

CHAPTER I

INTRODUCTION

1.1 Background Of The Problem

Learning resources are all sources in the form of data, facts, ideas, environment, people, and objects used in learning activities separately and in combination to achieve learning competencies and objectives (Cahyadi, 2019). Along with the development of technology in the 21st century which is advancing rapidly, it can be seen from the increasing use of technological tools in every activity, especially in increasing the use of technology in education, spurring and encouraging innovation and competitiveness in teaching and learning. Technology devices that are improving and faster provide convenience in accessing various information knowledge and improving education in multiple aspects.

The development of science and technology supports teachers in innovating technology results to use learning instruments and media and create complex and straightforward learning media to achieve learning goals (Silaban et al., 2016). One of the technology implementations in education is using ICT (Information Communication and Technology) to create and develop exciting and fun learning resources and materials. The rapid development of science and technology makes it impossible for teachers to teach students all concepts of knowledge and facts in learning activities based on technological developments (Elnada & Salam, 2016).

The quality of learning can be low if educators only use conventional teaching materials without creativity to create and develop their teaching materials that are more interesting, more varied, and innovative following the socio-cultural aspects of students (Silaban et al., 2015). For this reason, following technological developments in education, it is necessary to have learning resources such as

technology-based modules, namely by doing electronic modules (E-module) may access via android that can be used as an effective and efficient learning resource can used anywhere and anytime to understand the concept of Natural Science (IPA) material. Because one of the important components in increasing learning activities is learning resources that help facilitate understanding of the delivery of material to students, one of which is using android media (Silaban & Sianturi, 2021).

Modules that are made and developed attractively with language that is easy to understand and prioritize student activities can spur the emergence of a sense of desire for students to read books to improve understanding of science material. By increasing students' knowledge of the material teaching, learning activities will take place actively. Because of the advantages of attractively designed, easy-to-learn modules will motivate students to learn and ask the teacher about the material they are studying. Using e-modules that set clear and directed learning goals can provide feedback to students to find out their shortcomings to be corrected immediately (Lasmiyati & Harta, 2014). The interactive and innovative E-Module is used as an independent learning medium because it contains material in the form of word pdf and contains Audio, Video, and animation, which helps students be motivated to read science material books.

In learning activities, the teacher must develop creative and interactive learning resources that adapt to the learning approach, learning model, and learning method used. One of them is that the teacher has not done electronic modules. The implementation of the 2013 curriculum emphasizes an education system centered on students seeking their knowledge. So that by using attractive and interactive e-module that can access via cell phones, it is easier for students to use them in independent learning activities anywhere and anytime.

The e-module used must also be adapted to the characteristics of the students. Four main characteristics of students that teachers must understand: the basic abilities of students, cultural backgrounds, personality differences, and ideals (Meiriyanti, 2015). In addition, there is also an academic background that teachers must understand, such as student achievement index, intelligence level, and learning style (Dewi, 2020).

The different characteristics of students must be understood by the teacher, one of which is the characteristics of the different learning styles of students. Students' learning style refers to learning and learning procedures that students prefer. There are three learning styles of students: visual learning style, auditory learning style, and kinesthetic learning style (Hartono, R. 2013). E-Modules, with the help of an appropriate approach to the characteristics of students, will help students understand science material well according to their learning style. Choosing the right learning approach will make learning activities more active and fun. One of them is using the SETS (Science, Environment, Technology, and Society) learning approach.

The SETS approach is a learning approach that emphasizes students' understanding of scientific concepts related to the natural surroundings and everyday life. The SETS approach uses an event that occurs in the community as a learning topic to explore students' curiosity, develop students' understanding abilities of science material and develop students' potential in solving problem topics in the surrounding environment (Hayati et al., 2019).

The concept of implementing modern learning in the classroom is no longer centered on the teacher as the primary source in learning activities so that it requires students to take an active role in searching, selecting, finding, analyzing, concluding, and reporting science material information from various sources (Warsita, B., 2008). However, the availability of facilities and infrastructure, excellent learning resources, or learning materials is not sufficient for the needs of students and teachers in carrying out everyday learning activities. However, teaching materials are an essential part of carrying out learning activities.

Based on observations and interviews with teachers and students at SMP Negeri 35 Medan, science learning activities are still monotonous using the lecture learning method, the note-taking method, and rarely using the question and answer method. In addition, in learning activities, students are only facilitated with textbooks. Still, not all students get these textbooks because the school's books do not match the number of students, so students have to take turns with friends to bring science books. Therefore, schools' lack of several books makes students not

study at home even though books play an essential role in achieving learning objectives.

In addition, based on interviews with students, the reasons they rarely read books were the difficulty of understanding the science material in the textbooks and the lack of depth in the material discussed in the texts. Even though the procurement of books is significant to help students get knowledge about science material to be studied and understood in depth. The lack of procurement of learning resources such as books makes learning activities low.

And in learning activities, teachers and students also do not use other technology-based learning resources. Such as e-module to overcome the lack of books. In the learning process, activities still occur passively, where interactions between teachers and students rarely occur, making students feel bored just listening to material explanations from the teacher. The students sometimes play on their respective cellphones when learning activities occur. Learning activities that are only teacher-centered make students less able to carry out learning activities independently in understanding the concept of science material.

One way to solve the problem of the need for teaching materials and differences in student characteristics is to use interactive and innovative e-module learning resources. The use of e-modules, which contains materials, pictures, videos, and Audio to explain the contents of these materials, helps students with different learning styles to understand science material clearly. In addition, the use of e-modules that can be used and accessed quickly by students using android cellphones is beneficial for teachers and schools in overcoming the shortage of books and helps students to be able to read science material anywhere and anytime easily.

So that by using E-Modules based on SETS in learning activities, students can understand science material in-depth without being hindered because they do not have books and relate them to the knowledge learned with every event that occurs in everyday life.

Sari, DFK, Wahyuni, S., & Supriadi, B (2016) suggested that using science learning modules based on SETS can improve student learning outcomes in the

cognitive, affective, and psychomotor domains with an average cumulative learning outcome of 83.51. In line with research conducted by Muzari, I., Ashadi., & Prayitno, BA (2016), the use of SETS-based science modules on healthy food and the body can improve students' cognitive learning outcomes with an N-gain score of 0.344 or in the medium category because students find it easier to learn the material. After all, it is presented with various pictures (Muzari et al., 2016).

Based on the description of the problems above, research will conduct on "Development of E-Modules based on SETS (Science, Environment, Technology, Society) on science material in junior high schools."

1.2 Identification of Problems

Based on the description of the background, various problems can identify as follows:

1. Lack of availability of learning resources that suit the needs of students.
2. Less attractive learning resources are only in the form of package books so that they are less attractive for students to read.
3. The lack of availability of books makes student learning activities low.
4. Science learning activities take place in a monotonous and teacher-centered manner.
5. There are no E-Module learning resources available based on the SETS Approach.
6. Lack of use of technology in science learning activities in class.

1.3 Formulation of the problem

Based on the background and identification of the problem above, the researcher formulates the problem as follows:

1. What are the results of the E-Module development carried out in the E-Module based on SETS development?
2. How is the feasibility level of the E-Modules based on SETS on science media in junior high schools based on the assessment of media experts?

3. How is the feasibility level of the E-Modules based on SETS on science material in junior high schools based on the assessment of material experts?
4. How is the teacher's response to the E-Modules based on SETS on science material in junior high schools?
5. How do students respond to E-Module based on SETS on science material in junior high schools?

1.4 The Scope Of Research

This research is a research and development (R&D) using a 4-D model consisting of Define, Design, Develop, and Disseminate. This research will be conducted at SMP Negeri 35 Medan will be conducted at Jl. William Iskandar Ps. V, Kenangan Baru, Percut Sei Tuan District, Deli Serdang Regency. This research only covers taking the validity of the development of media and materials in the E-Module based on SETS on global warming material. And took a teacher response questionnaire for as many as 3 science teachers and took a class response questionnaire consisting of 20 students against the SETS-based E-Module that had been developed. And the SETS-based E-Module will be distributed in a limited way to 20 students and 3 teachers.

1.5 Scope Of Problem

So that the research is more focused, the researchers limit the research problems as follows:

1. Development of E-Modules Based On SETS (Science, Environment, Technology, society) on global warming material in class VII.
2. The research only focuses on how the E-module is generated based on the validation of media experts, material experts, teacher and student response questionnaires.
3. Research and development of E-Module based on SETS on science media and science material is reviewed and validated by 3 science lecturers.
4. Development E-Module based on SETS will be assessed based on responses by 3 science teachers and 20 students.

5. The development of E-Module based on SETS is limited to a limited trial of class VII students, totaling 20 students at SMP Negeri 35 Medan at the Disseminate stage.

1.6 Research Objectives

The objectives of this study are:

1. To find out the results of the E-Module based on SETS development analysis that was developed
2. To determine the feasibility level of E-Module based on SETS on science media in junior high schools based on the assessment of media experts.
3. To determine the level of feasibility of E-Module based on SETS on science material in junior high schools based on the assessment of material experts.
4. To find out the teacher's response to E-Module based on SETS on science material in junior high schools.
5. To find out the response of students to the E-Module based on SETS on science material in junior high school.

1.7 Benefits Of Research

There are two benefits of this research, namely theoretical and practical, as follows:

1. Theoretical

The results of this study expect to provide increased knowledge about how to develop teaching materials in the form of interesting, creative, innovative E-Module in showing science learning activities in the process of teaching and learning activities. This research expects to provide an increase in the quality of learning in the classroom using E-Module based on SETS.

2. Practical

Practically, the results of this research will be able to provide benefits to several parties, namely:

a. For Researchers

The results of this study provide experience and knowledge for researchers on problems in teaching and learning activities and provide researchers with expertise in overcoming these problems using the development of E-Modules based on SETS on Science Materials in junior high schools. Researchers will gain additional knowledge and experience as good prospective educators by using technology in developing good learning resources based on varied approaches.

b. For Teachers

The study results in E-Module will use as learning resources in science learning activities as a supplementary book to teach students.

c. For Students

Students will find it easier to understand the science material presented by the teacher well and apply their knowledge (Science) according to the environment, technology, and society in everyday life.