

# CHAPTER I

## INTRODUCTION

### 1.1 Background

The development of science and technology has been a change in every field. One area of change is education. Education is one of the manifestations of human culture that is dynamic and full of development. Therefore, change or development of education is indeed supposed to be improved at all levels in anticipation of future interests (Trianto, 2009).

Curriculum 2013, which put into effect from the academic year 2013/2014 was developed with an improvement mindset. One improvement mindset of this curriculum is learning patterns into a single tool multimedia-based learning (Compiler, 2013). The teacher needs a media that can explain the chemical material with all three levels (macroscopic, sub-microscopic, and symbolic). The selection and utilization of appropriate learning media based on relevant learning theory will have a positive impact on the success of the learning process (Sutirman, 2013).

Teaching materials are all kinds of materials and tools used to assist teachers/instructors in carrying out the teaching and learning activities in the classroom, according to this definition, teaching materials can also be interpreted as a set of facts, concepts, principles, procedures, and or generalization (Abidin, 2014). Good teaching materials very effectively used as a medium of learning because it serves as a communication tool to bring accurate information from learning resources to learners (Silitonga&Situmorang, 2009). Using good teaching materials will accelerate the achievement of competence because it serves as a good teacher, objective, has the truth and relevant (Situmorang, Sinaga, Tarin, Sitorus, and Tobias, 2011). Good teaching material, of course, should be able to motivate students to learn. In learning, motivation is the driving force within the students that lead to learning to walk properly, so that the desired objectives can be achieved by the subjects studied. Motivation and learning outcomes are the two things that affect each other (Simatupang, 2013). Learning outcomes are the resultof interaction acts of teaching and learning. In terms of teachers,

teaching acts end with which is a visual media can be tangible silent visual media: photographs, posters, books, magazines, newspapers, reference books, and other items printed output, film strips and OHP (Rusman, Kurniawan & Riyana, 2011).

The e-book as a learning tool because it is one that utilizes computer technology as a learning medium. Along with advances in technology, e-books can be presented in a multimedia format, where there are pictures, graphics, sound, animation, and video (Andikaningrum, 2014), (Chandra, 2016). The e-book is a book in electronic format containing information that can be either text or image. Today, an e-book on the market has undergone various developments. E-book demand because of its small size, it is not easily weathered, and portability. The advantages of e-books that others are able to show an illustration of multimedia, such as animation (Eskawati & Sanjaya, 2012).

The interest of students towards learning that is presented is a matter that can be used as a benchmark of success in the learning process. The development of multimedia-based media such as visual media e-book is expected to guide students to learn and to better understand chemical bonding material. Besides the knowledge and skills acquired the students not only from the given set of facts but also the result of finding its facts. The active participation of students in learning to increase understanding and mastery of learning materials (Sanjaya, 2008).

Throughout the search, the author still lack the use of e-books in the learning process is supported by the facts in the field of the study results predecessor that previous research which states that the use of multimedia teaching materials to help students visualize abstract concepts but the use of multimedia teaching materials in schools is still low (Lee & Kamisah, 2011). Then the teaching materials available on the market are too formal, not interesting, and not follow the syllabus (Ghazali, 2008).

On the other hand, based on the results of previous studies conducted by (Simatupang, 2013) shows that innovative chemistry school textbooks can help students in learning to achieve competency in accordance with the demands of the curriculum. School textbooks as a medium of learning can improve student learning of chemistry with the effectiveness of the learning outcomes for students of

SMANegeri 1 Padang Sidempuan amounted to 17.39%, for students of SMAN 4 Padang Sidempuan amounted to 19.06%, and for students of SMAN 6 Padang Sidempuan amounted to 18.74% and also use school textbooks developed increase students' motivation with an average of 89.71. Based on the analysis that has been done on the print instructional materials used as the main source in the education process in schools do not include three chemical representations. This is supported by research (AddiinAshadi& M, 2016) who said that almost all the books using the chemical representation centered on the symbolic level.

Based on previous research on the students' understanding of chemical bonding materials classified in the low category. This is also supported by secondary data from test scores Yadika high school students who have an average of 42.79 in chemical bonding material. The chemical bond is one of the materials that are abstract (Rahayu, 2014). This abstract concept that the chemical causes the students to have difficulty understanding the chemical material. based on research (Farida, 2009) students tend to be difficult to present the sub-microscopic level. The trouble allegedly occurred due to a lack of development of sub-microscopic level representation through appropriate learning visualization (Farida, 2009).

Based on information from teachers SMK South Parigi that there are some difficulties of students in studying chemical bonding material include difficulty in understanding the process of formation of chemical bonds, difficulties in determining the electron configuration and how to describe the symbol of Lewis. It can be seen from the data analysis results exam results class X SMK South Parigi shows that students who have not completed them individually 35, 53% (19 students who did not complete of 26 students with KKM 65). This shows that student achievement is still lacking and needs to be improved. Limitations of learning to read and write media beginning in the lower class are identified as one of the causes of student learning outcomes that are not yet in line with the chief engineer and SKM (Sumardi, Marzano, & Mary, 2011). Therefore, the authors are interested in the material in a chemical bond as research to be conducted later.

Based on the things that have been described above, the authors are interested in doing the development of innovative teaching materials intended to

produce teaching materials chemistry e-book on chemical bonding material. Teaching materials are modified will contain material chemical bonds with the addition of several animated images and includes multiple examples and a video to explain the chemical bond and has a display teaching materials interesting along with some links in the e-book, there are several explanations of the material will be linked to the daily life -day via video, in addition to the e-book teaching materials accessible via the internet in a PDF file. In modifying this e-book using the 3D flipbook when opening an e-book like opening the textbooks in general, it is useful to support the achievement of basic competence and can enhance student motivation and student learning outcomes. It also aims to help students learn, for teaching materials e-book can be downloaded from the Android or a computer in the learning process and can be opened anytime and anywhere, because of the practical so easy to carry anywhere, it encourages students to learn independently anywhere. This will facilitate the learning medium teachers in the provision of material to students who are concerned that the provision of material can be structured and the expected learning process takes place efficiently, particularly on the subjects of chemical bonds that can be more effective and be understood well by the students. Therefore, the authors raise research entitled. "The Development of Innovative E-book on chemical bonding material to increase student motivation and learning outcomes".

## **1.2 Identification of Problems**

Based on the background that has been stated above, the problems identified are as follows:

1. The school books, with a variety of different prices.
2. The school books have enough heavy, not practical to carry anywhere.
3. The school books have a less interest appearance.
4. The minimum of a lack teaching materials available in the form of e-books on chemical bonding.

### 1.3 Scope of The Problem

To give a clear scope in the discussion, researchers need to restrict the problem in this study as follows:

1. The material chosen in this study is a chemical bond class X.
2. The subject of the study is limited to polar and nonpolar covalent the student class X semester odd.
3. Teaching materials a multimedia e-book is a form of visual media.
4. The e-book uses 3D flipbook software and downloaded it into PDF.

### 1.4 Formulation of The Problem

To give a more specific direction of research and based on the restriction of the formulation of the above problems of the problem to be studied are:

1. How the analysis of chemistry school textbooks based on BNSP ?
2. How the development innovative e-book ?
3. How the feasibility of the innovative e-book that results from the development of chemical bonding material based on BNSP criteria?
4. Does student motivation that use innovative e-book is higher than the use of a school textbook ?
5. Does student learning outcome that use innovative e-book is higher than the use of a school textbook ?

### 1.5 Research Purposes

The objectives of this study are as follows:

1. Knowing the analysis school textbooks.
2. Knowing the development innovative e-book.
3. Knowing the feasibility of innovative e-book that results in the development of chemical bonding material.
4. Knowing whether student motivation that uses innovative e-book is higher than the use of a school textbook.
5. Knowing whether student learning outcomes that use innovative e-book is higher than the use of a school textbook.

## 1.6 Benefits of Research

The benefits of this research include:

1. Innovative e-book on chemical bonding material in this study can be used as reference material e-book development in Indonesia.
2. Innovative e-book on chemical bonding material in this study is expected to increase students' motivation.
3. Innovative e-book on chemical bonding material in this study is expected to improve student learning outcomes.

