

CHAPTER I

INTRODUCTION

1.1 Background of The Problem

Technology and information are developing very rapidly. With varying degrees of cultivation, the advancement of technology influences the creation of learning media utilized today. Today's learning is made possible by information and technology. In addition to pre-existing media like teachers, textbooks, and blackboards, learning technology also takes the form of media that can help to facilitate human activities, particularly in the field of education. Learning media has evolved and developed alongside the beginning of the communication revolution (Yaumi, 2018).

Learning media is an instrument that can encourage pupils to reflect and work through educational challenges. Media can be used as a learning tool to make it easier for students to understand the concepts being taught. The use of media is also expected to provide an interesting and memorable experience for students (Jarmita et al., 2020). The benefits of learning media are very large for the education of students, considering that the presence of media will help the teacher's shortcomings in terms of delivering lessons. Thus, learning media is expected to make a maximum contribution to the learning process (Fransiska, 2022).

However, the fact that occurs in the world of education so far, there is still a lack of utilization of digital technology as a learning medium, learning is still dominated by cognitive aspects only. To overcome this, a teacher as an educational practitioner must utilize learning media, especially technology-based learning media. The delivery of material by teachers to students will be more effective and efficient if assisted by using technological media. The role of technology-based learning media can motivate students to be active in the learning process and attract student interest in learning and the teaching and learning process can run well so that learning objectives can be accomplished.

In the digital era, utilizing technology has become a common thing that has a big influence on students' learning habits. New challenges in learning require us to maximize the use of technology-based learning media. Teachers must have the ability to provide media appropriately, otherwise students will tend to get bored more quickly if the media chosen does not have newness value. Alwi (2017) states that employing technology-based learning resources is an effective way to teach material and to pique students' curiosity, feelings, and readiness to learn. Through learning media, students can learn independently, but teachers must still be present to help and mentor them throughout the process (Supriadi et al., 2017). Teacher creativity is needed in making the learning media used, so that students are more motivated to learn. A teacher must have skills in choosing and using learning media. Likewise, the learning media used must be fun and must make students more active in the learning process. Effective learning media can make students become more active, critical, and independent in the learning process to avoid boring learning.

Learning media is needed by students to support the material that will be covered in the learning process. Learning media that are often used in schools are textbooks, and student worksheet. This learning media cannot always be used by students, it is less practical and cannot be carried anywhere. Some of the learning media above also have disadvantages such as being uninteresting and monotonous, cannot be used in a dark place, requires initial concepts, requires sharp memory, is boring, and is abstract and conceptualizing.

It takes work to produce engaging and meaningful learning, namely by learning materials that reduce verbalism the practice of teaching students primarily through the use of words. To boost student interest in learning and support the achievement of learning objectives, learning materials that feature visual imagery, such as pictures, flashcards, comics, frame films, charts, posters, maps, etc., are required (Astatin, 2016). One of the key elements that supports the learning process is learning media. The creation and use of learning media are significantly impacted by advances in science, technology, and information. These developments influence the numerous options available to educators for incorporating a variety of media into the classroom (Sumiharsono and Hasanah, 2017).

Comics are one of the visual media that convey information in printed form. With technological advances, the form of comics is increasingly modern in digital form so that it can be read without being limited by time and place with a smart phone. Comic media that contains text, images and scenes can design students' imaginations to redescribe events in their own minds and can reach the highest level of learning, namely independent learning. According to (Rosida & Hastuti, 2020) that comics in the form of serialized images are unique as learning media by presenting events chronologically. Comic media can be made according to the content of the learning material that will be used in the learning context (Rosyida, 2019).

Comic media as learning media is able to compete with conventional media that has existed before such as book media, or even power point media. Comic media has advantages in its design in the form of a collection of serialized or serialized images equipped with words to strengthen the context and content of the story in it (Laksana, 2015). In the current era of technological advances, there are variants of new types of comics besides comic strips and comic books, namely digital comics. Digital comics have their own advantages because they can be accessed without being limited by time and place by students. Comic media can continue to be developed in shape and design in line with the needs of learning and students so that the material to be mastered can be easily conveyed. The content in comics can also be adjusted to the material and discussion of a particular material in the learning that will be presented (Fujiastuti et al., 2019).

Learning media in the form of comics was chosen to help teachers overcome biology learning problems. In addition to attracting the attention of students, motivating, comic media is expected to generate problem solving skills and creative thinking. Learning media in the form of biology comics are also able to increase students' interest in learning, especially biology subjects, so that students get the maximum benefits both from the process and learning outcomes (Puspawati and Ekayanti, 2023). Comic media can help students who have difficulty visualizing biology learning material easily and can remember the material longer (Kamil et al., 2020).

Observations were made by interviewing one of the biology teachers at SMA Negeri 7 Medan, namely Ellen Sihombing. In the teaching and learning process, the teacher lack of use digital technology as learning media, the teacher has used digital-based learning media but only google classroom, and not used on all materials. The material presented by the teacher is only based on textbooks and does not use learning media that displays many illustrations to support environmental change material. Biology teachers in these schools only use Biology printed books and LKS. Teachers have conducted Biology learning by linking in everyday life (contextual), but the learning process has not been very interesting for students, due to the lack of visualization of concepts related to the subject matter, so that in the learning process students are more often passive and less enthusiastic in following it. According to the teacher through interviews, one of the obstacles experienced in teaching biology lessons is that students cannot directly describe the material being taught so students need learning media that uses pictures or videos.

Environmental change material is one of the subjects that is less interesting and difficult for students to understand. One of the subjects in biology material in tenth grade is the environment with one of the sub subjects, namely environmental changes, this material is classified as complex and broad. In addition, the material presented by the teacher is only based on textbooks and does not use learning media that displays many illustrations to support information about environmental changes. Learning media used by teachers cannot be described directly. The depiction of complex, abstract, extensive and memorized material is also an obstacle in teaching, and teachers do not have learning media that can be carried everywhere (practical). The teacher only provides information about the subject matter using printed books and explained by lecturing, so this affects the learning outcomes which are quite low because students seem to only listen to the learning process and tend not to actively ask questions. Based on these conditions, learning media is needed that can support students' interest in learning environmental change material so that student learning outcomes can be better or higher. Information from teachers and students of SMA N 7 Medan, no one has ever developed digital or printed comic media before, either teachers or researchers.

Based on the background and observations that researchers have carried out, researchers need to conduct research on "**Development of Digital Comic Based on Environmental Change Material in Class X of SMA Negeri 7 Medan Academic Year 2023/2024**". Researchers need to develop learning media that is attractive to students by combining visual and digital elements through comic media. Comics were chosen because they have a simple nature in their presentation and have a story sequence element that contains a large message but is packaged in a concise and easy to understand manner. Comics as digital learning media feel very close to students who are familiar with technological developments.

1.2 Problem Identification

Based on the background above, the identification of the problem in this study is as follows:

1. Lack of use of digital technology as one of the learning media.
2. Teachers lack of visualizing concepts related to learning materials.
3. Students find it difficult to understand and are less interested in learning about environmental change material because the material is only obtained from textbooks and explanations from teachers.
4. Student learning outcomes on environmental change material are still low.

1.3 Scope of The Research

The scope of development is needed in conducting research to make it easier for researchers to focus on research. The scope of this research is as follows:

1. Digital comic-based learning media focuses on environmental change material.
2. This digital comic-based learning media is shown for tenth grade students of SMA Negeri 7 Medan.
3. The ADDIE development model is the development model used in the development of this digital comic-based learning media.

1.4 Scope of The Problem

Based on the identification of the problem above, the limitations of the problem in this study are as follows:

1. Digital comic-based products is developpe with the ADDIE development model which includes analysis, design, development, implementation, and evaluation.
2. The learning media to be developed is digital-based comic media.
3. The development of this learning media focuses on environmental change material.

1.5 Formulation of The Problem

Based on the identification of the problem and the limitations of the problem stated above, the formulation of the problem is as follows:

1. How is the feasibility of digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024 according to validation of materials expert?
2. How is the feasibility of digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024 according to validation of education expert?
3. How is the feasibility of digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024 according to validation of media expert?
4. How is the feasibility of digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024 according to the teacher assessment?
5. How do students respond to digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024?
6. How are student learning achievement based on learning outcomes after using digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024?

1.6 Research Objectives

Based on the formulation of the problem above, the objectives of this study are as follow:

1. To determine the feasibility of digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024 according to validation of material expert.
2. To determine the feasibility of digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024 according to validation of education expert.
3. To determine the feasibility of digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024 according to validation of media expert.
4. To determine the feasibility of digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024 according to teacher assessment.
5. To determine the feasibility of digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024 according to student responses.
6. To determine the learning indicator achievement based on student learning outcomes after using digital comic-based on environmental change material in tenth grade at SMAN 7 Medan academic year 2023/2024.

1.7 Benefits of Research

The results of this study are expected to provide benefits to all parties who take advantage of the results of this research, namely:

1. For educators, this research can be a reference in improving the quality of learning by presenting material in an interesting and interactive way through technology-based learning media.

2. For students, this media development can be utilized as a material to improve students' understanding of environmental change material. With a more visual and interesting approach, it is expected that students can more easily understand complex concepts.
3. For schools, as input material in providing innovative solutions in the use of technology to determine effective learning media to provide new insights for schools to improve the quality of education.
4. For researchers, adding skills in designing, developing, and implementing learning media properly and correctly.

