CHAPTER I
INTRODUCTION

1.1. Background

Biology derives from the word *bios* for live and *logos* which means science. So, biology is a science that learns everything about organism. Biology can help human being solving the problems that they are facing in their daily life. Biological discussion in form of organism included various life organization level, from molecule, cell, tissue, organ, individual, population, ecosystem to biome. Biology is belongs to the group of pure science. Its position is equal to physics, chemistry and mathematics. As a pure science, biology has an important role in applied science development (Riandari, 2006).

Biology is as one of Sciences (IPA), which is quite interesting basically, where we can learn the symptoms or phenomenon that often occurs in everyday life. However, in fact many students do not like biology. Many students say that biology is a difficult science because it always leads to the Latin term and wide-ranging.

Moreover, schools with a program RSBI / SBI which use English as prologue language in teaching and learning is also a challenge and a big problem for teachers and students. Teachers can be led to deliver learning materials in English and understand using ICT as a tool in teaching and learning in the classroom RSBI.

RSBI is an educational program established by the Minister of National Education under:

(a) Law No. 20 of 2003 article 50, paragraph 3, which states that the Government and / or Local Governments conduct at least one unit of education at all levels of education to be developed into an international educational unit,

(b) Regulation No.19 of 2005, section 61, paragraph 1 which states that the Government jointly with the local government should develop at least one unit of education in basic education and at least one unit of education in secondary education to be developed into an international educational unit,

(c) Ministry of Education Strategic Plan 2005-2009 Chapter V page 58, about the SBI should be developed at the Regency / City through cooperation between government in consistent with the Government of Regency / City, to develop the international level of elementary junior high school, high school and vocational school.

(http://sbi.sman5bekasi.blogspot.com cited in http://gurupembaharu.com)

However, the presence of RSBI school program as the reason for the teacher to increase the quality of education. In teaching and learning, teachers in RSBI classroom use English and ICT as a facility to support students' achievement. But in fact many students have less understanding of the subject and difficult to remember the terminology in biology as described in English so that score they receive is not satisfying. The writer has a proof from students' formative test monthly did as PPL-T in SMP Negeri 1 Tebing Tinggi, the mean English test score is only 26.7. When the teacher helps interpret the words in the test; the mean is 67.80 in class VIII. While KKM assigned for biology subject class VIII is ≥ 75.

During doing practical teaching (PPL-T), researchers and teachers have good relationships and cooperation. Researchers and advisors tried to use the available facilities in teaching-learning process. Teachers also often used power point for delivering the materials. This made students bored. Based on the questionnaire that ever was given to students, they argued that the power point is less interesting from its colors or appearances. It also led students less interesting in learning because of children who have been 13-15 years old is more interesting visual learning than others for their learning. However, this is also not helping the result students' study. Those scores are far from expected.

In Mid Semester for knowing students' study learning outcomes, teachers use multiple-choice and essay to measure students' cognitive abilities. In multiple-choice questions, students did not seem serious answering questions, especially if they did not know the correct answer. Students often chose the answer they think is right perfunctorily. Sometimes, students may forget the lessons they have

taught first. They feel the memories they have been full. But when students are given a sudden quiz with specific clues they can answer that question well.

The low score obtained represents the level of students' ability in mastering the subject. Teachers also still use lecture method in which the teacher is explaining the subject while the students copy material so that the material is less attracted the attention of students. In addition, most of students had a tendency not want to study first the concepts of the subject prior to the subject taught.

Based on problem above, to improve students' learning outcomes needed a way or correct strategy in motivating students to develop an innovative attitude to learning and intend to make active in teaching and learning.

According to the researchers' interviewing with some students from the junior high school class IX, who has been studying on Plant Movement topic said that Plant Movements material need high logical reasoning or comprehension level because it will find many terms in biology (terminology) for the first one to hear and difficult to distinguish between one another. As well as subject is difficult to stay in students' memories for example; tropism movements. Students must know the distribution of tropism movements and distinguish the samples of tropism movements with others.

One of alternatives answer for this problem is teachers choose learning model that can improve student learning outcomes and students' retention to the lesson.

Examples of innovative learning model are role playing, group investigation, talking stick, word squares, crossword puzzle, snowball throwing, course review hooray, etc. To improve teaching and learning activities is being more innovative and overcome boredom in teaching and learning. Word square and crossword puzzle have similarities because of the words in certain boxes.

Word square and *Crossword puzzle* is an innovative learning model where it is fun for everyone who is in the classroom or school and student-centered activities. Innovative learning is a learning process that is designed in such a way that is different from learning in general carried out by the teacher (conventional).

More innovative learning leads to student-centered learning (student centric) that the process designed and conditioned for students to learn. Relationship between teachers and the students to learn from each relationship and each may develop. Innovative learning called is active learning.

The steps in word square model are as follows: Students given activity sheets and answer the questions and the shading of letters in the boxes according to the answers. The steps: (a) Teachers deliver the material according to competence (b) Teachers distributed according to the example sheet activities (c) Students were told to answer the question then shading corresponding letters in the answer box (d) Give each answer in a grid point. In crossword puzzle: (a) Write key words, terms or names that related to the subject matter taught (b) Creating a grid that can be filled with words that have been selected and shade in area sections that are not needed. (c) Make the questions whose answers are words have been made or that lead to these words. (d) Divide the class into several groups. (e) Each group was given a piece of the puzzle together with other groups. (f) Give a deadline for work on the puzzle. (g) After the specified time runs out, each group read results in turn. (h) Correcting the work of the group and gave gifts to groups that work most quickly and completely.

Retention is process to recall previous lesson that taught where the lesson enters to long terms our memories. This can be done by reviewing where we are going to re-examine the structure and function and may remove misconceptions that exist in their brains. Theory used in this learning model is a theory of information processing. Stages of a good learning process, According to Gagne (1975) includes eight phases: (1) motivation, (2) apprehending phase, (3) acquisition phase (4) retention phase, (5) recall phase, (6) generalization phase , (7) performance phase and (8) feedback phase. From the steps above, teachers can make learning innovations for interventions and learning processes can be run in accordance with the intended purpose (Hamzah, 2011).

Previous studies *Word square* model on learning biology has been done by Wiriaringrum (2007) by the method of observation is varied by LKS Word Square

in the matter of classification of animals in SMP Negeri 8 Purworejo can improve student learning activities that the average grade from 69.63 to 76.38 with classical completeness 77.5% -87.5%. More research is also conducted by Nainggolan (2010), with the implementation of *word square* model to improve student learning activities in molusca material in class X-2 SMA Negeri 1 Sei Rampah can improve activities students much as 87.5%. Other research has also conducted by Regar (2008) with a *crossword puzzle* method can improve student's vocabulary to English subject as much 80.67%. Based on Journal of effective Teaching, Davis (2009) Reviewing for exams with title: Do crossword puzzles help in the success of student learning can increase of the mean score from 68.57 to 76.07 and based on the journal with title Effect of evaluative feedback on performance and retention of secondary school students in Biology with immediate evaluation feedback get score standard deviation 1.77 to 2.43 and without feedback 2.46 to 2.05.

Based on the above considerations, the researcher tried to compare two models of innovative learning of student learning outcomes and students' retention on 'Plants Movement'. Therefore, researchers intend to research at SMP Negeri 1 Tebing Tinggi because this school is the researchers' PPL-T school; researcher has learned the weakness and strengthens learning at the school. So, the writer will hold a study titled **"The Comparison of Student Learning Outcomes and Retention Through Implementing Word Square and Crossword Puzzle Model on Plant Movements in Class VIII SMP Negeri 1 Tebing Tinggi (Academic Year 2011/2012)".**

1.2. Problems Identification

Based on the above background of the study, the problems identification in the study was:

1. Lack of students' understanding of vocabulary in English terminology in Plant Movement lessons
2. Lack of students' memories for lessons that have been taught previously

3. Score of students' biology is still low when questions test in English is about 26.7%

4. Teacher does not yet use learning method exactly during learning process plant movements

1.3. Research Scope

1. This research is experimental research on Plants Movements topic

2. Performed for students VIII 1 and VIII 3 SMP Negeri 1 Tebing Tinggi Academic Year 2011/2012

3. Performed to see learning outcome and retention through implementing word square and crossword puzzle model

1.4. Research Question

Starting from this background and identification of the problem, so the problem can formulated as follows:

1. Is there any difference between students learning outcome who taught by using *word square* and those who taught by using *crossword puzzle* model on plant movement topic in SMP Negeri 1 Tebing Tinggi Academic year 2011/2012?

2. Is there any difference between student retention who taught by *word square* model and those who taught by using *crossword puzzle* model on Plant Movement topic in SMP Negeri 1 Tebing Tinggi Academic year 2011/2012?

3. Which one do better are used between *word square* model and *crossword puzzle* model to know student learning outcome and students retention on plant movement topic in SMP Negeri 1 Tebing Tinggi Academic year 2011/2012?

1.5 Research Objective

The purpose of the study was conducted to determine:

1. Knowing difference between students learning outcome is taught by using *word square* and those who is taught by using *crossword puzzle* model on plant movement topic in SMP Negeri 1 Tebing Tinggi Academic year 2011/2012

2. Knowing difference between student retention is taught by *word square* model and those who is taught by using *crossword puzzle* model on plant movement topic in SMP Negeri 1 Tebing Tinggi Academic year 2011/2012

3. Knowing which one do better are used between *word square* model and *crossword puzzle* model to know student learning outcome and students retention on plant movement topic in SMP Negeri 1 Tebing Tinggi Academic year 2011/2012

1.6. Significance

Benefits of the implementation of this research are:

1. As an alternative learning model for teachers

2. To introduce an innovative learning model for students who can overcome boredom for students and improve learning outcomes better.

3. To help student can remember biology terms easily

1.7. Operational Definition

1. *Word Square* model is the innovative learning that base on information processing theory especially Gagne theory in which using word square games as the media for plant movement topic

2. *Crossword puzzle* model is the innovative learning that base on information processing theory especially Gagne theory in which using *crossword puzzle* games as the media for plant movement topic.

3. Retention is a process to recall our memories with to give evaluation to measure it after the topic finish taught since fourteen days the lesson taught.

4. Learning outcome is result obtained by students after learning process on biology subject that can shown by score of test

5. Plant movement is topic in biology in class VIII semester II that will reviewed using *word square* and *crossword puzzle* model to support learning outcome of students based on KTSP.