CHAPTER I
INTRODUCTION

1.1 Background Research

Education in Indonesia already classified in a terrible condition. This has been a common secret about the education quality in Indonesia that getting worst every year. As a system, education contain some components that connected each other. The components include vision, mission, base, aim, curriculum, competence and teacher's pofessionality, pattern relation of education and student, learning method, tools and infrastucture, management, evaluation, funding and etc.

The explanation of Education Minister 2014 shows that 75% school in Indonesia doesn't fulfill the minimal standard service of education, 44.5 average value of teacher competence test, whereas the expected standard is 70. Based on the those data, the rank of Indonesia is 40 from 42 country in mapping TIMSS in Science literation sector (Paparan Menteri Kadisdik 2014).

Data above shows that one of the supporting aspect in education success is teacher's quality. Teachers always demanded to increase their quality and learning. Teacher's quality considered in 2 aspects, there are process and achievement. In process, teacher said success if they able to involve most of students to be active, in physical, mentality, and learning social. While the achievement, teacher said success if the learning given able to change the behavior of most of students to a better mastery of basic competence.

In increasing those education quality, government has been cue in UU Sistem Pendidikan Nasional No. 20 Tahun 2003 Pasa 3 to have efforts to develop the student's ability so they can be more educated, capable, creative and responsible. The learning process in the world that always change, so the traditional learning is not relevant anymore to active and creative student. So the traditional learning should be changed as soon as possible to be a learning with the approacment and method based on student center (Kusuma, 2012) .

Chemistry is a science that learn about composition, characteristic and change of matters. Chemical change can be found in nature and laboratorium. In learning process, students often found difficulty in understanding chemistry that in abstract form. So, its need a creative approachment that will support students to be active in searching knowledge and able to increase their learning achievement (Rahayu, 2010).

Various innovation in Science education has been done in the latest time. This is the effort to give learning to students, so they can study optimally. One of learning model that can be used to increase student achievement, make learning become fun, and developing the cooperative attitudes is cooperative learning model (Slavin, 2011). In cooperative learning model, students learn together as a group in solving the team's problems to achieve collective aims, so each member have same responsibility for the succes of their group. There are various cooperative learning models, there are Student Team Achievement Division (STAD), Jigsaw, Group Investigation (GI), Teams Games Tournaments (TGT), Think Pair Share (TPS) and Numbered Head Together (NHT).Cooperative learning model Think Pair Share is an effective of cooperative learning model to make a variance condition of discussion form. The procedure used in think pair share model can give students more time to think, response and help each other. According to Joyce et al (2009) exercises in cooperation could be done with a simple grouping, by two students in one group assigned to complete a cognitive task. This technique previously. In discussions required some thinking skills, among other things: recognize the problem; find ways that can be used to address these problems; collect and collate the necessary information; understanding and using language that is appropriate and clear; analyze the data; and draw conclusions.

Think-Pair-Share is a cooperative learning technique which is said as a multi-mode discussion cycle in which students listen to a question or presentation, have time to think individually, talk with each other in pairs, and finally share responses with the larger group. Its is a learning technique that provides processing time and builds in wait- time which enhances the depth and breadth of thinking.

Using a Think Pair Share, students think of rules that they share with partners

and then with classmates in a group. The general idea of the think pair share is having the students independently think or solve a problem quietly, then pair up and share their thoughts or solution with someone nearby. Obliquely, this technique let the team learns from each other. (Azlina, 2010)

These thinking skills are the foundation for critical thinking. While the share stage, students will share with the whole class. At this stage the necessary capabilities needed to say something with confidence. Thus each stage contained in the learning model Think Pair Share is thinking skills, critical thinking foundation, and the definition of critical thinking skills. So that the stages in the learning model Think Pair share goes well the students' critical thinking skills are indispensable. Critical thinking is a process that is focused and clear used in mental activities such as solving problems, making decisions, persuade, analyze assumptions, and conduct scientific research. Critical thinking is the ability to argue in an organized the mannerr of students (Surayya, 2014).

Improving student learning outcomes and cooperation, the use of scientific approach was needed. Scientific approach to make learning more active and not boring, students can construct their knowledge and skills through the facts found in the investigation in the field in order to learn. Besides, with this scientific approachment, students are encouraged better able to observe, ask questions, reasoning, and communicating or presenting things learned from direct experience, or natural phenomena (Kemendikbud, 2013: 203.212).

Teamwork is defined as a cooperative learning process which enables a group of students to achieve extraordinary results. Team members also have the same goal and they can develop effective relationships to achieve their goals. The team members work together under cooperative environment by sharing knowledge, ideas and perceptions to achieve their team goals. (Samsuri N.S , 2017)

In chemistry, for example, the students were invited to observe natural events and materials that surround it with the activity observed, ask, and concludes with

the surrounding environment in daily life. So that students will be more active in seeking out and remember the lesson.

Based on research conducted by the Etik Prayudhawati (2010), using a model Think-Pair-Share Increase demonstrate teaching skills in the following cycle and the students reach achievement from 72.22% to 94.44%. Kusuma (2012) in The observations also showed a significant increase in activity learning using learning model Think-Pair-Share is equal to 65.32% in the first cycle to 88.55% in the second cycle untu the average score. Also Sunita M Dol (2010) in her research have found that 99% students agreed that think-pair-share activity developed interest in them to learn and also 100% students agreed that they found the Think-Pair-Share activity effective.

And about the scientific approach research, Arlianty W.N (2017) has found that the application of scientific approach in physical chemistry experiment give a high criteria with percentage 86.11% in aspects communicating. While results of analysis of each aspect shows that the implementation of learning with the scientific approach can improve motivation, curiosity and confidence of students.

Based on the description above, thus, author would like to do a research about **" The Influence of Think Pair Share Learning Model integrated with Scientific Approach to Increase Student's Learning Achievement and Teamwork in Buffer Solution Subtopic in Grade XI of SMAN 17 Medan Academic Year 2016/2017 "**

1.2 Problem Identification

Based on that background, there are some problems that can be identifed as follows :

1. The student's learning outcome of Chemistry is not reach the standard value (KKM)
2. The traditional learning model make students less active to explore the new knowledge.
3. The Think-Pair-Share learning model able to increase student's learning outcome
4. The students is not active in teamwork because of teacher centered learning.

1.3 Problem Limitation

Based on the background above, the limition of problem can be identified as below :

1. This research is limited to the implementation of Think Pair Share Learning Model.
2. This research is limited to the student's learning outcomes.
3. This research is limited to the student's teamwork/cooperative character
4. This research is limited to Buffer Solution topic.

1.4 Problem Formulation

Based on the background of problem, identify of problems, and circumscription of problem, hence abbreviation of problem in this research are :

1. Is the student's learning outcome that taught by think pair share model significant higher than taught by direct instruction method?
2. Is the student's teamwork that taught by think pair share model significant higher than taught by direct instruction method?
3. Are there a correlation between student's learning outcome and student's teamwork ?

1.5 Research Objective

Based on the previous problem formulation, so the following is some objectives of research :

1. To know the student's learning outcome that taught by think pair share model is significant higher than taught by direct instruction method.
2. To know the student's teamwork character that taught by think pair share model is significant higher than taught by direct instruction method.
3. To know the significant correlation of the teamwork character can be developed by using think pair share learning model.

1.6 Research Benefits

Benefits of this research that hopefully can be reached are :

1. For teacher, giving motivation to teacher to be more active in development of teaching model especially to upgrade quality and process of teaching learning in class.
2. For school, this research will give worth suggestion to any school or institution especially school where will be held this research to increase the quality of chemistry learning.
3. For student, this research will give motivation to them in understanding chemistry, or can change their perception about chemistry as an uninteresting or annoyed and scary lesson, and about the difficulties by using an active model like think pair share model.
4. For research, this research will increase knowledge, skills, ability and experience in completing the competence of teacher candidate.
5. For chemistry education study program and society, to be a comparison material to another researcher in next research .

1.7 Operational Definition

1. Think Pair Share is a learning model that involves students to think by themselves, and then discuss the result of the problem with their mates in a pair, and sharing their result to the whole class.
2. Scientific approach is learning process in constructing a concept by a several steps. The steps are observing, asking, experimenting, associating, and networking.
3. Learning outcome is a coognitive knowledge from high school students to obtain a knowledge and a change of behavior.
4. Teamwork is a student's behavior to reach one or some purpose together.
5. Buffer solution is a topic in grade XI at even semester that discuss about the definition of buffer, calculation of pH system of buffer solution by using Handerson-Hasselbach equation, the work system of buffer in addition of small amount of acid, base or water, and the preparation of buffer solution.