

CHAPTER I

INTRODUCTION

1.1. Problem Background

Everyone gain useful knowledge and add insight through learning and it has several methods to do it. Some will learn through reading books, audiovisual, and e-learning. Those ways of learning will produce outcomes as Maher (2004) defines that learning outcome as ‘being something that students can do now that they could not do previously’. This activity leads to a change in people as a result of a learning experience. It has long been recognized that education and learning are concerned with bringing about change in individuals, and the use of learning outcomes to describe these changes is certainly not a new practice.

The e-learning is known to be the latest way of students to study. Sun *et al* (2006) stated that e-learning is the use of telecommunication technology to deliver information for education and training. Shulamit *et al* (2011) recognized that teaching in an e-learning environment can contribute to the ability to teach, to learn, and most importantly to act as a bridge between two main components in the classroom, the teacher and the learner. E-learning provides different environments for learners, with dynamic, interactive nonlinear access to a wide range of information as well as to self-directed learning in online communication (e-mail and forums). Due to the wide range of learning environments e-learning has the potential to be a powerful learning tool for fostering students’ will and skill for learning complex topics.

With the progress of information and communication technology development, e-learning is emerging as the paradigm of modern education. The great advantages of e-learning include liberating interactions between learners and instructors, or learners and learners, from limitations of time and space through the asynchronous and synchronous learning network model. E-learning’s characteristics fulfill the requirements for learning in modern society and have

created a great demand for e-learning from businesses and institutes of higher education (Kenney, 2007). Research by Aslam (2015) also stated that e-learning is a computer-mediated instructional strategy and it can be used to leverage technology and create better student-teacher relationship. It is also known to enhance student's engagement and achievement.

Khan *et. al* (2012) found that the e-learning facilitates students with a unique flexible learning experience. Students can access and engage with their educational program from anywhere and at any time. As one of the learning resources can help students to be more confidence and competence to study and more responsible for the result. It is also known that e-learning can help them to motivate themselves, to provide collaborative activities between teachers and students. This activity will lead to improve student satisfaction levels and academic performance.

One of the well-known e-learning facility is the *Portal Rumah Belajar* from the Ministry of Education and Culture. It is a new alternative for educators implementing the e-learning in an interesting and interactive way (Rizka *et al.* 2019). It is a learning resource and will give students the information and insight externally. The portal is supported by learning media such as pictures, video simulation, animations, and e-books. *RumahBelajar* website aims to enable students to carry out learning independently and equipped virtual classes to help students to study from anywhere and anytime. It is supported by comprehensive material for science subjects suitable for the junior and senior high schools.

The observation was held at class X MIA SMA Negeri 4 Medan and interview was conducted with the Biology teachers. The result revealed that students often experience difficulties with the material Kingdom Animalia, especially the topic of vertebrate. Using the conventional learning methods, students' scores did not reach the minimum completeness criteria or KKM. This research explored the use of e-learning in the learning process to enhance the student's scores at the test. The use of this alternative way of teaching has affected the student's scores and comprehension (Khan *et. al* (2012). It is also suggested that the students are more enthusiastic to study both at school and home. This can

be acknowledged from the fact that using the e-learning is new for them and has been proved to improve student engagement with the internet and websites.

The application of e-learning based process in the classroom at school is supervised by the teacher. Subject matter is also supported by the material from books and the learning portals. The process is running by the presence of the teacher and it is conducted face to face. The use of the portal is aimed to improve the quality of the learning process so students have better circumstances to study. It is known that the use to portal increase the student's activity during the learning process. The activity of writing, reading, and listening using the portal give students enthusiasm to study in more conducive way. The better condition of the learning process will create better student's outcomes. More activities in the process of learning will help students to comprehensively study the material and improve student's performance in the test. The research is aimed to explore the effect of the use of the *Rumah Belajar* to the student's cognitive learning outcomes on the topic of vertebrate. The result of the research is used to reveal the application of e-learning of *Rumah Belajar* in the school. The title of the research is **"The Effect of E-Learning Implementation on Vertebrate Toward The Student's Learning Outcomes of Class 10 SMA NEGERI 4 MEDAN"**.

1.2. Problem Identification

Based on the background of the research, there are several problems can be identified:

1. The use of e-learning based on the *Portal Rumah Belajar* of the Ministry of Education and Culture has not been applied evenly in learning activities.
2. The material presented in the biology lesson taught by the teacher for class 10 is incomplete.
3. The large coverage of biology learning materials for class 10 does not correspond to the effective learning time in schools.

1.3. Problem Scope

The research is limited to the use of *Rumah Belajar* and Google Classrooms on the topic of vertebrate to determine student's cognitive learning outcomes.

1.4. Research Question

The research questions are formulated as follow:

1. How does the use of *Rumah Belajar* affect student's cognitive learning outcomes on the topic of vertebrate?
2. What is the comparison of student's learning outcomes between the experimental and the control class?

1.5. Research Objectives

There are two objectives of the research, they are :

1. To explore the effect of *Rumah Belajar* on student's cognitive learning outcomes on the topic of vertebrates class 10 at SMA N 4 Medan?
2. To find out the comparison of student's learning outcomes between the experimental and the control class?

1.6. Research Benefits

The research is significantly contribute to:

1. Support the school with an appropriate approach in dealing with students with difficulties in studying Biology in general and the topic of Vertebrates in particular.
2. Improving the quality of teaching strategies on the topic of Vertebrates through e-learning
3. Provides more information on teaching biology, particularly the topic of Vertebrates.

1.7. Operational Definition

To avoid misunderstanding about this research, the operational definition of this research is:

1. Learning outcomes are the occurrence of behavior changes in a person that can be observed and measured in the form of knowledge, attitudes, and skills.
2. E-learning is an educational system or concept that utilizes information technology in the teaching and learning process.

