

CHAPTER I

INTRODUCTION

Indonesia is in the midst of the Industrial Revolution 4.0 era, a new civilization in the industrial sector which certainly brings many changes in various fields. This of course has an impact on people's lives, where the Industrial Revolution era will result in changes in various fields of human activity and lead to the formation of reforms in the way of thinking, relationships with others, to change the way people live. The industrial revolution itself has brought various significant changes in various aspects of life, including in the field of education. (Prasetyo & Trisyanti, 2018). Education must be able to provide a modern learning process that is in line with the pace of development of the times. One way to internalize modernity in education is to take advantage of technological developments in the learning process, for example by using technology-based learning media. (Lestari 2018).

The developments brought about by the Industrial Revolution also offer various educational solutions. There are so many alternatives for utilizing technology as a learning medium, especially in science subjects. One example of technology that is so close to the lives of students is social media. According to data from the Statista report reported on the BPS (Central Bureau of Statistics) website, which was written by W. Tri Sutarsih in 2019 as many as 48.2% of children aged 7-17 years have accessed the internet. Of this figure, as much as 75.8% of internet access by children of this age is done to access social media. This activity of accessing social media is the highest activity carried out when using the internet. This figure shows the great potential of social media as a learning medium that is close and suitable for students aged 13-18 years.

International Telecommunication (ITU) provides data that internet users in the world from 2005-2019 continue to increase. From 2005 to 2019 internet users reached 1.1 billion, which increased by 4 billion users, this number is expected to continue to grow every year (Sasmita, 2020). Internet users in Indonesia increased even more in 2020, reaching the second quarter, internet

users reached 196.7 million or 73.37% of the population. Based on the results of Wearesocial Hootsuite research, in January 2019 social media users in Indonesia reached 150 million or 56% of the total population. Social media gadget users reached 130 million or around 48% of the population (Agung et al, 2020).

Unfortunately, this technology, which is very close to the lives of students, has not been optimized for use in the science learning process by teachers. Instead, the technology utilized as learning media tends to revolve around the same media (Allyah et al, 2021). This statement is reinforced by the results of observations at SMP Negeri 37 Medan and interviews with one of the science teachers at the same school. Through interviews conducted with science teachers, it is known that the media that are often used in science learning are only Power Point and LKPD. In fact, based on observations made, it is known that infrastructure facilities that are very supportive for the use of social media in education, such as wifi and smartphones, have been owned by students, teachers and also provided by schools. In addition, students have also been accustomed to using one of the social platforms, Instagram, during their activities at school.

The use of technology in the science learning process increases the level of enthusiasm and understanding of students of the material provided. Based on the results of these interviews, it can be said that science learning needs to use learning technology so that the learning process does not run monotonously and the level of understanding of students increases, so that the learning outcomes experienced by students also increase. Based on the observation, it is known that social media is a technology that is very often accessed by students, so it has great potential to be utilized in learning.

According to Mulyari's research in Anisa and Ernawati (2020), various services offered by social media can facilitate the process of searching for information. Therefore, social media can be utilized as one of the media for learning. The wise use of social media in the learning process will facilitate

access to unlimited information, data, and various learning issues. These advantages certainly make social media more potential to be used as a medium for learning. One of the social media services that is widely accessed by the public, especially at the age of learners, is Instagram (Sukariasih et al, 2020). Instagram is an application for sharing photos and videos online. This visual-based social service is very suitable for use as a science learning media that requires a lot of visualization of material (Mufidah, 2021).

Science is one of the subjects that contains many abstract concepts. Science material in junior high school, especially in human excretory system material is abstract, so it requires a tool that can help the learning process, this tool is called media (Sukariasih, 2020). Learners need visualization in understanding material that cannot be seen, for example, the excretion organs include the kidneys, liver, skin and lungs (Indriana, 2017) Therefore, in the science learning process, tools are needed that can visualize abstract concepts and mechanisms that cannot be seen directly by students.

As one of the social media, Instagram has the advantage of allowing students to carry out the learning process more flexibly, because this application can be accessed anytime, anywhere, and by anyone without being limited by space and time. (Allyah et al, 2021). In addition, Instagram is also equipped with various interesting features such as stories, highlights, Instagram live, polls, ask a question, reels, etc. These various features and advantages can be utilized by students and teachers. These various features and advantages can be utilized by teachers in organizing learning in a more interesting way (Saputra, 2021) However, this application is still rarely used by teachers in the science learning process at school. This statement is evidenced by the results of interviews with science teachers at SMP Negeri 37 Medan, who stated that the use of social media in science learning is still rarely done. In fact, this social media service has various advantages that make it suitable for use in learning.

Some previous research results reveal that the learning process using social media, especially Instagram, shows positive results. According to the research results of Maria (2020) revealed that Instagram-assisted learning media can be used as an alternative to learning because it is flexible and can be accessed anytime and anywhere, and stated that the Instagram application itself can improve student learning outcomes. The learning outcomes of students obtained in the experimental class using the Instagram application were higher than those of the control class. In the experimental class gain test is 0.73 while the control class is 0.61. which states that digital multimedia if used in education can improve students' cognitive learning outcomes.

Based on the description above, the researcher is interested in conducting research with the title "**Development of Instagram-Based Learning Media as an Alternative Science Learning Resource to Improve Student Outcomes in VIII Grades Junior High School**" on the material of the Human Excretory System Class VIII Junior High School. The product of this development is expected to be used as an alternative learning resource, so that the role of books as the main learning resource is not eliminated from learning. Development is carried out by utilizing most of the features available on the Instagram platform, including stories, highlights, polls, ask a question, reels, and feeds, so that the potential of this media can be utilized optimally. The theme of the Human Excretory System was taken because this theme is one of the concepts that contains abstract material, so it requires visual-based learning media to help students understand it. This is in accordance with the statement given by Susilawati, S. (2019) that many students have difficulty explaining the function of organs in the human excretory system. This difficulty is experienced by students because the excretory system contains various physiological mechanisms that are abstract and cannot be directly sensed.

1.2 Problem Identification

Based on the above background, the following problems can be identified:

- 1) The learning media used by teachers in learning science tends to be monotonous, so there is a need for alternative media to support learning.
- 2) The potential of Instagram as one of the social media that has a high level of use among students is still not optimized by teachers.
- 3) Educators still use conventional teaching materials in the form of printed books that are used as a source of student learning.
- 4) have difficulty understanding the concept of the human excretory system

1.3 Scope of Study

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

- 1) Video-based learning media focused on human excretory system material
- 2) This image-based learning media is shown for class VIII students
- 3) The development model used in the development of this learning media is the Addie model.

1.4 Problem Limitation

Based on the identification of problems that have been stated, the limitations of this research problem are limited to:

- 1) The research method used is the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) development research method.
- 2) The aspect of learning outcomes used is limited only to the cognitive aspects of students.
- 3) The evaluation stage of the effectiveness of Instagram-based social media can only be seen from the N-gain results obtained.

1.5 Problem Formulation

The problem formulation of this research is as follows:

- 1) How is the feasibility of Instagram-based social media as an alternative science learning resource based on material experts?
- 2) How is the feasibility of Instagram-based social media as an alternative science learning resource based on media experts?
- 3) How is the feasibility of Instagram-based social media as an alternative science learning resource based on linguists?
- 4) How is the practicality of Instagram-based social media as an alternative science learning resource based on teacher responses?
- 5) How is the practicality of Instagram-based social media as an alternative science learning resource in the application of student responses?

1.6 Research Objectives

- 1) Knowing the feasibility of Instagram-based social media as an alternative science learning resource based on material experts.
- 2) Knowing the feasibility of Instagram-based social media as an alternative science learning resource based on media experts.
- 3) Knowing the feasibility of Instagram-based social media as an alternative science learning resource based on linguists.
- 4) Knowing the practicality of Instagram-based social media as an alternative science learning resource based on teacher responses.
- 5) Knowing the practicality of Instagram-based social media as an alternative science learning resource in the application of student responses.
- 6) Knowing the effectiveness of Instagram-based social media material as an alternative science learning resource on the material of the human excretory system to improve student learning outcomes.

1.7 Research Benefits

a. Theoretical Contribution:

The results of this study are expected to improve the learning outcomes of students in learning by using Instagram-based social media in science subjectson the material of the excretory system.

b. Practical Contribution:

1. For Students:

a. Train the ability to conduct research and train the ability to make Integrated Science learning media that is suitable for use.

2. For Teachers:

a. Can develop Instagram social media as an independent learning resource for students.

b. Can utilize the media that has been developed to the on-going learning.

3. For Schools:

a. Can add references to student learning resources at school.

b. Can help the learning process in the classroom so that students can understand the material of the Human Excretory System through interesting medi