

# CHAPTER I

## INTRODUCTION

### 1.1 Background

Due to the COVID-19 pandemic, many schools and colleges are closed. According to UNESCO data, nearly 160 countries have implemented national closures, affecting more than half of the world's student population (Abidah et al., 2020). With the restrictions on interaction, the Indonesian Ministry of Education also issued a policy, which is by closing schools. so that during the outbreak, the majority of students go to school by distance learning. Technology is used to deliver all subjects to students. Educators are required to explore and apply various theories, approaches, and principles of learning design to create an innovative learning environment for their students (Bhavya et al., 2021). In line with the rapid development of science and technology in the early 21st century which demands an increase in the quality of superior human resources. The learning model uses media such as smartphones, desktop PCs, laptops, or other devices connected to the internet. Smartphones, on the other hand, are preferred by consumers over other devices because they are easier to carry and offer lower prices than others (Sahlström et al., 2019). Besides that educators should investigate and evaluate how online classes should be structured and organized while keeping in mind students' perspectives and teachers should be an essential component in developing online teaching techniques and learning (Deepika, 2020). Therefore, educators need to reflect on their teaching practices and apply and develop the latest learning models. Also, when creating assessment instruments, educators should consider applicable assessment principles such as assessment, Bloom's taxonomy, and higher-order thinking skills (HOTS).

Educators are directly or indirectly required to follow these developments by innovating and being creative in modifying learning. However, in reality on the online learning system, there are certain challenges faced. When doing online learning activities at home, students still lack the desire and encouragement to take

the initiative to learn on their own (Godwin, 2012). Only during virtual face-to-face courses with teachers, students tend to learn . As a result, learning activities are only limited to obtaining teacher material at a predetermined hour. This may have an impact on student understanding. Although this is not always the case, the online teaching and learning process often does not allow interactive learning. Many students are confused with material and even though it is difficult to approach the teacher. This is sometimes caused by teachers who only deliver material in one direction and do not allow students to ask questions. In addition, in some cases, teachers do not hold video conferences and instead provide written materials and video explanations to students. Therefore, the problems surrounding distance learning during the Covid-19 pandemic must be addressed immediately so that learning outcomes can be maximized and significantly impact student behavior (Churiyah et al., 2020).

The low level of understanding and student learning outcomes is one of the reasons for the need for updates in learning strategies and methods of delivering material (transfer of knowledge) to students (Huryah et al., 2017). One of the factors that determine the quality of educational outcomes is the approach used by teachers in the learning process. The accuracy in using the learning approach taken by the teacher not only arouses students' motivation, interest and learning achievement but also increases students' understanding of the material provided by the teacher. This situation, of course, makes it difficult for students to understand and ask questions about specific materials. As a result, the teaching and learning process for students becomes ineffective.

Although circumstances and conditions may not be ideal, learning activities can be carried out anywhere. Especially now, with so many technological tools available to support these activities, everyone can do various things anytime and from any location. Moreover, the use of teaching aids in schools and other educational institutions has been influenced by science and technology (Rusli et al., 2020). These tools have been used as teaching aids in schools that are already established and capable, so the learning becomes more effective and efficient.

Apparently, behind the problems and complaints, many lessons can be learned in Indonesia. In this case, students and teachers will be better prepared to interact with new technologies so that online learning can be improved (Putri et al., 2020). In this era of increasingly sophisticated technological disruption, students and teachers are expected to be equally skilled in learning technology. There are various kinds of skills of students and instructors in using learning technology. A good lesson is a lesson that the learner has learned, and the multimedia material presented is a method of obtaining answers to the questions posed. It is essential to enhance enjoyment, creativity, willingness, and motivation in the learning process by utilizing digital media (Zheng et al., 2018). So one of the efforts to improve the understanding of science material, especially in biology is to use interactive multimedia.

Interactive multimedia will present nutrition topics in junior high schools related to health issues. Learning by utilizing interactive multimedia in learning, especially science learning, is expected to be an alternative to improve student learning outcomes. Nutrition material in schools rarely gets the attention it deserves. Because on Nasional Curriculum, the chapter focuses more on the digestive system (Roswati et al., 2019). While nutrition is an essential component of human existence, it is also necessary for health and well-being during various stages of life. To ensure that students are healthy, they must first have a basic awareness of nutrition and must be given a balanced diet with a strong basic understanding. This conception is essential for proper development into adulthood and well into the later stages of life (Perera et al., 2015). And they are also supported by better nutrition which is recognized in the Sustainable Development Goals (SDGs), which requires that healthy eating and nutritional support should be provided to all SDGs as universal goals, targets, indicators, and sectors of the agreed development plan at the level. global. The SDGs are expected to overcome various global problems, including poverty alleviation, improving health and education, developing managed cities, overcoming changes in environmental conservation, and protecting oceans and forests (Yekti et al., 2019).

Interactive multimedia can be further developed to transfer knowledge to students, which is an effective way to focus students' attention during the learning process, concretize information, and is an endless learning tool. Therefore, this study aims to develop interactive multimedia foodivity as interactive multimedia to increase students' understanding of food nutrition in junior high schools.

### **1.2 Research Problem**

This research arises from examining the results obtained through interactive multimedia development to increase students' understanding of food nutrition. So, the problem in this research is "How is the development of Foodivity interactive as interactive multimedia to improve students' understanding on Food nutrition topic?"

### **1.3 Research Questions**

The elaboration of the research problem that the researcher wants to examine in the form of research questions is as follows:

1. How is the development of foodivity interactive as an interactive multimedia on Food nutrition topic?
2. How does the review of experts on media of foodivity interactive as an interactive multimedia?
3. How does the response of students' on foodivity interactive as an interactive multimedia?
4. How is the improvement of students understanding on food nutrition topic?

### **1.4 Limitation of Problems**

Limitation of this research is:

1. Interactive multimedia

Foodivity interactive is one of the interactive multimedia created and developed and consists of text, moving images, animation, video, audio, and mini-games. In making this media using construct 2, which will be exported to android and HTML 5. After the application is tested on students, a questionnaire will be given, including indicators of content quality, content material, improving understanding and motivation. This is done to see students respond to interactive multimedia

## 2. Students understanding

Students understanding will be tested for pretest and posttest on students. The test item will be multiple choice. The test items tested are based on the bloom taxonomy, which consists of C1 (remembering), C2 (Understanding), C3 (Applying), C4 (Analyzing) and C5 (Evaluating). The goal is to determine changes in students' comprehension resulting from the use of interactive multimedia.

## 3. Food nutrition

This topic in this research is about Food nutrition that is limited by core competency number 3 and basic competency number 3.5. The subject is attached at grade 8 in junior high school material in the Digestive System Chapter. The sub-topic in the digestive system focuses on Food nutrition such as carbohydrate, protein, fat, vitamin, and food testing, which is talked about the balanced nutrients contained in the Indonesian national curriculum.

### **1.5 Research Objectives**

The research objective of this research is specified as below:

1. To develop an Interactive foodivity as multimedia interactive to improve students' understanding on Food nutrition topic
2. To analyze the implementation and response of experts on multimedia of interactive multimedia in this study
3. To analyze students respond of foodivity interactive as an interactive multimedia
4. To implement students understanding after learning about nutrition topic by using foodivity interactive as an interactive multimedia

### **1.6 Research Benefit**

Below is the research benefit that expected to provide good output, as follows:

#### 1. Teacher

The result of this study for the teacher is expected to be able to use and design the multimedia interactive as a supporting the teaching-learning process in science by using foodivity interactive, and also make an efficient learning

method and provide an opportunity for students to learn how to use the interactive multimedia that is supposed to support science teaching.

## 2. Students

The results of this study for the students are expected to improve understanding in the health about Food nutrition topic, increase the flexibility in learning, and encourage knowledge for aware of the health by using multimedia interactive.

## 3. Another Researcher

The results of this study can be used as a reference and can be one of the ways to develop another research in the future or find some way to enrich a teacher who has an innovative potential to develop multimedia of teaching in order to get better results from students.

### **1.7 Organization of Research Paper**

In each chapter, researchers will explain further in the points to emphasize:

#### 1. Chapter I: Introduction

This chapter explains the background of this paper, research problem, research question, limitation of problem, research objective, and research benefit

#### 2. Chapter II: Literature Review

This chapter explains the literature review from several research results that have been carried out, such as about student understanding, then an explanation of the interactive multimedia used, and discussing the Food nutrition topic

#### 3. Chapter III: Research Methodology

This chapter explains the method and design that were used, it is described in detail, including population and samples, hypotheses, assumptions, operational definition, data analysis, and instrument data.

#### 4. Chapter IV: Result and Discussion

This chapter focused on the data result that have been tested, it will explain how to process the results of the information in more detail and complete, besides that this chapter will answer the research questions of the paper.

## 5. Chapter V: Conclusion, Implication and Recommendation

This chapter explains the conclusions and implication from the research results that have been carried out and will provide recommendations so that they can be used as references for further researcher.