

# CHAPTER I

## INTRODUCTION

### A. Background

Media is one of the essential components in teaching and learning process besides models, methods, and approaches of teaching. As the tool to communicate learning contents, according to Hosler and Boomer (2011), teaching media should provide joy, fascination, and utility of science since those three things include to the need of delivering science. One of media for teaching is book, especially textbooks. Textbooks, as it is named, are expected to be able to help teaching and learning process for it has potential to take in three needs of learning science.

In fact, it seems that only textbooks that gain popularity to be teaching media. Textbooks have been widely used as primary media in science classroom. Because of its familiarity, it avoids students to search for more than textbook from their school. Meanwhile, there are more options out there such as articles, magazine, and comic, which offer fascination and joy of learning more than textbooks. To maintain those three needs, other alternative media that is able to be pleasant, fun, and comfortable in communicating the message should cover this (Zehr, 2014). Those media later may lead to maximize the probability of engagement with the science concept.

For the past 60 years, people have been familiar with teaching media in form of comic. Comic as learning material—formal or informal—has gained much easier access as technology develops. It is no strange thing that, despite its reputation as ‘child read’ with low scientific information, the development of comic for education has been more expanded ever since (Tatalovic, 2009).

Science comic is one of education comics and also one of the most popular in the market as well as classroom. Even there was a study in sci-fi and superhero comics about the science content that might be possible to learn science there (Locke, 2005; Zehr, 2014). Science, as fascinating as it is always, sometimes is brought so boring that students or children do not bother to learn it more. With comic that provides pictures and narration at the same frame, it is hoped that learning science is not only captivating but also entertaining and memorable. Science comic has been student's favorite media these days.

Nevertheless, not all science comic is certified as 'science' comic. Some of them only use science to support its fantasy theory like parallel universe and time machine, and some of them are created for public uses such as instruction (Upton & Hall, 2013). Especially in this country, local science comics—science comics made by Indonesians—are still produced in limited edition. It indirectly lets science comics from other country such as Japan, Korea, and America take the popularity. Some examples of science comic from other countries are *Newton and Copernicus* by Olson (2008) and *Optical Allusion* by Hosler and Boomer (2011). The problem in contextual examples and language may be barrier for Indonesian students to enjoy it.

This research is aimed to study the making of science comic, especially light topic for junior high school students in Indonesia, and its important aspects. The evaluation is done to check the appropriateness and user-friendliness after it is judged by media and science content expert.

## **B. Problem Identification**

From the background explained before, there are some problems identified regarding to science comic for junior high school students, such as:

1. The reading source in science teaching learning activity is mainly plain textbook, with less interesting and out-of-context illustrations.
2. Science comic as an alternative of science reading source is still lowly available in Indonesia, and if it is, the content is not always suitable and contextual with what Indonesian students learn.
3. The development of science comic in Indonesia is actually promising, but only few that survive to make it as media in science class.
4. Science comics available are often still ignoring aspects of good science and good comic, making it potential to be ill-considered.

Some limitations that scope this research are:

1. The participant of this study who will be analyzed is students of junior high school.
2. The kind of comics that will be implemented is science comics, which means the information infused to the comics is real and related to curriculum and instruction.
3. The science content that will be used in science comics for this study is physics, specifically lights in terms of properties, law of angle of incident and angle of reflection, and formation of optical image.

### **C. Research Problem**

Based on the background explained before, the main problem that arises from the condition is “How is the development of science comic on light topic for junior high school based on experts?”

From this research problem, there are several research questions that come up to be answered by the result of this study, as follow:

1. How should a science comic be made?

2. How are the artwork, content, language and uniqueness of the comic based on experts' and students' evaluation?
3. How are the comic ratings for each aspect that meets experts' criteria?

#### **D. Research Objectives**

This research is conducted with the objectives of to produce good quality comic, to analyze how science comic should be made, to investigate the artwork, content, language and uniqueness of the comic, and to determine the score of the comic regarding to aspects determined by experts.

#### **E. Research Significance**

The result of this research brings some advantages for readers and other related parties specifically in theory, policy and urgency, and social issue and actions.

The advantage of this research in theory is that the result will show the evidence of the existing science comic theories especially in three aspects; artwork, language, and content. In policy and urgency matter, it is hoped that the result will spread the awareness to people in educational field about providing better media for students to combat problems of learning science in 21<sup>st</sup> century. Another advantage that can be gained from this research result is in social issue and actions, that there will be more growing and developing science comic in Indonesia made by Indonesian for Indonesian students.

## **F. Organization Structure of Research Paper**

On chapter one, this paper tells about the background of the research, then problems identified from the background with its limitation. From problems, research problem and research questions are explained then continued with research objectives and benefit.

Chapter two tells about the development of science comic in light topic for junior high school, from comic theory with its characteristics, science comic, types of science comic, and its implementation; the comic making, until a preview of Light theory for junior high school including light properties, law of reflection, and optical formation.

On chapter three, methodology used in this research is elaborated. There are research method and research design, subject, operational definition, instrument, instrument analysis, data collecting, and data analysis. All of them determine how the research is conducted.

Chapter four is the place for result and analysis in this research. It includes content analysis, technical procedure of making comic, data analysis come from evaluation of subjects, and discussion to discuss data analysis with literature.

The last chapter is conclusion and suggestion. It answers research problem and questions on the first chapter and conclude the result gained from this research. It also explains about suggestions that may be beneficial for next or further research in the same field as this one.