Chapter 1

Introduction

1.1   Background

The more developed of the era and the human mindset, the more developed science and technology. Science and technology were born and developed from human complex thoughts. Therefore, the human mindset greatly affects the progress of science and technology.

Drugs are one of the examples that resulted from human complex thought. Drugs are usually known as medicine that is given by the doctor when someone is sick, but as the era develops, many individuals got stressed and burdened by lots of problems, with the escape thought that might linger in their minds, new drugs are born. Generally, drugs are any substances that are taken into the human body that has a function to modify or affects the chemical reactions in the body.

Drugs itself it's not dangerous if it used in the right amount that the body needs. But nowadays, there are many modifications in the use of drugs itself. Drugs are usually used by humans and animals (S.E. Jorgensen, 2000). Each drug has its own function, whether it's used as a painkiller or a treatment. The often-used type is cough medicine, the cough medicine gives a high and sleepy feeling even when used with the doctor's recipe. When individuals drink too many drugs outside written by the doctor, it will cause a high feeling. The high feeling is what the drug user looking for. Drugs give a pleased euphoria when dopamine is released, drinking the drugs it will block the receptor to absorb the dopamine back. This is a simple drug that can be found in any drugstore.

Parents and doctors often initially miss the misuse of these drugs due to shared misunderstandings about their potential for causing harm(Levine, 2007). In Indonesia, the analysis of national examination results shows that students have a lack of understanding of drug materials in junior high school (JHS). The lack of understanding can plunge students into psychotropic drugs that are harmful to their health (Ayu Kartina, 2019). As what happens in the US specifically in Fresno, where there are a lot of teenagers who fall into psychotropic drugs simply just because they want temporary happiness and not considering the danger and the after effect in the future, which can actually kill themselves or even someone else. One

of the psychotropic drugs used is fentanyl-type anesthetic which is made in tablet form. Also, there are a lot of death cases caused by the drugs like methamphetamine, doxylamine, and alcohol that consume by the teenager with the youngest age at 18 years old (Mims, 2022). As previously described, there are a lot of reasons why addictive substances or drugs are very important to be taught especially to students in their teenage years.

As technology becomes more and more developed these days, it also greatly affects the progress of education. Many new ways of teaching and studying were created. A lot of teachers develop either a program or teaching technique to help students in studying. Not only developed countries are trying to advance their education, but also many developing countries are competing to improve the quality of their education. One of them is Indonesia. Right now, Indonesia is trying to develop the quality of its education by creating a lot of national programs and different kinds of curriculum. However, the quality of education will not improve only by making lots of programs and creating a new curriculum because if the school, teacher, and student are not ready to be implied with the new program, the program will be useless. In the learning process, not only students and teachers play a role but there are also other components that are as important as the involvement of teachers and students, namely the objectives of the learning, the methods used, the materials provided, learning tools such as the media used, and evaluation. (Riyana & Pd, n.d.) .

When Indonesia wants to advance its education sector, of course there are some problems that must be faced. Indonesia is currently one of the countries that has a low quality of education. There are several factors that make Indonesia a little behind, especially in the education sector, like the lack of funds available for education, the quality of education is still poor, this happens because of the lack of expertise of a teacher in delivering material to students, the high cost of education in Indonesia which makes many people ended up not going to school, lack of teaching materials so that teachers have limitations in providing materials, there are no adequate facilities, and minorities for groups of people with disabilities in getting education (Madhakomala et al., 2022).

In Indonesia, most schools still use conventional media as a learning media such as blackboards, learning books and others. However, since the pandemic, many teachers have started using website as a learning medium. But sometimes the use of media is not very effective in learning because not all studying websites have an interactive appearance especially for students. As the result of the development in technology, there is also a development in teaching media which is a visual media. Visual media is a teaching aids that used in learning process that can be enjoyed through the five senses. Visual media either an images or parables, play an important role in the learning process. Visual media can help to improve the understanding and help to strengthen the student memories. Visual can also foster student interest and provide a relationship between the content of the subject and the real phenomena in the environment (Sholihah Mar'atus et al., 2019).

A comic is an example of the development of visual media that can be use in teaching learning process. There is a comic which can be called an educational comic. Educational comics are a subset of comics whose purpose is not to storytelling, or entertainment but the transfer of information or communication concepts. Reading a comic requires not only the text but also interpretation an image as the reader must negotiate two systems of codes which sometimes function independently, and at other times interact (McNicol, 2017). Some researchers have strongly argued against the use of comic as an educational media, but nowadays many teachers, librarians, and educational researchers design learning activities in efforts to take advantage of comics' educational strengths. In 1992, stated by Sturm (2002) after Art Spiegelman's comic book *Maus* won a Pulitzer Prize in Nazi Holocaust, educational comic become more and more popular. The example happens in 2001 at University of Minnesota physics professor James Kakalios, in his introduction of physics course "Everything I Needed to Know About Physics I Learned from Reading Comic Books", gave an example of basic principles of physics, chemistry, and biology using a concepts and characters from the comic books (Vassilikopoulou et al., 2011).

Studying sciences with only using text book will not be imprinted in student memories. So, using a media can help teacher to improve student understanding. Other than media that used, there are an additional factor as gender and prior

knowledge. As in some studies reported that female experience greater learning benefits from animated resources, while some other studies stated that animated resources are more beneficial for males (Heo & Toomey, 2020).

Therefore, the purpose of this study is to analyze the Development of Digital Comic as a Learning Media to Facilitate Students' Understanding and Awareness about Drugs.

1.2 Research Problem

The problem of this research from what happen in the environment surrounding and those previously described is "How is the development of the digital comic as a learning media can facilitate student understanding and awareness in studying drugs topic?".

1.3 Operational Definition

To avoid misunderstandings about this study, this study provides about operational definitions. These terms are explained as follows:

1.3.1 Characteristic of each stage of the comic

Reading a comic requires not only the text but also the interpretation of an image as the reader must negotiate two systems of codes which sometimes function independently, and at other times interact (McNicol, 2017). In this research there are 5 stages involve in developing the comic, to creates a good quality of a comic that has an interpretation of the text of the materials. The ADDIE model is a model that use to developing the comic which consists of 5 stages that are analysis stages, design stages, development stages, implementation stages, and evaluation stages. Analysis stages is a stage that focusing on analyzing things before developing the instruments. Design stages is a stage that focusing on designing the instrument includes making a storyline and a flowchart. Development stages is a stage that the researcher start to make the instrument, and in here the instrument is a digital comic. Implementation stages is a stage that focusing on spreading the rubric to the experts to judge and to students to get the responses, and using it to develop the instrument. The last stage is a stage of evaluation that focusing on using the collected judgments from the experts and responses from the students to improve the quality of the comic.

1.3.2 Expert Judgement by Lecturer

Boehm defines expert judgment as somewhat an ambiguous manner of seeking input or suggestions from one or multiple experts. Also, can be defined as where advice or guidance given from experience personnel is sought (Hughes, 1996). Expert judgment in this research is done by spreading a rubric in a questionnaire form that has a 5-range score with 1 being the lowest score and 5 being the highest score. The expert judgment from the lecturer is a rubric developed by the researcher that consisted of 1 to 5 score. The data obtained from the expert (lecturer) judgment will have proceeded using an index Aiken validity.

1.3.3 Expert Judgment by Teacher

The teacher in this research was included as an expert. The teacher is also experienced personnel from the specific field that can give advice and guidance (Hughes, 1996). Here, the teacher has the same questionnaire as the lecturer questionnaire. The expert judgment from the teacher is a rubric developed by the researcher that consisted of 1 to 5 score. The data obtained from the teacher questionnaire will also be proceeded by using an index Aiken validity.

1.3.4 Students Responses

Student responses in this research are a judgment towards the comic. Students' judgment will be used as a further recommendation for the next research that will take the same field. Students' judgment is in the form of questionnaires that contain 5 options as the answer. The five-range score of the option has 1 as the lowest score means strongly disagreeing with the specific statement given, and 5 as the highest score means strongly agree with the specific statement given. The 5 scale is a Likert scale that is a psychometric response scale commonly used in a survey to obtain participants' preferences or extent of agreement with the specific statement given. Likert scales represent a form of non-comparative scaling method and possess a unidimensional quality (only assessing one characteristic). Responses to the participant are prompted to express the participants' agreement with the given statements (Bertram, 2007). Students' responses using a questionnaire form is used to measure students responses in students understanding and students' awareness. Students' understanding based on the National Examination analysis, lots of students struggles with additive and addictive substances materials (Ayu Kartina,

2019). From what *Kamus Besar Bahasa Indonesia* stated, understanding has a meaning of having a perception of some concept deeper. While a student is defined as a trainee or a learner who finds knowledge. Student's understanding can be defined as a learner or trainee who has a deep thought or perception of a specific concept. Students understanding are measured using a questionnaire filled with 20 statements.

Students' awareness in this research is aimed at the feeling of awareness after knowing the facts. Students' awareness in this research is in line with the definition of self-awareness. Self-awareness is divided into two types, the first one is internal self-awareness which represents to which individual perceives their own values, interest, ambitions, compatibility with their surroundings, responses (including thoughts, emotions, actions, strengths, and limitations), and influence on others. The second one is external self-awareness which is the opposite of internal self-awareness. Internal self-awareness focuses on the individual values themselves, while external self-awareness is focusing on understanding how people's point of view toward that individual in the same criteria as internal self-awareness (Eurich, 2018). From Duval & Wicklund (1972) in Morin (2011)that self-awareness represents the ability to shift one's focus onto oneself. Which means a condition where an individual consciously recognizes, analyzes, and retains self-related information. An individual start to become aware through the contemplation of the process of observing and dealing with stimuli. It represents a multifaceted and intricate phenomenon involving different facets of the self and the associated aspects. The self-awareness here reverse to the students, when a student has the feeling of awareness, it helps them to remember the situation and the consequences of something (Andriyani, 2016). Through the media, the teachers should know which media could be used as the best option to help students improve their sense of awareness (O'brien, 1989). Students awareness in this research are measured using a questionnaire filled with 20 statements.

1.4 Research Question

1. What is the characteristic of each stage in the development of comic that can facilitate students' understanding and awareness?
2. How is the judgment from the Lectures and Teachers towards the developed

comic for drugs topic?

3. How do the students' response to the developed comic about drugs?

1.5 Research Objectives

1. To Describe the characteristics of the development stages of the comic that can facilitate students' understanding and awareness.

2. To Have judgement from the expert that consist of teacher and lecturer, whether the comic can facilitate students' understanding and awareness.

3. To Have responses from the students towards the comic.

1.6 Limitation of Problem

In order to make the research focused, this research concentrated on the following limitation of the problem:

1. The comic is designed to include the drugs topic that are essential for the students to study such as the type of drugs, the dangers of drugs, diseases that are caused by drugs.

2. The topic of Drugs is taken from the IGCSE book and Addictive Substances from the Indonesian Curriculum book.

1.7 Research Benefit

1. For teacher

This research can be useful and helpful for understanding visual media and one of them is educational comics. The implementation of the educational comic can be one of the things that help teachers to teach using new media to improve the students' understanding.

2. For student

This research can give information about improving the understanding of a specific material using comics as a studying medium.

3. For another researcher

This research can be used as a reference for other research that relates to this topic.

1.8 Organization of Research Paper

Research Organization in this research shows the research step with the definition and description that defined in each chapter. Each chapter consists of

explanation below:

1. Chapter I: Introduction

   The first chapter is the introduction which in this chapter several points explained such as the background of this research, the research problem and the question, the limitation of the research, the objective of the research, the research benefit, and the organization of this research.

2. Chapter II: Literature Review

   The second chapter is the literature review, this chapter contains the theory of the research variable. It begins with an explanation of media visuals, media education, comics, digital comic, etc.

3. Chapter III: Methodology

   The third chapter is about research methodology where this chapter consists of the research method and design, population and sampling, operational definition, hypothesis and assumption, research instrument, data analysis, and the procedure of this research.

4. Chapter IV: Result and Discussion

   This chapter will explain the results of the research and the discussion phase which consist of 5 phases, which is Analysis phase, Design phase, Development phase, Implementation phase, and Evaluation phase.

5. Chapter V: Conclusion, implication, and suggestion.

In this chapter, there are a conclusion and the implication of the research. There's also a suggestion for the future researcher which is on the same field of the research.