

# CHAPTER I

## INTRODUCTION

### 1.1 Background

The world is currently facing a health crisis, namely the spread of the coronavirus outbreak which is still widespread in almost all over the world. Coronavirus itself is a large family of viruses that cause mild to severe symptomatic illness. The COVID-19 pandemic began to be known since December 2019 in Wuhan City, China. Based on a report from UNESCO at the end of 2019, COVID-19 began to spread rapidly throughout the world, causing the death of more than 3000 people. In Indonesia, the first confirmed case of COVID-19 was reported on March 2, 2020, with two confirmed cases. As of 12 months since the first announcement of the COVID-19 pandemic, based on data from the official WHO website, confirmed cases have reached more than 100 million with more than 2 million deaths. In Indonesia alone, there are currently more than 1 million confirmed cases with a total of more than 30 thousand deaths (UNESCO, 2021).

The spread of COVID-19 has disrupted human activities globally, from the economy, education, entertainment, social interactions, business and politics. This pandemic has made most human activities carried out from home to reduce the number of confirmed cases of COVID. Many countries are closing schools, universities and colleges, by replacing face-to-face learning with online learning. Based on data from UNSECO's official website on February 17, 2021, there are 28 countries implementing school closures, with around 12.7% of the global student population affected by school closures, including Indonesia (UNESCO, 2021). The Minister of Education issued Circular Number 4 Year 2020 Regarding Implementation of Education Policy in an Emergency for the Spread of Coronavirus Disease (COVID-19) which states that the learning process is

carried out at home through online / distance learning to provide meaningful learning experiences for students. Currently in Indonesia, several schools and campuses have implemented online learning, especially schools in big cities. All of this was done to reduce cases of the spread of COVID-19 in Indonesia.

Education is the main thing that humans need to gain success in life. Education is an activity to assist the development of human resources, which can increase the abilities, knowledge, and potential contained in humans to match the expectations of society. To advance a nation, quality human resources are needed in order to face the challenges of globalization and increase national development in various fields. Education can be obtained from the learning process at school, as well as lessons learned by humans in everyday life.

Learning is a teaching and learning process that involves interaction between teachers and students in a learning environment to achieve educational goals and to produce better behavior change. According to Hanum (2013: 93) effective learning can be said to be learning that optimally utilizes information and communication technology in the learning process as a tool. One of the uses of information and communication technology in learning is by using e-learning.

The development of science and technology has grown rapidly at this time, and is influential in various fields of human life. Technology influences and facilitates various areas of human life such as in the fields of economy, communication and information, transformation, governance, education, and others. Technological developments that continue to this day help humans in creating various objects and techniques that can help human work to be more effective and efficient. One of them is in the field of education, information technology has begun to be widely used as a means of the learning process which is commonly referred to as e-learning.

The development of science and technology in education can facilitate online learning. Learning can take place through video conferencing applications such as zoom and google classrooms, Whatsapp group, Learning Management System (LMS) platforms such as schoology, google classroom, moodle, etc. online learning can create new teaching and learning experiences, because it can be done anywhere. As in a pandemic like now, learning cannot be carried out

face-to-face, so the teaching and learning process is carried out online so that teachers can interact with students in different locations. Students also gain experience during online learning and become more familiar with technology. The use of technology in learning can save time, saving resources and reducing costs, increase interaction between teachers and students, and can increase interest, independence, and creativity because students are expected to be able to find and learn knowledge from the internet independently, students can also choose learning sources that are attractive to them so they can increase student interest in learning (Olszewska, 2020: 111).

The success of online learning depends on several factors such as a smooth internet connection, the availability of learning resources, the ability to master technology, the availability and access to technology, the video conferencing applications and LMS platforms used, and the characteristics of students. Online learning can be said to be effective if students can achieve learning goals and students are active in learning, not only teacher-centered.

The COVID-19 pandemic has caused most schools in Indonesia to experience closures. This of course has an impact on students, teachers, and also student families, because there are still many who are not familiar with online learning. There are still many teachers and students who are not ready to do online learning, are not used to it, and have never even used the Learning Management System (LMS) platform as a means of online learning. Not only teachers, students also experienced difficulties during the COVID—19 pandemic. In addition, internet and network access problems are also a problem in the implementation of online learning (Abidin et al, 2020: 66-67). Students cannot carry out learning at school as usual, those who usually learn face-to-face with the teacher at school, now have to carry out online learning at home. This is a big surprise for students and parents, especially as many parents of students who are usually busy with work outside the home, are now confused because they have to participate in guiding their children to study online.

In a study entitled The effect on online college learning technology in the COVID-19 era and its impact on students' mental by Kusnayat et al. (2020: 153-165), by conducting parametric and non-parametric statistical analysis followed

by qualitative descriptive, showing the impact of learning using online methods on students, it is known that around 60.5% of students are ready to adapt with the use of online lecture learning technology but around 59.5% objected to the assignment given by the lecturer which resulted in a student stress level of around 60%. With this, the influence of the use of online learning technology in Indonesia has a profound impact on the mentality of students in Indonesia (Kusnayat et al., 2020: 163).

In another study conducted at a university in Poland, 99% of students who behaved themselves felt safer carrying out their learning during the current pandemic. However, under normal circumstances 78% of respondents who are undergraduate students prefer to study on campus online, 82% of respondents do not agree that their academic performance is better when they study from home. 55% of respondents believe that traditional learning is more effective than online learning. Additionally, 22% of respondents believe that their university is not technologically ready for distance learning on a large scale. Nonetheless, 80% of students said that lecturers were able to withstand the challenges of adapting to situations and holding classes in accessible formats (Olszewska, 2020: 115-118).

This research is important because we need to get information about the impact of the COVID-19 pandemic on the learning outcomes of high school students in Medan City, and to find out whether online learning during the pandemic has been classified as effective or not, so that in the future improvements can be made to online learning during this pandemic or other implementation of online learning.

## **1.2 Identification of Problem**

Based on the background description described above, several problems can be identified as follows:

1. The learning process in schools is carried out online due to the spread of the COVID-19 virus
2. There are advantages and disadvantages of online learning that influence the learning process

3. The readiness of teachers and students influence the online learning process
4. There are many online media that can be used for online learning

### **1.3 Scope of problem**

In accordance with the background and problem identification above, it is necessary to limit the problem so that it is more focused and focused. The problem in this study is limited to:

1. The research subjects were students of class XI MIPA in SMAN 2 Medan, SMAN 12 Medan, SMAN 14 Medan, SMA Darussalam Medan, and SMA Kartika I-2 Medan
2. The learning process is limited to the physics learning process on elasticity class XI MIPA in the odd semester of the 2021/2022 academic year.
3. The effectiveness of online learning on elasticity topic

### **1.4 Formulation of the problem**

Based on the problem definition, the problem formulation in this research is stated as follows:

1. How do students respond to online learning process currently carried out?
2. How do teachers respond to online learning process on elasticity topic during pandemic COVID-19?
3. How is the effectiveness of online learning on elasticity topic during pandemic COVID-19?

### **1.5 Research Objectives**

In accordance with the existing problem formulations, the research objectives to be achieved are as follows:

1. Knowing the student's response to online learning process on elasticity topic during pandemic COVID-19.

2. Knowing the teachers respond to online learning process on elasticity topic during pandemic COVID-19
3. Knowing the effectiveness of online learning process on elasticity topic carried out during the COVID-19 pandemic.

### **1.6 Benefits of Research**

#### 1. Theoretical Benefits

In general, the results of this study are expected to provide useful information about the effectiveness of online learning at this time, so that the quality of this online teaching and learning process can be improved and the learning carried out becomes more optimal.

#### 2. Practical Benefits

Practical benefits are expected to provide benefits for:

- a. For students, add information about the effectiveness of online learning that is currently being done.
- b. For teachers, the results of the research are expected to help teachers find inhibiting factors and solutions in implementing online learning for teaching and learning activities so that the teaching and learning process is more effective.
- c. For schools, the results of the research are expected to be useful input to improve the quality of implementing online learning programs at this time.
- d. For researchers, as an application of the knowledge that has been obtained during lectures, and the results of research are expected to add insight into online learning.

### **1.7 Operational definition**

1. Coronavirus Disease 2019 (COVID-19) is an RNA virus with crown-like spikes on the virus's outer surface. Coronaviruses are members of the Coronaviridae family, which is part of the Nidovirales order. Several coronaviruses can infect humans, including the zoonotic Middle East respiratory syndrome coronavirus (MERS-CoV) and severe acute

respiratory syndrome coronavirus (SARS-CoV), which cause more severe respiratory disease and have a higher case fatality rate. (Ouassou et al., 2020: 1).

2. Effective learning according to Supardi (in Rohmawati, 2015: 16) is a combination structured including humane, topic, facilities, equipment and procedures directed to change student behavior in a positive and better direction.
3. Online learning is a learning activity that utilizes the network as a method of delivery, interaction, and facilities and is supported by various other forms of learning services, which can be done using the synchronous or asynchronous method. (Darmawan, 2014: 26).
4. Learning outcomes are real changes in student behavior after the teaching and learning process is carried out in accordance with the learning objectives (Jihad & Haris, 2012: 14).



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