CHAPTER I
INTRODUCTION

1.1 Background

Environmental problems are the particular effect of human activities that have no social awareness and think only about the particular profit without concern about the impact on the environment and their future life (Hassan, Juahir, & Jamaludin, 2009). Extreme climate events are intensifying among a multitude of environmental issues. Storms, droughts and floods cause direct havoc, but they also have a widespread impact on food security, infectious disease transmission and financial stability, which have taken many years toll (Galvani, Bauch, Anand, Singer, & Levin, 2016). Therefore, it is important for individuals to be environmentally aware.

It is believed that an individual's perspective on the environment is shaped by the experiences that they gain during school-age (Altin, Tecer, Tecer, Altin, & Kahraman, 2014). Environmental awareness must therefore be promoted through environmental education. The executions can focus on a national environmental issue to catch the attention of learners or their attention can be drawn to more abstract global environmental issues (Simsekli, 2015). This could also lead into integrating it with students' critical thinking skill in problem solving. Critical thinking is an important topic in modern education and learning (Cheong & Cheung, 2008), and it is also one of the several 21st century skills (Lai & Viering, 2012).

But in reality, due to the dense science curriculum in Indonesia, the problems of restricted class time and huge class size have limited students' participation and efforts of thoughts in class. Consequently, the results of the class debate tend to end up being superficial, having little influence on students' environmental awarenss and critical thinking. As a consequence, teachers are facing problems in designing revolutionary pedagogical approaches with the goal to set youthful thoughts thinking and to encourage critical thinking (Cheong & Cheung, 2008).

Researchers have been investigating the use of social media networks in teaching and learning. Social media is also very popular among the students due to its easy access from smartphones. Smartphones are accessible to fully 95% teens and according to 45% of them, they are online almost all the time (Anderson & Jiang, 2018). This is a big opportunity to use online platforms, especially social media, in designing a revolutionary pedagogical approach for environmental education. Furthermore, another important factor will be the motivation of the students to the application of an online environment and the capability to display their own masterpieces (Duţă & Martínez-Rivera, 2015). Through the appropriate infrastructure and instruments, social media networks can be used as teaching instruments that will open students ' knowledge horizons in different areas (Kolokytha, Loutrouki, Valsamidis, & Florou, 2015).

There are many studies that investigated the use of different social media platforms from Facebook (Kolokytha et al., 2015), YouTube (Moghavvemi, Sulaiman, Jaafar, & Kasem, 2018) and factors that are involved in social media usage as learning tools (Ali, Yaacob, Endut, & Langove, 2016). However, there are very few studies - almost non-existent; that attempt to use one of the most popular social media networks, which is Instagram, especially in Indonesia. Since its launch in 2012, it has gained enormous popularity (Lee, Lee, Moon, & Sung, 2015). It is adverse that there are very little studies that use Instagram as a learning tool seeing the fact that Instagram reaches the younger generation and appeals to different societies more than other social networking services (Abbott, Donaghey, Hare, & Hopkins, 2013). As a consequence, using Instagram as a learning tool might be difficult for teachers, adding to the complex nature of new digital technologies.

The complex nature of new digital technologies makes the already difficult task of teaching with technology more complicated (Mishra, Koehler, & Kereluik, 2009). Fortunately, researchers have developed standards, frameworks, models, and theories to guide educators and researchers in their efforts to integrate technology into teaching and learning that can be used to inform research and practice (Hamilton, Rosenberg, & Akcaoglu, 2016). Puentedura's (2006) Substitution, Augmentation, Modification, and Redefinition (SAMR) model is a

recent approach to selecting, using, and evaluating technology. The SAMR model is intended to be a tool by which teachers' use of classroom technology can be described and categorized (Puentedura, 2006). The model encourages teachers to move from lower to higher levels of technology-based teaching, leading to higher (i.e., enhanced) levels of teaching and learning, according to Puentedura (Hamilton et al., 2016).

Based on the situation described in the above pharagraphs, the researcher saw the opportunity to study the use of Instagram as a learning tool to deliver environmental education in the 21st century education. Thus, the researcher decided to conduct this research entitled "Students' Critical Thinking Skill And Environmental Awareness in Learning Environmental Pollution Using Instagram-mediated SAMR Model".

1.2 Research Problem

Based on the background in the previous section, the research problem of this study is "How are students' critical thinking skill and environmental awareness in learning environmental pollution using Instagram-mediated SAMR model?"

1.3 Research Question

Based on the the research problem, the research aims to investigate the following questions:

2 How is students' critical thinking skill in learning environmental pollution using Instagram-mediated SAMR model?
3 How is students' environmental awareness in learning environmental pollution using Instagram-mediated SAMR model?
4 How is students' learning satisfaction in learning environmental pollution using Instagram-mediated SAMR model?

1.4 Research Objective

General objective of this study is to investigate students' critical thinking skill and environmental awareness in learning environmental pollution using Instagram-mediated SAMR model. The particular objectives of this study are:

1) To investigate students' critical thinking skill in learning environmental pollution using Instagram-mediated SAMR model.
2) To investigate students' environmental awareness in learning environmental pollution using Instagram-mediated SAMR model.
3) To investigate students' learning satisfaction in learning environmental pollution using Instagram-mediated SAMR model.

1.5 Limitation of Problem

To specify this reseach, the problems in this research are limited as following.

1) SAMR model in this research is implemented in 4 stages as stated by the model itself; substitution, augmentation, modification, redefinition. All levels of technology integration in the learning activity are mediated using Instagram.
2) Students' critical thinking skill in this research is according to the Foundation of Critical Thinking which uses the elements of critical thinking based on Inch, E. There are 8 (eight) elements of critical thinking that will be assessed, which are purpose, key question, problem, or issue, point of view, information, concepts, assumptions, interpretations and inferences, implications and consequences.
3) Students' environmental awareness in this study is their environmental awareness in daily activities measured by 26 (twenty-six) prompts according to Ai Hiramatsu, Kiyo Kurisu and Keisuke Hanaki. However, this research only used 23 (twenty-three) prompts which consist of 20 (twenty) negative prompts and 3 (three) positive prompts, adjusting to the condition in Indonesia.
4) The science topic in this research is enironmental pollution topic that is limited according to core competence number 3 (knowledge) and core competence number 4 (skills) based on 2013 national curriculum of Indonesia for junior high school.

1.6 Research Benefit

This research is expected to give benefits for:

1) Teachers

   This study will benefit educators by offering a fresh method for teaching and learning with technology.

2) Students

   This research is expected to give students a new learning experience through Instagram so they can use social media more effectively. This will also help students explore the environment around them in a more interesting way.

3) Researchers

   This study opens up a broad variety of possibilities for other scientists to evaluate the SAMR model more closely and apply it to other learners through other social networks.

1.7 The Organization of Research Paper

There are five chapters and several appendices in this research paper. There are subchapters in each section. The following is the systematic nature of this research paper:

1) Chapter I: Introduction

   This chapter outlines the background of this reseach in which the importance of constructing modern-day environmental education is discussed. The discussion leads to the research problem, research questions, and research objectives concerning the students' critical thinking skill and environmental awareness as well as their learning satisfaction. This section is the research's foundation. The whole debate was based on this chapter's research problem and issues.

2) Chapter II: Literature Review

   This chapter describes information about SAMR model, critical thinking skill, environmental awareness, environmental pollution topic, and other things related to the science issue under this study.

3) Chapter III: Methodology

   This section discusses the methodology used during the investigation. It concerns about non-experimental descriptive research which is the method

and design of this research. The population and sample of this research is discussed in this chapter regarding the location and the amount of sample. The research instruments used in this study consisting of Critical Thinking Grid, Environmental Awareness in Daily Life Questionnaire, and Learning Satisfaction Questionnaire are discussed in this chapter too. Data processing technique and research procedure that are used in Chapter IV to discuss the results are also discussed in this chapter.

4) Chapter IV: Result and Discussion

   Answering the research questions, this chapter discusses the findings regarding the students' critical thinking skill and environmental awareness as well as their learning satisfaction. The results are delivered in the form of descriptive explanations supperted by figures, tables, and graphs.

5) Chapter V: Conclusion and Recommendation

   This chapter explains the conclusion and the recommendation of the research based on the result and discussion regarding the students' critical thinking skill and environmental awareness as well as their learning satisfaction. Some recommendations based on the findings are discussed for further research which includes future prospects of Instagram as a learning tool, the application of SAMR model, critical thinking skill, and environmental awareness.