learning outcomes. The data of questinare indicates that not all the students were statisfy with cooperative- group problem solving. There were 72% of students agreed that group discussion helped them understand the course material while 28% of them was not agree. Then when doing test, there were 68% students agreed that group discussion could improve the students result while 325 of them were not agree for that.

Biology is a knowledge that has an important role in the development science and technology. So students are not only need to memorize the concept of biology butthey need to understand and even to know how to apply it. Excretory system is one of the biology topic which is categorized as difficult lesson to be understood because of its complicated characteristics of physical and chemical process. Students must have already been on the stage of formal conceptual thinking while learning Excretory system topic (Lazarowits, 1992:12)

Based on the background, the writer interested to conduct research with the title **" The Comparisonof Learning Achievement and Activities betweenStudents Taught with Group and Individual Work of PBL in grade XI SMAN 1 Matauli Academic Year 2012/2013".**

1.2 Problem Identification

From the background above, the following problems areidentified:

1. Learning process tends to focus on teacher domination and students are dependent on teacher information.
2. Teachers are lacking of use learning tools with variance model in teaching and learning activities.
3. Students are good in memorizing the information, facts and concepts but poor in understanding.
4. Apart of students can not work in group so it causes the different of constributing in discussion.
5. Most of students are not able to connect and applicate the information in daily life.

6. The student's mastery learning in biology are generally below the school standard.

1.3 The Scope of Study

Based on the identification on the problem above, the scope of study are:

1. Learning biology which can improve the students' learning achievement by using Problem Based Learning.
2. The comparison of both grouping strategy using PBL is seen by the result of student's learning achievement. Student's learning achievement that intended in this study is cognitive test and problem solving skill.
3. Subject matter is limited to the Human Excretory System topic in grade XI IA SMAN 1 Matauli Academic Year 2012/2013.

1.4 Research Question

In accordance with the issues that have been stated, then the problem can be formulated:

1. Is there any difference in learning achievement between students taught with group and individual work of Problem Based Learning on HumanExcretory System in Grade XI IA SMAN 1 Matauli Academic Year 2012/2013?
2. Is there any difference of activities between students taught by group and individual work of Problem Based Learning on HumanExcretory System in Grade XI IA SMAN 1 Matauli Academic Year 2012/2013?

1.5 Reseach Objectives

The objectives of this research are:

1. To Know the difference of learning achievement between students taught by group and individual work of Problem Based Learning on Human Excretory System in Grade XI IA SMAN 1 Matauli Academic Year 2012/2013.
2. To know thedifference of activities between students taught by group and individual work of Problem Based Learning on HumanExcretory System in Grade XI IA SMAN 1 Matauli Academic Year 2012/2013.

1.6 Significances of Research

The significances that expected from the results of this research are:

1. For teachers, they can enhance the innovative learning model by using Problem Based Learning in Learning tools on teaching and learning process in the classroom.
2. For students, they can mastery the concepts in the Human Excretory System topic easier and also can solve any problem about Human Excretory System in their daily life.
3. For researcher, especially myself as the teacher candidate can apply the using of Learning tools base Problem Based Learning models in the teaching and learning process if I had become a teacher, and to know the devastating impact lack of mastery concepts for prospective students.