

CHAPTER I

INTRODUCTION

1.1. Research Background

Education is a conscious effort with the aim to develop human quality. The main target of education is to empower teachers and students as much as possible to develop the student's competences appropriate environmental conditions. Education always oriented toward preparing student to participate in future. Therefore, the development of educational facilities as the one of the main prerequisites to pick the future with all the opportunities and challenges (Tirtarahardja, 2005).

The quality of education is an indicator for development rate of the country, and therefore the development in education sector is a key for the development of the nation. Unfortunately, the quality of education in Indonesia is still low. It caused by learning quality is not optimal. This is shown by the low student learning outcomes in senior high school, especially in chemistry. There are many students fail in the chemistry examination in SMA Negeri 1 Perbaungan. They have chemistry value lower than KKM that decide by school. It is about 60% student have lower chemistry value. It caused the learning model which teacher use only direct instruction so student activity is low. The KKM value in this school is 75. Therefore it is necessary to improve learning model to minimize the percentage of students number who have value that lower than KKM which is have been decided by the school.

Generally, less student interesting related to how teachers present lessons. Teachers have less variation in presenting the subject matter. Learning activities always begin with greetings, apperception, material explanations, exercise and giving home assignments. Everything is done by teachers without involving students directly. Sometimes teachers also provide media in learning, but students just see or listen it. The learning model that teacher use cause

students passive, less interaction and collaboration with other students. Supposedly, the teacher is demand for creative in implementing a leaning model that allows students to learn easier, fun, and can achieve the goal as expected. To be more optimal learning, the learning model should effective appropriate with the subject being taught in improving student achievement.

Some previous researchers have improves the learning model by using Problem Based Learning (PBL) model, because the characteristic's of PBL are student centered; students are required to be active and self-motivated learning. PBL is one of model that make active learning occured. The essence of Problem Based Learning consists of presenting students with authentic and meaningful problem situations that can serve as springboards for investigations and inquiry (Arends, 2012).

PBL makes students work with classmates to solve complex and authentic problem that help develop content knowledge as well as problem-solving, reasoning, communicating, and self-assessment skills. These problem also help to maintain student interest in course material because students realize that they are learning the skills needed to be successful in the field (White, 2011).

The result of research conducted by Napitupulu (2013), show student's achievement are taught with a problem based learning model is significantly better than the learning outcomes students with not using problem based learning model. Then the result of research conducted by Sitorus (2011) show average score of student learning outcomes without Problem Based Learning method amounted to 28,00 (with standard deviation of 8, 29 average standard error 1,40). These result increased after the Problem Based Learning method with average learning outcomes become 52,52 (with standard deviation of 11,64 and standard deviation of 1,97 on average). Student learning outcomes with the Problem Based Learning method is better compares with the results of learning without a Problem Based Learning methods. It also prove by Hasni in her research, student learning outcomes are taught using problem based learning model higher with average pretest = 22,25 and an average post test = 61,25 rather than student learning outcomes are taught by direct instruction with an average pretest = 18,5 and

average post test = 36,13. This shows that the application of PBL models have a significant influence on learning outcomes of students to the concept of chemical reaction rate.

The result of research Harahap, (2014) show Problem Based Learning Model on the teaching of solubility and solubility product can enhance student's achievement and cooperative and responsibility character. The average of posttest in experiment class is $86,40 \pm 6.21$ with gain 0,82 (high) and the average posttest in control class is $78,20 \pm 5.57$ with gain is 6,29 (medium). The percentage of student's cooperation and responsibility character from observation sheet data were developed from the first meeting up to third meeting. The average of students cooperation character for all meeting is 70.22%, while for students responsibility character is 74.59. the average students cooperation character from questionnaire data is 85.11 and students responsibility character is 88.44%.

Beside the Problem Based Learning, the Team Games Tournament (TGT) is one of cooperative learning which emphasizes the cooperation between members of the group to achieve the learning objectives. There are four stages in the TGT is teaching, learning groups, tournament/ competition, and award groups. The interesting thing from the TGT which distinguishes it from other type of cooperative learning is the tournament. In the tournament, the same academic ability of students who will compete to get highest score in the tournament table. So students of high academic ability will compete with the students of high academic ability of students as well. Therefore, every students has the same opportunity to be the best in the tournament table. This will certainly motivate the students to learn that also affect student achievement.

The application of cooperative learning model TGT in a redox reaction material can enhance student's creativity. In the first cycle the percentage of student with high creativity 51,15% in the second cycle increased to 81,82%. The application of cooperative learning model TGT may improve cognitive learning achievement in material redox reactions. The percentage of students passing grade increased from 42,42% in the first cycle to 81,82% in the second cycle. For affective learning achievement showed an increase in the average achievement

indicator of 72,31% in the first cycle to 79,01 in the second cycle (Nopiyanita, et all 2013). Through PBL model and TGT is expected to provide solutions and exciting new atmosphere in teaching so as to provide a learning experience with new concept. PBL model and TGT brings innovative concept understanding and emphasize student activity, is expected to improve student learning outcomes.

PBL as the learning model has many advantages which are can be made to improve student's achievement, namely: Challenging students' abilities and give satisfaction to discover new knowledge, increasing student motivation and learning activities. Assist students in transferring knowledge to understand the real-world problems. PBL may encourage students to evaluate themselves welll to the results and the process of learning and develop students' ability to think critically and develop their ability to adjust to new knowledge. Not only PBL but also TGT have many advantages to use as the variation of learning approach, namely: the involvement of students in higher learning and enthusiastic. The knowledge gained students not solely from the teacher but also through its own construction by students. Can foster positive attitudes in students, such as cooperative, tolerance, responsibility, and can accept other people's opinions. Train student express or convey an idea or ideas.

Based on explanations previous paragraph, the author is proposed to do research with title **“The Implementations of Problem Based Learning (PBL) Model Integrated Team Games Tournament (TGT) to Increase Student's Achievement and Character on Learning in Periodic System of Elements at Senior High School”**.

1.2. Problem Identification

Based on the background describe above, then obtained that:

1. Why is the student's achievement is still low?
2. Why some teacher are still using less variation learning models?
3. How do increase student's activity?
4. How to measure the character of students, especially team work character.

5. Can the PBL model increase the student's achievement?
6. Can the PBL model generate student's activity?
7. Can the TGT model generate student's teamwork?

1.3. Problem Limitations

Based on identification problems above, there is a wide of issues so this research is limited to know the following:

1. This research will be conducted at the Senior High School (SHS) at SMA N 1 Perbaungan class XI using KTSP curriculum, first semester on academic year 2015/2016.
2. The subject material that will be taught is periodic system of elements.
3. Teaching model that will be applied in this rlearnesearch is problem based learning model (PBL) integrated with team games tournament (TGT).
4. The character that will be measured in this research is teamwork.
5. Student's achievement will be measured using the cognitive aspect of C1, C2, C3, and C4 level.
6. Student's achievement will be measured using instrument test and student's character will be measured using observation sheet.

1.4. Problem Formulation

Based on the background described above, then the problem can be formulated as follows:

1. Is student's achievement who learn using PBL model integrated with TGT higher than student's achievement who learn by TGT?
2. Is student's teamwork who learnt using PBL model integrated with TGT higher than student's teamwork who learnt by TGT?

1.5. Research Objective

1. To know the results comparison of student's achievement who had been learnt using PBL model integrated with using TGT.

2. To know the average percentage of student's teamwork that developed by applying problem based learning model integrated with team games tournament.

1.6. Research Benefit

This research is expected can usage as follows:

1. To provide guidelines for teachers of science, especially chemistry teachers to use problem based learning integrated with team games tournament in learning process that can improve student's achievement.
2. To change student's paradigm that chemistry is not a difficult subject, so it can improve their motivation to learnt and also the understanding about periodic system of element.
3. To provide inputs for next researchers to do similar research in the future.