CHAPTER I
INTRODUCTION

A. Background

The rapid growth of science and technology nowadays is insisting people to improve both skills and knowledge in order to be able to move forward facing the world. Science and Technology play some important roles in all level of community. In other words science and technology is a key to face the global era. Therefore, educators need to prepare students by modifying some teaching strategy in order to enhance students in skills, knowledge, the way students’ think, and attitude.

Factualy most of teachers still use traditional method which is no longer appropriate with the condition nowadays. The old fashion teaching method is not eligible to be applied since this method force the students to memorize the concept by telling them the whole information about the concept, without giving them an opportunity to explore their skills, to have their own ideas, and construct the concept by their own way. This situation will lead the students to have less interest in learning science which can bring them to have low understanding in science (Boumová, 2008).

Cooperative learning is one of the learning approach that is should be implemented for students in secondary level (Cracolice et al., 2001). This type of learning is able to build students to be active in teaching learning process by giving them opportunity to explore themselves in how the way they thinking, how they communicate with others and how they involve in class. Teacher should guide students to explore themselves in finding the concept by their own in order to avoid passive learning yet provide long term memory effect for students while learning the concept.

Furthermore other advantage in using discussion in group is enable students to develop their social relation. There are some values which can be gain by the students while doing discussion in group learning in group
provides students in developing their social relation, some values that can be enhance, learning in group train students to be more open minded in facing various opinion from others, it also helps students to interact and communicate each other, furthermore it helps students to pick out some social values that can be a fundamental aspect from the group that students’ have (Ali and Asrori, 2011). Meanwhile, based on Bramaje and Espinosa (2013) one factor which influenced students’ cognitive is that grouping students, small group is utilized to enhance students in discussion session by interact each other without hesitation. In other words, students with small group discussion experienced less hesitation to ask the concept thus, the discussion will lead students to have better understanding about the concept.

One of the cooperative learning is peer-led team learning, which developed by chemistry educators in 1990s which can be said as a better method that is able to challenge students to take responsibility for their own learning, while at the same time it is able to give them necessary guidance more than traditional learning.

Based on Horwitz and Rodger (2009) Peer-led team learning provides some advantages: improved leadership skills, opportunity to try out leadership, increase confidence of students, enhance in conceptual understanding and strengthen friendship among students, including other peer-leader. Other study also found that Peer-led team learning also provides learning situation where students can enhance both conceptual understanding reasoning abilities. Peer-led team learning exposed students in different areas such as exposure in teaching different strategy of teaching, confront new colleagues, build self confidence, exchange ideas with group, and develop different skill (Bramaje and Espinosa, 2013). Besides, the skills that can be developed by using Peer Led Team Learning are also stated in Indonesian National Curriculum, which is curriculum 2013 that stated on basic competence 2.1 Respect individual works in group, as the implementation on their daily life, in doing the experiment.
Thus, the statement is correlate with the implementation of peer led team learning since peer led team learning is able to improve students’ leadership skills of students (Horwitz and Rodger, 2009), peer led team learning also able to improved students in small group discussion (Bramaje and Espinosa, 2013), by involving in small group discussion, students is able to respects other’s work, and opinion as requested in national curriculum 2013.

Nonetheless, a learning method can be considered success when those learning method can increase conceptual understanding and skills of students. According to Bloom taxonomy on Krathwohl (2002) the conceptual understanding can be measured in how students understand the concept, retrieving the relevant knowledge from long term memory, implementing the concept, analyzing how one part connect each other, critiquing on something based on several criteria, and producing an original product.

Author would like to enhance the conceptual understanding of students, and quality of teaching learning process by implementing peer-led team learning that elaborate with project making. By making the project, students are able to implement the concept that they learned in class then implement into the real situation which relate with their daily life. So that students not only learn the concept but also learn how to implement the concept and create something to face the problems in the daily life.

One of the skill that can be improve by using peer led team learning is leadership skills (Howirtz and Rodger, 2009) since the workshop of peer led team learning will run by a trained peer leader. Nowadays, people need the increasing number of effective leader in the future (Ogurlu and Emir, 2013) which means that teacher should not emphasis the students only in cognitive aspects but also in skills and personality since those aspects will be used in order to prepare them in the future to face the society. In fact, most of students in an International School in Bandung where the
researcher did the research have ability to be a good leader by showing some indicators of leadership skills such as some students can show their responsibility to their work, and able to communicate and share their ideas to others.

Based on Winston and Patterson (2006) a leader is one people or more who has abilities, skills, and gifts to influence or trains the follower. Hence, a leader is the one who can bring the team to the success by giving a good influenced to the team. Meanwhile, Alalfy, Al-Aodah, Shalaby (2013) define some aspects that should be examine the leadership skills in academic purposes which stated that leadership skills in educational setting is able to examine some aspects from the leader, there are four distinct categories such as cognitive, interpersonal, business and strategic skills.

Other research was done by Bramaje and Espinosa (2013) defined that a leader should have better understanding than group member since the knowledge is necessary for the leader to interact within groups and able to play important role in group dynamic. Thus, intellectual ability is an important thing that a leader should have to help group member to understand the concept since the team will full guided by the team leader.

Those statement means that a leader that leads the team not only has good strategy in guiding the team, but also team leader should have high intellectual skills and good personality in order to be capable in guiding the team in a proper way.

The demands of the effective leaders are increasing day by day, so that teacher should provide opportunity for students to develop leadership skills for students, in order to fulfill future demand. Through peer-led team learning, teacher can provide opportunity for students to explore their leadership skills.

Refer to the curriculum 2013, Global warming is one of the concept that should be learn by students, based on core competence 3 Understand, implement, and analyze factual knowledge, conceptual, procedural, and
meta cognitive based on his curiosity about science, technology, arts, culture, and humanities with an insight into humanity, national, state, and civilization-related causes of phenomena and events, applying procedural knowledge in a specific field of study according to their talents and interests to solve the problem and core competence 4 Processing, reasoning, and provide in the real of the concrete and abstract domains associated with the development of the learned at school independently, act effectively and creatively, and be able to use the method according to the rules of science. Hence, the concept is quite challenging for students to be used in implementing peer-led team learning. Since students demanded to have better reasoning skills in core competence 4 in curriculum 2013 and implemented what they have learnt to the real condition which is suitable with this result that will implemented project based learning combined with peer led team learning, since this concept will rise several problems that should be solved by the students through peer-led team learning workshop by guidance of peer leader and teacher.

Peer leader should facilitate and draw the opinions and beliefs of the followers so that followers can move from ambiguity to the clarity of understanding (Winston and Patterson, 2006). So that peer leader should act as a bridge for group member to help them gain the concept in easier way by guiding them in discussion session, the key of the success in the team is that how is the roles of peer leader during project making and how the presence of peer leader influenced cognitive understanding of the team.

According to the result of the study about the implementation of peer-led team learning and leadership skills above, the author would like to analyze the effect of peer-led team learning implementation in students’ conceptual understanding and the roles of peer leader in each team during the learning by observing the leadership skills aspects that can be done by each peer leader.
B. Research Problem

Based on the background above, the problem that arises in this research is stated in the question as follow: “How is The Impact of Peer-Led Team Learning Towards Students’ Conceptual Understanding and Leadership Skills in Global warming?”

C. Research Questions

There are several research questions guiding the study noted as follows:

1. How is the impact of Peer-Led Team Learning method towards students’ conceptual understanding in learning global warming concept?
2. How is the roles of all peer leader during the implementation of Peer Led Team Learning?
3. How is the students’ impression in learning global warming towards Peer Led Team Learning?

D. Limitation of Problems

In order to make the research become more focused, the problem is limited as follow:

1. Peer-Led Team Learning is one of learning method which involves students discussing in small groups, the groups meetings are designed and run by undergraduate students leaders, who are trained to facilitate groups learning (Horwitz and Rodger, 2009). Researcher would like to conduct the research by peer-leader students from the same class with member of the groups, and the workshop will be a group project which is in line with global warming concept.
2. Students’ Conceptual understanding that is measured in this research involves from Bloom’s taxonomy revision level cognitive
of C1 (remember), C2 (understand), C3 (apply), C4 (analysis), and C5 (evaluate) based on Krathwohl (2002).

3. Students’ Leadership skills are the skills that should have by the leader to influence the follower (Winston and Patterson, 2006). This leadership skill is an essential ability to solve the conflict in group, risk taker, the ability of communicate with other (Spears, 2010). Skills that measured in this research based on Landau and Weissler (1991) are: responsibility, the urge of domination, consistency, physical energy, success oriented, articulate and persuasiveness, planning skills, determination and courage, self-confidence, empathy with the group, and emotional balance and control.

4. In this research, Global Warming concept as stated in curriculum 2013 for 7th grade, based on Core Competence number 2, and Basic Competence number 1, 2, 3 and 4

E. Research Objectives

These research objectives specified as follow:

1. To analyze the impact of peer-led team learning towards students’ conceptual understanding in learning global warming
2. To analyze the roles of each team leader in the team in learning global warming through peer-led team learning
3. To identify the students’ impression in learning global warming through peer led team learning
F. Research Benefit

The results of this study are expected to provide the following benefits:

1. For teacher:
   a) Provide the information about the influence of one of cooperative learning method which is peer-led team learning method towards students’ conceptual understanding
   b) Teacher can enhance the method in teaching science in order to improve the teaching learning process especially in global warming concept both by implementing peer led team learning and project making
   c) Teacher can improve both cognitive and skills of students through peer-led team learning method especially leadership skills of students, by assessing several leadership skills indicators and aspects from the team leader during project making.
   d) Provide the data about how students’ impress this learning through questionnaire. This would provide the information the strength and weakness of peer led team learning.
   e) As a reference for teacher about the method of teaching science in order to enrich teacher’s ability in teaching science concept

2. For Students:
   a) Students have more opportunity to enhance their leadership skills by leading a group discussion and act as facilitator to the group in order to enhance cognitive of the team through peer-led team learning method
   b) By using peer-led team learning method, hopefully students can enhance the quality of teaching learning process by actively involved in group discussion and brave to share their ideas
   c) Students will be able to learn how they interact each other within groups, how to appreciate other’s opinion during
discussion session and able to increase their critical thinking while defending their opinion in discussion session

d) Through peer-led team learning method, students can improve both cognitive and skills in joyful way. Students can explore themselves in discussion session by sharing the ideas with the guidance of the peer leader.

3. For other researcher:
   a) As a reference for other researcher, how to conduct one of the cooperative learning called as Peer-Led Team Learning
   b) Hopefully this research can contribute in other research as important data about the impact of Peer-Led Team Learning towards students’ conceptual understanding and leadership skills.

G. Organization Structure of Research Paper

In order to get the research paper systematically ranged, this research paper arranged based on the following organization structure as follow:

1. Chapter I: Introduction
   This chapter explained the background of this research, the aimed of research why does the researcher conduct this research, continued with the benefit of the research in the same field of the research.

2. Chapter II: Literature Review
   This chapter explains some literature review and theories which support the research. The explanation of this chapter include in Peer Led Team Learning, Conceptual Understanding and Cognitive, Leadership Skills and Global Warming.

3. Chapter III: Methodology
This chapter explains the research method, research procedures, the instruments that used how to process the data, and research plot.

4. Chapter IV: Result and Discussion
In this chapter, the research result are shown and followed by the discussion. It analyses the result and connect the result appropriate with some theories

5. Chapter V: Conclusion and Recommendation
Chapter V in this chapter is the last chapter that explained the conclusion based on the data and its analyses that has been processed in chapter IV. The suggestion is a necessary to minimize the difficulties yet obstacle to conduct further research.