

CHAPTER 1

INTRODUCTION

1.1 Background

Learning is a systematic or systemic process or activity that is interactive and communicative between the educator (teacher) with students, learning resources, and the environment to create a condition that allows students to take action (Arifin, 2010). In the learning system there is a complex system whose success can be seen from two aspects namely the product aspect and the process aspect. Learning success viewed from the product side is the success of students regarding the results obtained by ignoring the learning process (Sanjaya, 2011).

The learning process which consists of learning and teaching processes should be realized properly and clearly. This has been stated by researchers before that the teaching and learning process is not just about delivering teaching material or receiving teaching material but it needs a clear concept so that teaching material can be conveyed and accepted clearly. In the implementation of the teaching and learning process it is necessary to design teaching so that the learning process runs effectively and efficiently so that it triggers students who are active in learning (Husaini, 2012).

The world of education is inseparable from the learning process which includes teachers, students, and learning environments that influence one another in order to achieve learning objectives. Media is one of the supporting factors for the achievement of learning objectives. This relates to the use of appropriate and varied media in the learning process can increase learning motivation and can reduce students' passivity. (Deni Hardianto, 2005). But it can be seen now that the learning media used for the learning process, especially in learning chemistry, are often monotonous only in conventional learning media such as printed books or student worksheets provided by the school.

Textbooks provided by schools in fact cannot be used by students for various reasons such as the number of textbooks that are not proportional to the number of students. This causes students who do not have textbooks to copy, copy or buy the book. However, for students who do not have money to copy, or

buy textbooks will burden it in terms of time, energy, and cost. Based on the above problems, developing learning media is needed to be able to overcome problems in the learning process, one form of learning media development is the use of information and communication technology in the field of education. The form of the utilization of information and communication technology is mobile learning (m-learning), one part of electronic learning (elearning). M-learning is a learning medium using mobile devices such as mobile phones, PDAs, laptops, and tablet PCs (Astra, 2012).

Electronic devices such as mobile phones are a communication tool used by most students in their daily lives. Based on the results of an initial survey conducted by researchers when conducting apprenticeship 3 at SMA N 7 MEDAN, all students of class X MIA 3 have mobile phones. However, the use of mobile phones is often misused for less useful purposes such as playing social media and playing online games. In fact, according to a survey conducted by id.Theasianparent.com, most parents allow their children to use mobile phones for reasons of educational interest. But in fact, the use of mobile phones is not in accordance with what is expected by parents.

The material chosen is chemical bonding material, because as revealed by Sunyono (2012) that chemical bonding material is one of the chemistry learning materials that contains abstract concepts. Chemical bonding material in class X semester 1 of the 2013 curriculum contains several sub materials such as atomic stability, ionic bonds, covalent bonds, molecular shapes and intermolecular forces. Most students have difficulty understanding chemical concepts and principles. The concept contained in chemistry in general is an abstract concept that requires a good understanding in learning chemistry (Effendy, 2002).

Based on the description above, the researcher will use Android-based chemistry learning media on chemical bonding material for class X SMA. Chemical bonding media is an interactive media that combines audio material, video image explanations and interesting exercises and displays of chemical bonding material that can be used by students as independent learning media developed in the form of an android application that can be accessed online and

offline. The varied content is intended so that this media can be used by all students whose study advice is visual or audio and audio visual. In addition, the material contained in the media is compiled from various learning sources in accordance with the 2013 Curriculum so as to provide broader insights to students about chemical bonds. The media used are existing media, and have been validated by media experts. So that the media used is media that has been verified worthy of use.

1.2 Problem Identification

Based on the background description above, the authors identify the problem as follows:

1. The use of information and communication technology in the learning process is still not optimal
2. The use of Android-based learning media using mobile phones on chemistry learning materials is still lacking
3. Chemical bonds are material that most students consider difficult

1.3 Problem Scope

To make this research get specific results, this multimedia development is limited to certain materials, namely:

1. The material used in this research is chemical bonding material in grade X based on the 2013 curriculum
2. The media product used is media with Android-based applications that meet eligibility standards
3. The measured student learning outcomes are cognitive abilities that include C1, C2, C3

1.4 Problem Formulation

Based on the background that has been described, the following problems can be formulated is:

1. Are the learning outcomes of students using Android-based learning media on chemical bonding material for grade X senior high school higher than the minimum completeness criteria?
2. Is Android-based learning media effectively applied in chemistry learning on chemical bonding material in terms of student interest in learning?
3. Is there a significant relationship between student interest in learning with student learning outcomes in using Android-based learning media?

1.5 Research Purpose

The aim of this research is :

1. To find out the learning outcomes of students who use Android-based learning media on chemical bonding material in class X is higher than the minimum completeness criteria
2. To find out the effectively of using Android-based learning media on chemical bonding material for grade X senior high school student on student interest in learning
3. To find out the relationship between student interest in learning with student learning outcomes using Android-based learning media

1.6 Research Benefits

The benefits of this research are:

1. For researchers, providing new experiences in the use of new innovations in learning media.
2. For teachers, helping teachers to improve creative and innovative learning through technological developments and increasing the effectiveness of learning time outside the classroom.
3. For students to help students to learn independently by providing media that can be used outside the classroom and can be used at any time.
4. For schools it can help provide learning media that is attractive to students.

1.7.1 Operational Definitions

1. Learning Media are all tools and materials that can be used for educational purposes.
2. Android-based is media that can be used on communication devices in the form of an android mobile phone in the form of .apk files.
3. Learning outcomes is a mental process that leads to the mastery of knowledge, skills, and attitudes with process skills and is carried out in order to cause progressive and adaptive behavior.
4. Cognitive is a thought process, namely the individual's ability to connect, assess, and consider an event.

