# CHAPTER I
# INTRODUCTION

## 1.1 Background

The globalization era forces every single aspect of life should be changed based on the global needs. The consequences are changes the demands on how people work and life so it makes every country is forced to push their competitiveness against global competition in every aspects such as human resources, the technology, etc. The educational aspect also one of the aspects that is affected by this era, because to create human resources who have global competitiveness, or the developed technology, the country should create the developed educational aspect.

The problem that is common faced by the students in the middle school is the school is boring and that they are not able to understand or relate the materials that are delivered to them each day in class (King, 2009). Education has many proven developments in order to determine the result of education where all the teachers influence it by having a crucial role and bear far-reaching respondsibileitis (Lee and Lu, 2014). Education encounters, challenges in all aspects of social, economic and cultural life (Aloraini, 2012). By having those challenges, the 21$^{st}$ century science education forces the lessons is not only to apply stated curriculum, but also drives the students to be able to prove the truth of science lessons (Osborne, 2010).

The pedagogical view towards educations' quality does not require the physical inputs or its impacts. For the national scope, where in the result of PISA (Program in Students Assessment) 2015 stated that Indonesia ranked 62; it means Indonesia is in one of the 10 lowest ranks compared with 70 countries based on the performance of science, reading and mathematics. It means Indonesia has a poor quality of students' science concept and literacy. This condition makes many researchers have observed and conducted the research in order to improve PISA score. The utilization of the current curriculum, which is Curriculum 2013, is one of the examples. The curriculum that is designed by seeing the needs and the students' potential expects the students to be a center of the teaching learning processes and be more proactive in order to improve their sciences' concept and

literacy. The curriculum also forces the students to be accustomed to using a technology to enrich their knowledge guided by the teachers. However, the other problems come from the subject that is complicated to be learnt, and the culture of memorizing style. Hence, the students are so passive and forced to just listen to their teachers' explanations (Gamanik, Sanjaya, Rusyati, 2019).

In learning science, one of the most consideration and indicators of the success of the learning is Students 'concept mastery. Students' concept mastery is one of the most essential elements in learning science. Comprehending the concept is one the most crucial aspects in learning. Activities in learning cannot be excluded from concept mastery. Anderson (2001) stated that students' concept mastery relate to learnings' cognitive aspect. There are six cognitive domains as the classification of cognitive domain, remember, understand, apply, analyze, generate, and evaluate. Cognitive domain evaluate science concept mastery it leads to examine the effectiveness of different teaching style, then try to make the questions is not easy as what the learners overcome before, the result of learning requirements may be different with the evaluation requirements. (Halck and Dahl, 1999).

A level of cognitive process dimension is the capability in measuring the students' concept mastery which means constructing from various types of tasks whether written or graphics message operations such as interpreting, exemplifying, classifying, summarizing, inferring, comparing and explaining (Anderson and Krathwohl Taxonomy, 2001). The goals in guiding the students to have better skills, understanding and knowledge are mastery goals. These goals drives the learners to show their high skills relative to other while compared to performance and ability goals. In term of striving on one's skill, understanding newest skills, conducting something difficult to be done, and attempting to overcome teaching materials all of them describes the real definition of masterful goals orientation which stated by Mecce, Anderman and Anderman (2006).

In order to create a new habit, we must try to put any sense of life value since the earlier age so when they are getting older, they will be in common with that habit. The earlier age will have good memory to remember what they got when they are kids. The awareness itself might be come from within ourselves,

but sometimes come from external factors such where we live and what kind of society we belongs to. The value of awareness itself can be a good or even a bad.

Nowadays there are so many public information that can be accessed easily by everyone in the modern world like this. Those privilege can be a benefit to create new generation who are not only mastering the concept but creating new generation who have high sense of awareness towards their society is becoming more important than it used to be. Many open source self-improvement methods can be an inspiration to make better generations, because from one hold to another, it leads to greater impact to changes of new attitude of the society.

Rogayan (2019) reiterated that the earth is now suffering from innumerable afflictions at present caused by egregious human activities that relentlessly denuding the environment. The challenge for everybody is to take the wheel of action and move towards a common cause in preserving life on earth. Solution of current problems and prevention of new ones (Jain & Raghunathan as cited in Puri & Joshi, 2017). Environmental awareness is defined as an attitude and action that often strive to preserve the surrounding environment (Suyadi, 2013). In order to maintain and preserve the environment, every single person must have the environmental awareness. (Al Anwari, 2014). The awareness itself can be started by doing simple actions. Therefore, environmental awareness can be applied into learning in every subject of educational field. (Hamzah, 2013). Environmental awareness is an interdisciplinary topic from different fields, which attracts significant attention and concern. It is a means for people and social networks to build information, comprehension, beliefs, behaviors, talents, abilities and consciousness regarding the security of the community and the climate.

The environmental awareness that is being delivered through education is so importance since the education plays the most important role in creating good generations. When it can be applied well, the new generations will not only having a good score in term of their knowledge, but they can be led to have great score of attitude where in this research focuses on environmental awareness as the visualization of their application after learning several related subject.

One of the crucial subjects that can raise the students' environmental awareness up is the global warming topic. Global warming topic is learned by the

student's aims to open their eyes towards the biggest issue that globally face and try to solve. Human cannot evade the existence of global warming but its impact can be reduced. The global warming is come from all human activities, which release a various type of waste where most of them are gaseous waste product. Take it as a details global warming is all human activities such as deforestation, various agricultural and industrial activities, burning coal, oil and natural gas that affected to the increment of greenhouse gasses which directly proportional with the arterial increase in the temperature of the earth. (Gul, A et. al., 2009., GCRIO, 2011). Global warming also can be used in explaining the situation of the average of earths' temperature where gradually increase, a change will be permanently changes the earths' climate (Campbell & Reece, 2011). The incresment of global warming will make the extreme changes such as raising the sea levels, increased intensity of extreme weather phenomena. Not only are those changes, the other extreme changes which is affected by global warming agricultural output, loss of glaciers, and the extinction of various type of animals.

Because of the importance in balancing the students' knowledge and their attitude towards the society and environment, teacher should try the best way in term of teaching method and technique that they apply while in the teaching learning process both inside and outside the classroom. So, students concept mastery and environmental awarness are great combination the indication of the students' knowledge and their attitude since after learning and studying about global warming they will increase their awareness towards their environment. The teachers also should be one of role model to students. However, we cannot force the teachers in the school to work alone, because there are several factors influence the result that can be avoided. Those factors might be the biggest distractors to the result. Some of them are the school type, schools' curriculum and principles, family's' background, the society surrounds the students, media, and others.

This research aims to get it closer to the actual condition in the field. Therefore, this study concern in investigating the profile of students' concept mastery and environmental awareness.

## 1.2 Research Problem

The research problem of this study is " How is the profile of students' concept mastery and environmental awareness in learning global warming ? "

**1.3 Research Questions**

By elaborating the research problem, the research aims to explore these following questions:

1. How is the profile of students' concept mastery in learning global warming topic?
2. How is the profile of students' environmental awareness in learning global warming topic?
3. How is the correlation between students' concept mastery and their environmental awareness in learning global warming topic?

**1.4 Limitation of Problems**

In order to make this research become more focused and avoid a widening problem, the research is limited as follow:

1. Students' Concept Mastery

   In this research, the students' concept mastery refers to Bloom Taxonomy of cognitive level there are C1 (Remembering), C2 (Understanding), C3 (Applying), C4 (Analyze), C5 (Evaluate) and C6 (Create) (Anderson, 2012).
2. Students Environmental Awareness

   Students environmental awareness in this research aims to determine the students awareness and concerned about the environmental problem and able to associate it with the knowledge, attitudes, commitments, and skills to work individually or even collectively towards the current issue and prevent the new ones (Jain & Raghunathan as cited in Puri & Joshi, 2017).
3. This research used the concept of global warming. This topic is stated on the National Curriculum of Indonesia 2013 where was taught at VII Grade class and limited by basic competence 3.10, which has sub topic are the effect, cause, and solution of global warming.

## 1.5 Research Objectives

This research objective is specified as follows;

1. To investigate the profile of students' concept mastery in learning global warming topic
2. To investigate the profile of students' environmental awareness after learning global warming topic
3. To investigate the correlation between students' concept mastery and environmental awareness in learning global warming topic.

## 1.6 Research Benefit

The result of this research tends to have good input as follows:

1. For Teachers

   The expectation of this research is to become a reference and visualization in term of level of students' concept mastery and environmental awareness, which can be used in designing a new learning and teaching, style or develop a new instructional method that will be able to make the improvement for the students itself.

2. For Students

   This research finding and result describes to the students about their current condition in their concept mastery and environmental awareness. Hence, in order to gain better development quality of concept mastery and environmental awareness, the follow up of this research can be determined.

3. For Other Researchers

   This research gives the clear description about the current condition of students' concept mastery and environmental awareness and may be used to assist other researcher make comparable research problems on different science topic. This research is expected to inspire other researchers to make it better or find other result to enrich the teacher who have to a creativity ability in making new style of teaching for gaining better result of students.

## 1.7 Organization Structure of Research Paper

Chapter I: Introduction

In this chapter includes background, research problem, objective, and benefits

Chapter II : Literature review

In this chapter explains about the literature review about the theories, which was applied, on this research. The theories used in this research are the students' concept mastery, students' environmental awareness and the lesson of global warming topic.

Chapter III: Research Methodology

This chapter explains and describes the methods, which were used and applied in this research. This chapter explains in detail about the research method, design, research population, sample involved, and instruments of the research.

Chapter IV: Result and Discussion

This chapter focuses on the data gathered while this research was conducted, it describes detailed information on how this research analyses and process the finding data, which can be used to answer research, question of this research.

Chapter V: Conclusion and Recommendation

This chapter states the conclusion after the data gathered, processed, and analysed and it states the recommendation in order to give any suggestion to other researcher, teacher and student.