CHAPTER I
INTRODUCTION

1.1 Background

Education has an important role to prepare qualified human resources and to compete in the development of science. The education should be encouraged as well as possible. This can be achieved through a timely education in order to realize the learning objectives, which are implemented in the form of the learning process which is the implementation of the school curriculum through teaching activities. Considering the importance of education, serious, systematic, institutionalized and sustainable efforts from all parties are needed as an effort to prepare the nation's children for a more prosperous, advanced and civilized national life (Solichin, 2006). The purpose of education is basically two, which is to make students smart and at the same time good people. If these goals can be achieved, human civilization will tend to be more advanced than before. Conversely, if both or one of these goals is set aside, what happens is the destruction of the nation's civilization. For the Indonesian people, to make students good people requires a holistic and comprehensive character education effort. Holistic meaning is related to values that are used as references and comprehensive meanings related to aspects that are related and mutually harmonious. A comprehensive approach is expected to provide a more complete solution to the problem compared to a single approach. The comprehensive term in value education covers various aspects: content, method, process, subject, evaluation (Rukiyati, 2013).

Chemistry is a science very important, but in fact chemistry is one of the difficult lesson even load by most students. The material is as if imaginary and not real because can not be seen directly by the direct eye thus causing less students interested in learning it (Nasution. 2019). Chemistry has many fields of study that study facts, concepts, laws as well theories that have a lot to do with everyday life. Chemistry subject in high school has many fields of study that are arranged sequentially and are interconnected competencies learned. This requires students

to understand concepts in chemistry as a whole so as not to experience difficulties in studying chemistry. One of the field of chemistry in high school is chemical bonding. Chemical bonding material describes how atoms form bonds, both with the same atom as well as with different atoms. A chemical bond occurs because a group of atoms shows a more stable unit because it has a lower energy level than the energy level the constituent atoms are separate. Concepts in bondage chemistry is abstract, so it is difficult to apply it contextually (Safitri, 2018).

However, the education system has changed since the time of the pandemic. To follow the health protocols set by the government, teaching and learning activities are carried out online. Students can't do face-to-face learning activities. Moreover, students are required to be able to learn independently because of the limitations of meeting between teachers and students. The online education system is not easy either. Beside the personal discipline for independent study, there are facilities and resources that must be provided (Yudhoyono, 2020). Often we see the role of the younger generation or the birth of this digital era, we don't think of difficult times using technology, even with technology that makes them more mature and independent in terms of utilizing this technology to help their learning process. Even students know how to educate themselves and seek information through information and communication technology. Based on this, the government's decision to implement learning at home can occur in every educational unit during the Covid-19 outbreak, as long as information technology (internet network) is affordable to every educational unit. A Cambridge International study through the 2018 Global Education Census shows that Indonesian students are very familiar with information technology, not only in social media but also for their learning needs. Based on the results of the study, Indonesian students are ranked the highest globally as users of IT rooms or computers in schools, both who do learning with teachers and their peers. So in this case the government is very appropriate to issue a regulation on a bold learning system in every education unit from elementary schools to tertiary institutions, so that the Indonesian nation is not tarnished by things that are not

justified by religion or the state so that they can quickly avoid the Covid-19 outbreak (Hamdani, 2020).

There are many ways to be a creative teacher in the learning process, one of them is by utilizing learning media in the learning process (Umar, 2013), said that learning media are tools, methods, and techniques used as intermediaries for communication between a teacher and students in order to make communication and interaction between teachers and students more effective in the teaching and learning process in schools. The use of instructional media is an inseparable part and is an integration of the learning methods used. The position of learning media has an important role because it can help the learning process of students. The use of instructional media, abstract learning materials can be concrete in learning. The use of media can improve student achievement and motivation. The learning media will make the learning process more interesting, for example in terms of appearance combined with several images or animations. The attractiveness of physical appearance greatly influences the learning process, the more attractive the media display the more motivated students to learn so that it affects student learning outcomes. The beauty, attractiveness, and interactivity in a learning media is a means so that students are not bored in following the lessons and the greatest effect is expected that students can be motivated and make it easier to receive subject matter (Fanny, 2013).

The development of information technology that is increasingly rapid in the current era of globalization can not be avoided any more influence on the world of education. The global demand demands the world of education to always and constantly adjust technological developments to efforts in improving the quality of education, especially adjusting its use for education, especially in the learning process. Information technology is the development of information systems by combining computer technology with telecommunications. Globalization has triggered a shift in the world of education from conventional face-to-face meetings to more open education. Future education will be flexible (open), open, and accessible to anyone who needs regardless of age, or previous educational experience. Future education will be more determined by information

networks that allow interaction and collaboration, not oriented to school buildings. A tendency for change and innovation in the world of education will continue to occur and develop in entering the 21st century today. These changes include: easier to find learning resources, more choices for using and utilizing ICT, the increasing role of media and multimedia in learning activities. The tendency for change and innovation, has very broad implications in the world of education, namely changes in renewal programs and learning technologies, changes in learning and learning programs by using the experimental method, controlling learning over students, increasing IQ (intellectuality quotient) offset by fostering EQ (emotional quotient), and SQ (spiritual quotient), and demanding the integration of ICT in learning activities. Technology can improve quality and reach if used wisely for education and training, and has a very important meaning for well-being (Budiman. 2017). The use of technology in education enables the learning process to be more active, attractive, motivating, stimulating, and meaningful to the student[1]. For example, PowerPoint presentations, animated videos are being used pervasively in classrooms around the globe. The problem with this technology is that the student remains a passive element of the learning process. These Information Technologies must aim for better and more participation from the students (Sigha, et al, 2012).

One example of learning media that can be concrete by utilizing technological developments in education is the android-based learning media. The development of learning media is based on several considerations: a) can be used as a medium of independent learning for students both at school and outside school, b) can be used by educators as a learning medium in teaching and learning (Kuswanto et al. 2018). The use of mobile phones and other portable devices is beginning to have an impact on how learning takes place in many disciplines and contexts. Learners who are not dependent on access to fixed computers can engage in activities that relate more closely to their current surroundings, sometimes crossing the border between formal and informal learning. This creates the potential for significant change in teaching and learning practices (Kukulska, 2009).

Learning media that utilize cellular telephone technology is called mobile learning. Mobile learning is an alternative learning media development. Mobile learning can be seen as a system that is seen in an effort to improve the quality of learning by trying to penetrate the limitations of space and time (Darmawan, 2016). There is considerable evidence to suggest that mobile learning is growing in visibility and significance. First, there is the growing size and frequency of dedicated conferences, seminars, and workshops, both in the United Kingdom and internationally. Second, there has also been a rising number of references to mobile learning at generalist academic conferences (Traxler, 2005). At present there are still very few learning media that utilize cell phones. Many students still use laptops or some even use manuals to support learning in school. Using a laptop as a learning medium will make it difficult for students to carry the device because it is heavy and has the hassle. Teachers still use conventional methods in teaching so students feel bored when doing learning activities. Seeing this potential, the development of instructional media by utilizing cellular phones is by making mobile learning aimed at all Android platforms. Android can be interpreted simply as a software used on a mobile device that includes an operating system, middleware, and key applications released by Google (Astuti, et al, 2018).

Based on the background above, the researcher feels interested to conduct research with the title : **The Use of Android-Based Learning Media on Chemical Bonding to Increase Student Motivation and Learning Outcomes During Online Learning.**

1.2 Identification of Problem

1. The teacher still uses conventional methods so that makes students less active in learning

2. The learning media used by the teacher do not attract the attention of students

3. Limited time when online learning makes students less in acceptance of the material

4. Decreased motivation and learning outcomes of students in online learing period

5. The majority of students using android as not for learning media

1.3 Limitation of Problem

To avoid the spread of problems in this study, it is necessary to limit the problem. The limitations of the problem in this study are as follows:

1. The use of android-based learning media on chemistry in online learning period

2. The object of research is only limited to students of class X MIA semester I

3. The learning material in this study is limited to the material Chemical Bonding

1.4 Formulation of Problem

Based on the background and identification of the problems above, the formulation of the problem in this study are:

1. Is the enhancement of student learning outcomes that using Android-base learning media higher than students who do not use Android-base media?

2. Is the learning motivation of students who use Android-base learning media higher than students who do not use Android-base media?

3. Does has the correlation between students learning outcomes enhancement and motivation of students who use android-base media?

1.5 Objective of Research

Based on the above problem formulation, the objectives of this study are:

1. To find out the learning outcome enhancement of students who use Android-base learning media is higher than students that not use android-base learning media on chemical bonding topic with using Problem Based Learning Model

2. To find out the learning motivation of students who use Android-base learning media is higher than students that not use android-base learning media on chemical bonding topic with using Problem Based Learning

Model

3. To find out the positive and significant correlation between students learning outcomes enhancement with motivation of students who use android-base learning media on chemical bonding topic with using Problem Based Learning Model

1.6 Benefits of Research

The benefits of this research are:

1. For Students

   As a learning media that can be accessed anytime and anywhere with a smartphone

2. For Teachers

   Chemical learning media on Chemical Bonding material which is expected to help teachers in facilitating the learning process.

3. For Researchers

   As an added insight, ability and experience in increasing his competence as a prospective teacher,

4. For Future Researchers

   As information material to be able to develop further research on Android-based learning media.