CHAPTER I
INTRODUCTION

1.1.Background

The problems that often arise in the world of education is the lack of ability of students to use thinking skills to solve problems. Students tend to be bombarded within formation that requires memorizing only. A lot of knowledge and information held by students but difficult to correlate with their situation. Rather than resolve the issue, their knowledge as irrelevant to what they face. When students follow an education is nothing else to prepare them to become a man who is not only smart but capable of solving the problems they will face in the future.

Students are required to know everything that is demanded by the curriculum. Education must equip them with skills that can be used to overcome the problems they face. The capability is the ability to solve problems. This ability can be developed through learning where the problems presented in class and the students were asked to complete with all the knowledge and skills they possess.

The science and its applications are part of daily life to make our life better and therefore the development of an individual's understanding of science and its applications is one of the objectives of science instruction (Aziz, *et al*., 2014). Rapidly changing recent science applications require science students to gain self-directed learning skills for lifelong education, where skills are part of the efficiency to react to development in knowledge. Moreover, the teaching of science has become important now more than ever. One of the most effective approaches is problem-based learning (PBL), which is a scientifically accurate model.

Based on this, teachers need to design learning that is able to evoke the students' potential in using thinking skills to solve problems. One approach to learning is what is called "Problem Based Learning (PBL)". This learning approach focused on the problems presented by teachers and students to resolve

the issue with all their knowledge and skills from various sources can be obtained. In more detail, this is what the author presented in this Thesis.

PBL makes students more engaged in learning because they are hard wired to respond to dissonance and because they feel they are empowered to have an impact on the outcome of the investigation. PBL offers students an obvious answer to the questions, "Why do we need to learn this information?" and "What does what I am doing in school have to do with anything in the real world?" The ill-structured problem scenario calls critical and creative thinking by suspending the guessing game of, "What's the right answer the teacher wants me to find?" PBL promotes metacognition and self-regulated learning by asking students to generate their own strategies for problem definition, information gathering, data-analysis, and hypothesis-building and testing, comparing these strategies against and sharing them with other students' and mentors' strategies (Akcay, 2009).

Based on the data that found in the last meeting of topic Reproductive System (last year) in the school showed that this topic has a low mastery level done by the students as individual completeness (only 20 students in the class can reached the minimum mastery level 76 points, amount of students in the class is 30 students) and also for classical completeness {67 % from amount of students, can reach the minimum mastery level 76 points (20 students)so classically the class were incompleted in learning outcome because there are 10 students did not completed the topic, while the completed class must have at least 24 students that reach the minimum mastery level). Difficulties may arise from the manner or method of learning that is used is not appropriate to explain to students how to process the picture data in lesson topic that many students find that during the learning process they felt less equipped to answer the pictorial questions. It is very necessary to be focused, because the students will not only encounter the problems illustrated in the work sheet biology, but also in the matter of Daily Examination at the school, including Mid-Semester and Semester Examination of the pictorial problems can be found in the level of the Joint National Examination and Selection of State Universities at the national level or on matters Olympiads.

The result of research by Bhahri (2014) by using Problem Based Learning model show the improvement of average of students learning outcomes that in the first cycle found three domains give percentage affective 62.89%, psychomotor 85%, and cognitive 55%. After the research in cycle II was done, the result showed that there is a development for the three assessment aspects namely affective 79.5%, psychomotor 90%, and cognitive 85%.

Based on the above and the problems that arise in the sixth paragraph, research with the title "Improvement of Student Learning Outcomes Using Problem-Based Learning Model on Human Reproductive System Topic in Grade XI IPA 4 at SMAN2 Soposurung Balige Academic Years 2015/2016"has been conducted.

1.2.Problem Statement

Based on the backgrounds above, the identification of problems in this research are:

1. Learning models that applied before is not relevant to help the student more learn about how to comprehend an image so it easy to answer the pictorial question.
2. Biology learning outcome still low that a side effected by teacher-centered learning in teaching-learning process.
3. The difficulty to do or answer the pictorial questions on Biology.
4. Student’s activity in teaching-learning process is still low.

1.3.Scope of the Study

The problems in this research limited to:

1. Application of Problem Based Learning model to improve the student activity and learning outcome.
2. Matter that used in this study is Human Reproductive System topic, that is reproduction organs, spermatogenesis, oogenesis, fertilization, etc in Class XI IPA 4 at SMAN 2 Soposurung Balige academic years 2015/2016.

1.4.Research Question

Based on the backgrounds, identification, and scope of problem, so the issues in this research are:

1. Is the Problem Based Learning model can improve student activity on subject matter Human Reproductive System in Class XI IPA 4 at SMAN 2 Soposurung Balige academic years 2015/2016?
2. Is the Problem Based Learning model can improve student learning outcome on subject matter Human Reproductive System in Class XI IPA 4 at SMAN 2 Soposurung Balige academicyears 2015/2016?

1.5.Research Aim

The purposes of this study are:

1. To know the improvement of student activity on subject matter Human Reproductive System by using Problem Based Learning model in Class XI IPA 4 at SMAN 2 Soposurung Balige academic years 2015/2016.
2. To know the improvement of student learning outcome on subject matter Human Reproductive System by using Problem Based Learning model in Class XI IPA 4 at SMAN 2 Soposurung Balige academic years 2015/2016.

1.6.Significance of the Study

The benefits of this research are:

1. To observer/prospective teacher, as preparing materials to be a teacher that able to increase the student activity and learning outcomes.
2. To teacher, can used as suggestion in planning a learning by apply the Problem Based Learning model, specially in Biology subject.
3. To students, as student learning experience that can improve student activity and learning outcomes.

1.7. Operational Definition

The definition of some keywords in this study is:

1. Learning model is a conceptual framework that describes a systematic procedure in organizing learning experiences to achieve specific learning objectives and serves as a guide for learning and the crier proclaimed and teachers in implementing the learning activities.
2. Model of Problem-Based Learning (PBL) is a cognitive psychology of learning that takes as its theoretical support. The focus is not much on what is being worked on students but on what students think as long as they do. Enabling teachers themselves as mentors and facilitators so that students can learn to think and solve their own problems.
3. Learning outcome is ability of students to fullfill a reaching step of learn experience in one of basic competency (Kunandar, 2007).
4. Reproductive System subject matter is the of matter in Biology discuss about structure and function of human reproduction, mechanism of gametogenesys, menstrual and ovulation cycle, and human reproduction diseases.