CHAPTER I
INTRODUCTION

1.1. Background

The development of Information Technology today is growing so rapidly. In order to compete, especially in the current era of globalization, one must follow the development of information technology in order to compete, especially in the current era of globalization. Including libraries as information institutions that provide information to the public must follow so that the existence of libraries as information institutions that provide credible information is no less competitive with the internet, whose information cannot be filtered due to the explosion of information. In the development of information technology, the Information Explosions is irresistible.

Lee et al (2013) say that industry 4.0 is listed with improvements to manufacturing digitization which will be encouraged by four factors: 1) improved capacity, computational capabilities, and connectivity; 2) the emergence of business analysis, skills and intelligence; 3) the achievement of new forms of interaction between humans and machines; and 4) creating digital delivery instructions to the world of physics, namely robotics and 3D printing. Lifter and Tschiener (2013) increase that the basic principle of industry 4.0 is that the installation of machines, workflows, and systems, using intelligent networks along the production chain and processes to control each other independently.

The digital revolution and the era of technology disruption are other terms for the 4.0 industrial revolution. It can be said that the digital revolution is the development of computers and recording automation in all fields (Ghufron, 2018). With the increase in convergent boundaries between humans, machines, information and communication technology, of course it will also impact various in everyday human life, and also in the world of education.

Derived from 4.0 where the proliferation of computers and automation of recording in all fields to face the era of evolution 4.0 requires education that can form a creative, innovative and competitive generation. What is meant by digital literacy is the ability to understand and use technological information from various digital sources, so this literacy expands new understanding of literacy that is rooted in computer literacy. So the connection with social media, where this social media comes from the source of communication science literacy. One of these can be achieved by optimizing the use of technology as an educational aid.

For biology students, online learning is quite a challenge, because the material taken is quite complex, and it is not enough to explain learning through text alone but also requires practicum both in the laboratory and in the field. Some materials that should be done with practicum, such as Growth Morphology material, are forced to be carried out only by studying literature because of limited tools and materials. The lack of internet access for students who come from villages is also an obstacle in receiving material distributed by lecturers. As a result, students cannot receive the material well. This is in accordance with the research results of Haryanti et al., (2020) that biological material requires practice related to material. Less clear instructions, limited tools and practical materials at home resulted in the highest obstacle category with a percentage of 37.1% among the sub indicators of barriers from lecturers (educators). Based on the interviews that have been conducted, the obstacle for students in carrying out practicum at home is the difficulty in finding practical tools and materials as well as books or references in preparing reports.

Based on the experience of researchers as students, students still often use digital information, one of them without clear sources such as blogspot or wordpress. Students also expressed their difficulties in accessing valid digital information as academic reference materials. Many internet sites on the internet present invalid information so that students must be really selective in sorting out the information. This is also based on the World Summit on The Information Society (WSIS) states that "everyone can create, access, use and share information and knowledge, enabling individuals, communities or communities to reach their full potential to improve their quality of life" (WSIS Declaratioin, 2003).

The digital platform is a program that can support the success of online learning. There are several platforms that can be used in online learning, including Sipda. Apart from these platforms, there are other digital platforms that can be used during learning, including the Whatsapp Group (WAG), (Rachmawati et al., 2020). Learning Management System (LMS) is a software system that creates and designs designed to create, distribute, and manage the delivery of learning materials. and teachers or lecturers to plan and create syllabus, manage learning materials, manage student lecture activities, manage grades, recapitulate attendance, display grade transcripts, discuss and conduct quizzes..

Sharing course material (using Forward feature) WhatsApp has features that can save documents in pdf format, Microsoft Word, Excel and Powerpoint. So from that, when using WhatsApp share documents with the format/ the above form is much easier. Besides being able used to save documents with the above form or format, WhatsApp can also forward messages, making it easier if students want to share with friends another. An example of its application is when a student thinks about the material that has been summarized or recorded while at school, if there is a friend in need because the notes are not complete, can you share to other friends using forward feature. The forward feature makes it easy to send or forward to a friend others, without having to open up to the manager files on the device.

In online lectures, Medan state universities will still be able to facilitate FMIPA students to be able to study as usual face-to-face learning. SIPDA which can be developed by Medan State University must be used optimally by lecturers to be able to organize online learning from home. Likewise, there are various applications that can be used by lecturers, which can be linked at SIPDA to support learning features, such as video documents or other things that are commonly used by students. However, it costs a lot of money to access the video, especially if it requires repetition. Therefore, the authors are interested in using podcasts as another alternative that can facilitate students to study online.

Morphological studies explain that a group of plant morphological characters can be seen from 5 main parts, namely roots, stems, leaves, flowers and fruit. Of the five parts of this plant, it is able to provide a sufficiently in-depth study to study the structure of the plant body as a whole. Care is needed in studying them,

in order to understand the study of plant morphology and to study the benefits and properties of treating certain diseases.

The morphology of a plant species is one of the easily observable characteristics (Jones and Luchsinger, 1987). Reed et al. (2004) stated that morphological characterization of plants is very important for detecting specific traits desired, identifying duplicated accessions, and structuring populations for conservation purposes. Morphological variations that occur due to environmental conditions indicate that a plant carries out an adaptation process. A plant population that is adaptive to a certain environmental condition is called an ecotype. Different ecotypes of a plant population will form patterns based on changes in environmental conditions in the geographic distribution area of these species (Jones and Luchsinger, 1987). The use of morphological data to characterize genetic diversity has limitations because morphological characteristics are influenced by environmental factors, therefore molecular genetic identification is required to complement these limitations . Genetic diversity based on molecular markers, among others, is seen from the protein banding pattern, because protein is the expression of genes. Therefore the results of total protein electrophoresis can be a good technique for identification of genetic diversity. Information about social media for the study of plant morphology where students are very helpful for online learning during and to help find other information.

With the many learning achievements in the Plant Morphology course, it requires students to seek more information related to the subject matter. Supported by technological developments and the use of social media will make it easier to access the information needed. the use of Platform has a significant relationship because digital literacy competencies play a major role in determining the quality of Platform media. Based on this description, researchers are interested in examining how. " **The Effect of Using Online Learning Platform on Academic Performance of Plant Morphology Course".**

1.2. Problems Identification

Based on the background above, researcher identified the problem as follows:

1. The Biology students ability in master the Concepts Morphology Course is not yet known.
2. The Biology student addiction on Platform affects the intensity of their Learning.
3. Relationship between digital literacy and master the Concepts Morphology Course is not yet known.

1.3. Problem Scope

The problem limitation in this research is regarding the effect of using the Platform Online Learning on academic performance of Plant Morphology Course consist of its Digital Literacy and their Master the Concept.

1.4. Problem formulation

Based on the identification and formulation of the problem in this study, the problem can be formulated as follows:

1. How do Biology Student use online learning platform on plant Morphology Course?
2. How is Biology Students master the concept about Plant Morphology Course ?
3. How the relationship between digital literacy and master the Concepts of Plant Morphology Course?

1.5. Research Objectives

The purpose of this study was conducted to determine:

1. To know Biology Student use online learning platform on plant morphology course.
2. To know Biology Students master the concept about plant Morphology Course.
3. To know the relationship between digital literacy and master the concepts in plant Morphology Course.

1.6. Research Contribution

1. For Department of Biology Lecture

   Through this, it is hoped that students can use platform properly so that their understanding of digital literacy can be utilized in looking for basic information in developing material learning. And can motivate students to learn with Really, really disciplined and responsible.
2. For Researchers

   Add insight into knowledge about digital literacy in use of platform so that it can be used as a reference.
3. For Lecturers

   Provides an overview of digital literacy in the use of platform so that it can be used as evaluation material in the use of platform.

1.7. Operational Definition

The digital platform is a program that can support the success of online learning. There are several platforms that can be used in online learning, including:

1. SIPDA : is a Learning with the use SIPDA is a learning process that is structured with the aim of using an electronic or computer system so that it is able to support the learning process and an educational system or concept that utilizes information technology in the teaching and learning process.
2. Whatsapp Group (WAG) : Share subject matter (using Forward feature) WhatsApp has a feature that is can save documents in pdf format, Microsoft Word, Excel, and PowerPoint. Then from that, when using WhatsApp share documents with the format / the form above is much easier.
3. Plant Morphology is one of the main subjects Biology Education Student 2020, which studies how the shape and variation of plants are and what matters are related to plant morphology.

4. Academic Performance :
   a. Digital Literacy : As the ability to understand and use information from various digital sources. He argued that digital literacy is the ability to use technology and information from digital devices effectively and efficiently

in various contexts, such as academics, careers, and everyday life. Obtained data from a questionnaire that will be distributed to students.

b. Master the Concept : Master the Concept is the ability to grasp meanings such as capable to express a given material in a easier to understand , can provide reports and can customize. Master the Concept is the level of ability that expects students to know meaning from concepts, situations, facts they know. Obtained data on Mid term and Final test.