CHAPTER I
INTRODUCTION

1.1. Research Background

Higher Order Thingking Skills (HOTS) is a thought process that requires students to manipulate information and ideas in certain ways that give them new understanding and manipulation (Gunawan, 2012: 171). It describes high order thinking involving critical and creative guided by truth ideas, each of which has meaning. Critical and creative thinking are interdependent, as are criteria and values, reason and emotions (Kuswana 2012: 200). Higher Order Thingking Skills (HOTS) is a way of thinking that is no longer just verbalistic memorization but also means the essence of what is contained, among other things, to be able to interpret meaning that is integralistic way of thinking through analysis, synthesis, association to draw conclusions towards the creation of creative and productive ideas.

The implementation of the 2013 curriculum demands the ability of teachers to train students to improve their higher order thinking skills (HOTS) where students are required to be critical, creative, and innovative students in exploring complex experiences. Higher order thinking skills (HOTS) is a thought process that involves mental activity in an effort to explore complex, reflective and creative experiences that are consciously carried out to achieve the goal of acquiring knowledge that includes the level of thinking analysis, synthesis and evaluative (Rofiah, 2013: 17).

The ability to think that is more developed in individuals like that It is expected that the 2013 Curriculum will not happen suddenly. Educational institutions as institutions that are responsible for managing and organizing education, play a role to equip students with abilities that are useful for facing their future lives, one of them is Higher Order Thinking Skill (HOTS). As explained in Bloom's Taxonomy, the ability of students can be classified into two, namely high and low levels. Low-level abilities consist of knowledge, understanding, and application, while high-level abilities include analysis,

synthesis, evaluation and creativity. Thus, the activities of students in memorizing include low level abilities.

Chemistry is a subject that has the characteristics of a combination of theory and scientific activity in the form of understanding a concept given to students through explanation (Istiana, et al, 2015). Hydrolysis of salt is a material that is listed in the 2013 syllabus of chemistry curriculum in class XI SMA. Salt hydrolysis is the reaction of aqueous ions in solution with the water. Based on the concept of hyrolysis, the salt ion that comes from weak acid and weak base react with water. In this material there are concepts, calculations, and problems that are considered difficult by students which result in lack of full comprehension of learning material leading to learning outcomes that are less than optimal for students.

Learning outcomes are often used as a benchmark for achieving educational goals. Learning outcomes are the realization of the achievement of educational goals so that learning outcomes are measured very much depends on the purpose of education (Purwanto, 2009). To get a satisfying chemistry learning result, a teacher needs to use the right strategy in chemistry learning. Although in reality students in one class get the same treatment in learning, but the concepts that can be understood by each student are different. One strategy for achieving competency success in a subject is to make learning take place actively.

One of the hopes to be achieved in chemistry learning in Senior High School (SMA) based on the 2013 curriculum is that students have the ability to think scientifically. The ability to think scientifically, especially higher order thinking skills is needed related to the needs of students to solve problems they face in their daily lives. Therefore the ability to think scientifically needs special attention in chemistry learning. In order to achieve this goal, the ultimate issue in chemistry learning now is developing Higher Order Thinking Skills (HOTS) and making it the main goal of chemistry learning. While in Government Regulation No. 19 of 2005 concerning national education standards that the science subject group is intended to recognize, respond to, and appreciate science and technology

and instill the habit of thinking and behaving in creative, independent and critical scientific (Pratiwi et al., 2014).

Based on observations in SMA N 1 Perbaungan that implemented the curriculum, there are still many who use direct intruction model, even though the facilities for using learning media are still adequate, such as chemical laboratories, LCD sets, and computer laboratories. However, the willingness of teachers to make and use the media is still limited, this makes the application of the lecture model still common. In addition, the minimun completeness criteria (KKM) value for Chemistry subjects is 75. From this value it can be seen that the standard values set are quite low because there are many students who feel bored and do not understand Chemistry lessons taught by teachers at the school. So that many students often get low scores during daily tests or semester exams, because the average score of students is only around 65-75, rarely are there students who can reach 80.

Responding to the problems that arise in chemistry education and hopes to be achieved in chemistry learning, the right learning model is needed to improve students' critical thinking skills and in accordance with the 2013 curriculum. There are several factors that can influence learning success, one of which is the use of learning models (Totiana , 2012). Variations in learning models that might be applied to overcome these problems are learning models of Creative Problem Solving Models which is a variation of learning Problem Solving with problem solving through systematic techniques in organizing creative ideas to solve problems.

Creative Problem Solving (CPS) is a learning model of problem solving in an imaginative way and emphasizes skills and creativity to solve one problem. The CPS learning steps are as follows: (1) Problem clarification; includes giving explanations to students about the problems posed, so students can understand what solutions are expected (2) Brainstorming / Opinion Disclosure; students are free to express opinions about various kinds of problem solving strategies. (3) Evaluation and Selection; each group discusses a suitable opinion or strategy to solve the problem. (4) Implementation; students determine the right strategy to

solve the problem, then apply it in solving the problem (Pepkin in Muslich M, 2007).

The research of the CPS model was carried out previously by Hartantia (2013) with the title Application of Creative Problem Solving (CPS) Model to Increase Interest and Learning Outcomes of Chemistry in the Basic Material of Thermochemistry of Class XI.IA-2 SMA Negeri Colomadu Academic Year 2012/2013, cognitive learning the gain increased from 62.86 to 85.71 and affective learning outcomes increased from 66.38 to 71.67. Supardi and Putri (2010) with the title Effect of Using Chemical Articles from the Internet on the Creative Problem Solving Learning Model of High School Student Chemistry Learning Outcomes, the learning outcomes obtained increased from 65.5 to 82.3. Totiana (2012) with the title Effectiveness of the Creative Problem Solving (CPS) Learning Model that is equipped with Virtual Laboratory Learning Media on Student Learning Achievement in Colloidal Main Material in Class XI Even Semester in SMA Negeri 1 Karanganyar 2011/2012 Academic Year, cognitive learning outcomes obtained increased from 64.25 to 82.35 and the affective learning outcomes obtained increased from 82.89 to 94.38. Sriwati, et al (2013) with the title Comparison of Individual and Group Effectiveness (Creative Problem Solving) Against the Chemistry Learning Outcomes of Students of Class XI Science in SMA Negeri 1 Amlapura, the learning outcomes obtained increased from 66.5 to 83.18.

Research related to Higher Order Thinking Skills that can improve learning outcomes was conducted by Shidiq (2015) on higher order analysis of thinking skills (hots) using two-tier multiple choice instruments in solubility material and solubility results for class XI students of SMA N 1 Surakarta, obtained the results of the research that have been made the conclusions obtained are as many as 7.4% of students have high order thinking skills very low, 25.2% low, 52.7% moderate and 14, 7% high. Handayani and Priatmoko (2013) with the title of the influence of problem solving learning on hots-oriented (higher order thinking skills) on the chemistry learning outcomes of class X students, obtained the results of correlation analysis obtained the number r = 0.5079, so that the

value of the determination coefficient is 25.79 %, means that the use of HOTS oriented problem solving learning has a contribution of 25.79% on student learning outcomes, while 74.21% is explained by other variables. It can be concluded that the use of HOTS oriented problem solving learning has a positive effect on student chemistry learning outcomes. Problem solving learning can stimulate students' higher order thinking skills such as critical and creative thinking. Another study conducted by Tri Widodo and Sri Kadarwati (2013) about higher order thinking based on problem solving to improve learning outcomes oriented to student character formation, obtained student learning outcomes increased to 73.84 (exceeding the target). Students who have mastered the material are 96.87%. The activity score is 83.81 (exceeding the target). Students' character and response to learning belong to the good category.

In accordance with the above background, it is necessary to conduct a research entitled "The Effect of Creative Problem Solving (CPS) Learning Model Based on Higher Order Thinking Skills (HOTS) to Student's Motivation and Learning Outcomes on Salt Hydrolysis".

1.2. Problem Identification

Based on the background of the problem as described above, the problem can be identified as follows:

1. Student's learning outcomes in chemistry especially in salt hydrolysis topic are still low and the teacher still uses the direct instruction model with a few questions and answers.
2. Learning is still monotonous so student feel bored while learning of chemistry especially in salt hydrolysis topic.
3. Student still less understanding of concept in cheimstry lecture, can see in score that they have is low and not appropriate with Criteria Completeness Minimum (KKM) standard,
4. Student still less understanding of concept learning process that can influenced spirit in learning process because the motivation not optimal.

5. Creative Problem Solving (CPS) learning model based on Higher Order Thinking Skills (HOTS) are thought to be able to improve student's motivation and learning outcomes optimally.

1.3. Problem Limitation

To make this reserach to be specific, the researcher identifies the problem and limit only on the using of Creative Problem Solving (CPS) learning model based on Higher Order Thinking Skills (HOTS) to Student's Motivation and Learning Outcomes on Salt Hydrolysis to students grade XI in science program in academic year 2018/2019.

1.4. Problem Formulation

Based on problem limitation above, then the problem formula of this research is:

1. Is there the effect of Creative Problem Solving (CPS) learning model based on Higher Order Thinking Skills (HOTS) to student's learning outcomes on Salt Hydrolysis?
2. Is there the effect of Creative Problem Solving (CPS) learning model based on Higher Order Thinking Skills (HOTS) to student's learning motivation on Salt Hydrolysis?
3. Is there the significant correlation between student's motivation and learning outcomes is taught by the Creative Problem Solving (CPS) learning model based on Higher Order Thinking Skills (HOTS) on Salt Hydrolysis?

1.5. Research Objective

Based on the above problem formulation, the research objective are as follows:

1. Knowing the effect of of Creative Problem Solving (CPS) learning model based on Higher Order Thinking Skills (HOTS) to student's learning outcomes on Salt Hydrolysis.

2. Knowing the effect of of Creative Problem Solving (CPS) learning model based on Higher Order Thinking Skills (HOTS) to student's learning motivation on Salt Hydrolysis.
3. Knowing the significant correlation between student's motivation and learning outcomes is taught by the Creative Problem Solving (CPS) learning model based on Higher Order Thinking Skills (HOTS) on Salt Hydrolysis.

1.6. Research Benefit

The results of this study are expected be useful for:

1. For Teachers

   As input material as well as information about the Creative Problem Solving (CPS) learning model based on Higher Order Thinking Skills (HOTS) in teaching chemistry and making it as an alternative learning model to improve learning outcomes.
2. For Students

   As a source in learning so can increasing motivation, activity and interest in learning activity.
3. For Schools

   Assist schools in adding to the study of learning methods so that schools are willing to provide assistance and encouragement to teachers to carry out renewal in learning.
4. For researchers

   The results of this study will add insight, ability and experience and improve my competence as a teacher candidate.

1.7. Operational Definition

The operational definitions in this research are:

1. Creative Problem Solving (CPS) learning model is a variation of learning Problem Solving with problem solving through systematic techniques in organizing creative ideas to solve problems ranging from problem

clarification, ideas disclosure, evaluation, selection to implementation (Totiana, 2012).

2. Higher Order Thingking Skills (HOTS) is a thought process that involves mental activities in an effort to explore complex, reflective and creative experiences that are consciously carried out to achieve the goal of acquiring knowledge that includes the level of analytical, synthesis and evaluative thinking (Rofiah, 2013: 17)
3. Salt hydrolysis is the reaction of aqueous ions in solution with the water. Based on the concept of hyrolysis, the salt ion that comes from weak acid and weak base react with water.

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