

CHAPTER I

INTRODUCTION

1.1 Background

The development of innovative learning material with active learning and multimedia is very important to help student of senior high school in their learning process. Innovative learning material expected can motivated students and also can support the students to be more active in the learning activity. The innovation is conducted to provide standard learning material for senior high school students to make it easy to learn and to improve student's competence.

Education is a container that serves to prepare human resources who have competence in performing the functions of life. The education system should not be separated from changes that occur in various areas as a result of globalization. The rapid development of science and technology today can have a significant influence on the world of education. All the components of education are expected to adapt so did not experience gaps in dealing with the advancement of age. In an effort to educate the nation, hence improving the quality of education becomes very important for sustainable development in all aspects of human life. The national education system continues to be developed in accordance with the needs and developments at the local, national, and global (Mulyasa, 2004).

Sutama (2008) states, in line with efforts to improve the quality of education, learning innovation is one thing attention besides supporting facilities learning. Learning innovation and integration character education will be given the opportunity improve the quality of education and develop in accordance with the national character of culture in Indonesia (Situmorang, 2013). Where the use of technology information for learning have also been encouraging learning shifts from conventional learning to independent learning so learning impression remembered by students (Tompkins, 2006).

The need for the new atmosphere on learning activities on chemical subject expected to make the students materially become active in learning, so that able to improve student achievement (Siregar and Parera, 2013). One effort that can be done by teachers to achieve the national goal is to developing teaching materials into various form material includes a wide range of teaching material. The learning material has many form and variation to develop teaching materials of teacher required to continue - constantly improving ability.

If you do not have the ability developing teaching materials are varied, teachers will be stuck in learning situations monotonous and tend to be boring for students (Hamdani, 2011).

As an educator, a teacher is not just to perform its role in presenting the material in front of the class to achieve the learning objectives fields studies which it is responsible, but also expected to have skills and competencies that can support the profession. The learning process in education generally involves the four main components, namely students, teachers, the learning environment and materials lesson. The fourth of these components affect students in achieving goals learning. Each student has a different ability levels seen from the aspect of perception, its knowledge in the field will be studied, learning motivation, learning skills, and goals of study. To improve student achievement, teachers are required to make more innovative lessons that encourage students to learn optimally, with independent learning in the classroom. Therefore, media learning to be effectively and selectively used in accordance with the principal topics that are taught. Innovative multimedia development in this study expected to help the problems in learning. So needed educational innovation, because innovation is a plan or pattern that can be used to build the curriculum, designing instructional materials and as director of learning activities within or outside the classroom. Innovation in education is often associated with the renewal that comes from creative thinking, finding, and modification that includes ideas and methods used to solve a problem of education (Riskin et al, 2006).

With educational innovation can make the student become more active in teaching learning process, because active learning involves not only experience doing something with the material learned but also reflection and dialogue, which can occur either alone or in a group (Rine, 2006).

According to Michael Prince (2004), active learning is defined as any instructional method that engages students in the learning process. In short, active learning requires students to do meaningful learning activities and think about what they are doing. While this definition could include traditional activities such as homework, in practice active learning refers to activities that are conducted in the classroom. The core elements of active learning are students' activity and engagement in the learning process. Active learning is often contrasted to the traditional lecture where students passively receive information from the instructor.

In presenting the material chemistry to become more attractive and friendly, a teacher must have the ability to design learning activities in such a way, for example by combining learning methods with the use of appropriate instructional media, giving rise to a passion and curiosity for student properties. Accordingly Suprayekti (2003), said that a teacher should have the skills to teach, manage the stages of learning, utilizing the method, using the media of learning, and able to manage time. The fifth case is an approach to teaching teachers to communicate measures for the achievement of learning objectives. Many objects that can be used as a media of learning, therefore, a teacher must be able to create learning media in accordance with the material being taught. Learning media become one of factors for interest in learning and learning success in achieving predetermined competencies. Learning media will be developed into a learning media based e-learning. According to Manihar and Andry (2014), the utilization of information technology, multimedia and e-learning for learning through online facilities have been able to push learning shift from conventional learning to independently learning so as to facilitate students to learn not only depends on lecture but it comes from yourself. E-learning is a learning process (learning)

use/exploit information and Communication Technology (ICT) as tools that can be available whenever and wherever needed, so as to come over the constraints of space and time (Sutanta, 2009).

According to Joice and weil in Nahadi (2010), innovation in education are often linked with the renewal that comes from the result of creative thinking, findings and modifications that make the ideas and methods that are used to address a problem of education. Educational innovations also include a plan or pattern that can be used to build learning instructional materials in the classroom or outside class including learning materials. Thus, innovation in the learning materials very urgent to implement so that the delivery of the material to be focused and able to support the achievement of competence of students in learning.

Therefore, it is necessary that learning can make students understand about the subject presented and can be applied in everyday life. Need a concrete attempt to design learning which gives ease to students in solving problems and guide students to associate of science in real life creatively (Giantcarlo and Slunt, 2004).

A good learning materials must be able to present the teaching material according to the demands of the curriculum, following the development of science and technology and can bridge the learning for competencies has been established can be achieved (Rosenberg, 2001).

Chemical materials in the learning materials should be systematic, complete, and easier to understanding, attract, motivate independent study and has additional material as appropriate to the characteristics of student enrichment. The research aims to produce innovative learning materials that will be developed in electronic and print form learning materials create a link to a video or animation or tutorial website that provides an active learning so the students make easier to receive and access lessons. The efforts to improve the quality of education are not

only dependent on the teacher factor, but many other factors are also influential to produce output or output quality teaching process. But in essence the teacher remains the key element of the most decisive, because the teacher is one of the main elements in the education system that greatly affects education. Learning chemistry requires the skills of a teacher so that students easily understand the material provided by the teacher. If the teacher is not teaching the student to master the strategy will be difficult to accept the subject matter perfectly. Teachers are required to conduct innovation and creativity in implementing the learning, so that student learning outcomes satisfactory. Based on this problem researchers intend to make innovation of teaching materials, in order to facilitate the students to understand the concepts learned. The development through innovation chemistry textbook learning materials are needed by using e-learning media that can improve quality of education. Chemistry is one of the disciplines of the natural sciences as one topic of chemistry lesson that studied in Senior High School is "Chemical Equilibrium". Based on the description, researchers are interested in doing some research and trying to develop innovative learning materials in learning chemistry. The development of innovative chemistry learning material is very important so can motivate student to learn and make the student active in the process of learning and teaching and would help the student to learn chemistry easily. So it is necessary to conduct research entitled **“The Development of Innovative Learning Material of Chemical Equilibrium with Active Learning and Multimedia”**.

1.2. Problem Identification

Based on the background of that which has been described previously, some problems can be identified as the following :

1. The arrangement of chemistry learning material on the topic of Chemical Equilibrium to order it is suited to the common curriculum.
2. Prepare an innovative chemistry learning material on the topic of Chemical Equilibrium in order the teaching and learning process can be proceeded optimum.
3. Make innovation on the chemistry learning material of Chemical Equilibrium in order the students can easily to study chemistry.
4. Standardize a developed learning material to meet the standard provided by *Indonesia Education National Standard* (Badan Standar Nasional Pendidikan).

1.3. Problem Formulation

Based on the background that has been stated previously, then the formulation of the problem in this study are:

1. How is the arrangement of chemistry topic Chemical Equilibrium to order it is suited to the common curriculum?
2. How to prepare an innovative chemistry learning material on the topic of Chemical Equilibrium in order the teaching and learning process can be proceeded optimum?
3. What kind of innovation can be made on to the learning material of Chemical Equilibrium in order the students can easily to understand chemistry?
4. How to standardize a developed learning material to meet the standard provided by *Indonesia Education National Standard* (BSNP)?

1.4. Problem Limitation

In order for this study did not deviate from the purpose of research, the problem in this study should be limited. From the formulation of this problem, so that limit the problem in this study are:

1. Arranging and developing the standard innovative learning materials on the topic of Chemical Equilibrium.
2. Preparation of innovative teaching materials developed from the general chemistry textbooks that used.
3. Analyze the student's opinion to the textbooks that used.
4. Teaching materials will be reviewed and revised by the chemistry lecturer and students in Chemistry Department to obtain the standard learning materials.

1.5. Research Objectives

The objective of this research is to develop an innovative learning material on the teaching of Chemical Equilibrium in the university. The specific objectives to be achieved in this study are:

1. To arrange of chemistry learning material topic Chemical Equilibrium to order it is suited to the common curriculum.
2. To prepare an innovative chemistry learning material on the topic of Chemical Equilibrium in order the teaching and learning process can be proceed optimum.
3. To know what kind of innovation can be made on to the learning material of Chemical Equilibrium in order the students can easily to study chemistry.
4. To standardize a developed learning material to meet the standard provided by *Indonesia Education National Standard* (Badan Standar Nasional Pendidikan).

1.6. The significance of Research

The advantages that were hoped from this research as the following:

1. For chemistry teacher can use teaching material as module to make an effective teaching and learning and to increase student's achievement.
2. For researcher, to develop and standardize the teaching material as module to be used of student.
3. For student who learns chemistry can understand the topic of Chemical Equilibrium easier, more attractive, and enjoyable.
4. For the next researcher, can contribute the ideas to do the other researcher.

1.7. The Operational Definition

Based on that explanation, the operational definition as the following:

1. Innovation are research activities, development, and engineering which aims at developing or applying the practical value and the context of the new science, or new ways to apply science and technology that already exists in the product or production process because Innovative for learning material here is a learning that is designed/composed by integrating new innovations in the learning with the goal of keeping students more easily understand the learning done. Innovation is a new breakthrough that is different from the ordinary (conventional) learning, such as the addition of the media in the process of learning, the formation of discussion groups and so on.
2. Innovative learning materials are a modification of material to meet attractive one. Said innovative because the user will experience the innovative and being active for example actively paying attention to images, pay attention to the writings of varying color or motion, sound, video and even animated films.

3. Materials are all materials (information, tools or text) that are arranged systematically, which shows the figure of the whole of the competence to be controlled by the learners and are used in the process of learning with the aim of planning and review of the implementation of the study.
4. *Indonesia Education National Standard* (Badan Standar Nasional Pendidikan) is an independent institution, professional, and independent mission to develop, monitor and evaluate the implementation of national education national standard.

