

CHAPTER I

INTRODUCTION

1.1 Research Background

Chemistry is one of the most important branches of science; it enables learners to understand what happened around student. Because chemistry topics are generally related to or based on the structure of matter, chemistry proves a difficult subject for many students. Chemistry curricula commonly incorporate many abstract concepts, which are central to further learning in both chemistry and other sciences. These abstract concepts are important because further chemistry/science concepts or theories cannot be easily understood if these underpinning concepts are not sufficiently grasped by the student (Sakti, 2014).

Based on the experienced of PPLT in the SMAN 2 Balige, Generally teachers do not use cooperative learning model in teaching chemistry topic. Most of teacher who teach chemistry through face to face in the classroom using conventional learning, which is dominated by the lecture method. Thus, these methods of learning is still teacher-centered learning, have not been able to increase the active role students in the learning process, and provides less opportunity for students to express their understanding and skills. Students will find it is hard to follow or get the essence of learning materials, so that their activities are limited to take notes apocryphal. The pattern of active learning with students' teachers is passive low efficacy and can't develop the active participation in the learning process.

In the process of learning, success is measured based upon achievement of competence of teaching and learning established since the beginning of the learning activities. Teacher's role is very important in learning. The teachers act as facilitators, mediators, and counselors. In this role, the teacher should also be able to work well with students, support each other so that the achievement of competence specified. An important element in the process of teaching and learning is a method of teaching and learning media that used in accordance with the material being taught. It is trivial, but these link to each other. (Slameto,2003).

Teachers should be known to teach the learning material by used method combined with media compatible. The teachers need to be more creative and innovative in teaching, especially in the learning chemistry topic. Education without technological advances is boring. The tendency of a teacher in delivering subject matter using the same method in chemistry courses, asked students to read and memorize the learning materials make students feel bored, annoyed and less active. (Hamalik,2008). It is make decrease of students' interest inquired for the material being taught and understand it. The teachers should keep students' interest and motivate to learn in different ways of teaching, using varies teaching method and combined with teaching media in improving students' motivation and students' achievement. (Mulyani, 2009).

The facts are often found is a learning model that is often used by teachers is a conventional model. In this model, the teacher lecturing while students just sit down, take notes and listen to what is presented teacher. Sometimes teachers give students the opportunity to ask if there are things that not understood in the subject matter described. However this is not strong enough to stimulate the students in improving its activity following the learning process. This condition is one factor causing low student learning outcomes. Therefore, teachers need to develop learning that can improve the character and student learning outcomes with the use of appropriate learning strategies. One model of learning that can be used is the model cooperative learning.

Cooperative learning model is a learning approach that focuses on the use of small groups to work together to maximize the learning conditions for achieving the goal (Muhammad, 2010). Cooperative learning model is method that can be done because it can improve learning progress; makes positives attitudes of students; increases motivation and confidence of students.(Slavin, 1995).

Cooperative learning model has several types with different steps include learning model STAD (Students Teams Achievement Division), TGT (Team Games Tournament) and Jigsaw. Where all three of these methods are equally divide the students into groups of heterogeneous and students work together with the group, so that students can exchange information and learning experiences.

Students Team Achievement Division (STAD) is a cooperative learning model for mixed-ability groupings involving team recognition and group responsibility for individual learning. STAD cooperative learning model is one of the simplest models of cooperative learning and is an appropriate model for starters for teachers who use cooperative approach. On STAD learning model teachers prepare and develop the concept of the material before learning begins is a good step and precise enough to be able to support the learning process.

While the cooperative learning model TGT (Team Games Tournament) is a teaching and learning techniques to engage students interested in studying the material covered in the lesson and check their understanding of the lesson content. TGT is a cooperative learning designed to develop the knowledge in saying the idea or opinion verbal and compare with the others' ideas. (Trianto, 2009).

Cooperative learning model Jigsaw is one type of cooperative learning where students form group responsible of the material assigned student teaches then teach it to the other members in the group. The concept of the jigsaw is peer tutoring learning. Learning jigsaw expected to improve the students to be responsible for the assignment. (Lie, 1993).

Character is something that has influence in the learning process. Aristotle, the Greek philosopher, stated that good character is a practice of correct behavior. Furthermore, Aristotle says that life in modern times tend to forget manners including self-orientation, such as self-control, generous attitude, and social sense. Character is a set of traits that define the figure of a person as an individual. Character determines whether someone in achieving the desire to use the correct way according to the environment and comply with the laws and rules of the group.

One of the subjects in SHS Chemistry that interesting to discuss and study is Solubility and Solubility Product. The solubility and solubility product is a challenging one for chemistry teacher because high school students are difficult to understand both in conceptual theory (Blanchard, 2001). The purpose of the research planning are to investigate the differences of students' learning outcomes

and students' characters through implementation of cooperative learning model types in solubility and solubility product. The study is conducted to high school students in North Sumatera (three SHS).

Based on descriptions above, researchers want to apply various types of cooperative learning model is not only on learning outcomes but also on the character of students, so researchers interested in conducted research with the title **“The Differences of Students’ Learning Outcomes and Students’ Characters through Implementation of Cooperative Learning Model Types in Solubility and Solubility Product Topic”**.

1.2 Problem Identifications

Based on the background above, so the problems that can identified as following:

1. Generally teachers do not use cooperative learning model in teaching chemistry topic.
2. Teacher use monotone and less attractive method in classroom so that students' learning outcomes and motivation is low.
3. The concepts of Chemistry still difficult understanding by the students.

1.3 Scopes of The Study

In this study, the problems are limited to scope:

1. This research is focused to Senior High School in class XI on the subject matter Solubility and Solubility Product.
2. To know the increasing of student achievement with cooperative learning model (STAD, TGT, and Jigsaw).
3. The topic of Solubility and Solubility Product: Solubility and Solubility Products, The Effect of Common Ion to the Solubility, The Effect of pH to the Solubility and The Precipitation Reaction.

1.4 Problem Formulations

Based on the problem identification above, the formulation problem in this research are:

1. Is there any difference of learning outcomes from students on learning solubility and solubility products among the Cooperative Types STAD, TGT, and Jigsaw classes?
2. How the characters of students who taught by STAD, TGT and Jigsaw classes?
3. How many increasing of students' learning outcomes who taught by STAD, TGT, and Jigsaw?

1.5 Research Objectives

The research objectives in this case are to investigate the best method in teaching Solubility and Solubility Products topic. The specific objectives of the study are:

1. To know difference of learning outcomes from students on learning colloids system among the Cooperative Types STAD, TGT, and Jigsaw classes.
2. To know the characters of students who taught by STAD, TGT and Jigsaw classes.
3. To know the increasing of students' learning outcomes who taught by STAD, TGT, and Jigsaw.

1.6 Research Significances

The significances of this research are:

1. For the Researcher :
 - a. Improving the knowledge of research
 - b. To increase the students' achievement in subject matter that taught
2. For Teachers
 - a. As the alternative in learning process
 - b. To grow the creativity of teachers in the learning process.

3. For the Prospective Teacher
 - a. To train the own self to find the solution in process of the learning activity in the classroom.
 - b. Training the own self to make the learning tools.
4. For School
Giving the donation for school in leaning repairs.

1.7 Operational Definition

The operational definitions in this study are:

1. STAD cooperative learning model is a cooperative learning method for mixed ability grouping involving the recognition of team and responsibility for individual learning group members. Membership according to the level of achievement, gender, ethnicity and 4-5 people in one group.
2. TGT has the academic games, so that it can be process of learning become pleasure and create the team competition that based on the responsibility of each individual. Students work in the group that consists of 5-6 people with the different academic knowledge, gender, and ethnic group.
3. Jigsaw cooperative learning model is one type of cooperative learning where students form group responsible of the material assigned student teaches then teach it to the other members in the group. The concept of the jigsaw is peer tutoring learning. Learning jigsaw expected to improve the students to be responsible for the assignment. It consists of 4-6 people per group member.
4. *Solubility* is the amount of solute to that of solvent. Solvent is substance used to dissolve solute, commonly the amount of the solvent is more than that solute. A solubility product is a condition that can dissolve in water until it gets a saturated condition.