

## CHAPTER I INTRODUCTION

### 1.1 Research Background

Education problem is a complex problem in implementation involves various supporting elements that are interrelated, the lack of student learning outcomes. The players of education especially teachers must be competitive and work hard to improve the learning process. So low interest of students to be able to master the material chemistry taught by teachers in practice conventional methods are less well packed and less variable. The low yield of National examination in high school especially for chemistry subjects. According to Muhamed Ally Pieri Micelle (2009: 193), learning by using mobile learning make student learning becomes interesting and fun. The learning process will be effective when the students are in a state of happy and unhappy. The students will feel fear, worry, anxiety, feeling uncomfortable that can lead not optimal results when student learning is too forced (Eko Susanto, 2009: 19-20).

Accordingly, the application of mobile gaming as a learning media can be developed and utilized in accordance with the existing learning design, to create a new learning environment, effective, and enjoyable to facilitate the achievement of learning goals. Mobile Game "Brainchemist", the learning media of chemistry can be used as an alternative to chemical learning media fun and accessible. Mobile Game "M3PK" is adapted from the game Brainjiggle and the game BrainJuice that has been modified so that display just the relevant with chemical materials. Chemistry learning cannot be separated from definition of the learning and chemistry itself. Chemistry is the science of searching for answers to what, why, and how natural phenomena related to the composition, structure and properties, changes, dynamics, and energetics of substances. There are two points related, the chemical cannot be separated, chemistry as the products (chemical knowledge in the form of facts,

concepts, principles, laws, and theories) and chemistry as the process of scientific work (Mulyasa E., 2006: 132-133) .

Success in achieving the chemistry learning objectives is influenced by several factors. For example, teaching and learning strategies, methods and approaches to teaching and learning resources or learning media. The development of learning media, both for formal and non-formal education, a curriculum that applies is the primary reference that must be considered. In addition, ease of use, attractive and also usefulness must be considered. Criteria of good learning media ideally includes 4 main things (Mulyanta, 2009: 3-4), namely: the suitability or relevance, convenience, attractive, and usefulness. Products of learning media are developed to run on Android-based mobile phone.

Android is the operating system platform for mobile devices that is open source. Android has various advantages as software that uses computer code base that can be distributed openly (open source) so that the user can create a new application in it. Develop of mobile game "Brainchemist" using Eclipse Indigo. Eclipse is an IDE (Integrated Development Environment) to develop software and can run on any platform. The advantages of Eclipse that makes it popular is its ability to be developed by the user with a component called.

## **1.2 Problem Identification**

The problem of education is a major problem and cannot be separated from the various of supporting factors that are interrelated to measure whether the implementation is already running education leading to achievement of the goals of education itself or not. Along with the development of science and technology, in education including teacher as main implementers of education must be work hard to find what kinds of strategies that can enhance the learning process and which can make a positive contribution in education world, how to make the students more interesting and fun with the subject matter.

In the learning process of many components that affect learning outcomes include: substance or material being studied, learning strategies, teaching methods conducted, students and teachers as a learning subject. These components are interrelated to each other so that the weakening of one component will hamper the achievement of learning objectives optimally. (Sugandi,2004).

Based on the Report of the UN in 2010 (Puspendik,2010-B)results of the UN in 2010 high school students can be categorized into passed and remedial. From 1,522,156 participants followed the First National Exam, as many as 1,368,105 students (89.88%) passed or not to remedial , while the rest, or as many as 154,051 students (10.12%) stated repeat.

Although these results show the achievement of high school graduation percentage is pretty good, but when seen from the achievement of the average value of the UN are achieved, these results still need improvement.

Achievement of quality in teaching is the professional responsibility of a teacher to create a quality learning experience for students and guide students to achieve maximum learning results and a preliminary studies have been conducted by researcher that during the last 5 years SMAN1 Tebing Tinggi students not yet achieve mastery classically. Other information of researcher is the learning methods applied by the teacher of SMA N 1 Tebing Tinggi is good.

Teachers not only apply the lecture method, but also implement other learning methods such as discussions. However, in practice these methods are less well packed and less variable, so that students feel bored and less interested in following the teaching and learning activity. So subject matter cannot be understood as a whole and the student learning outcomes of students who obtained less than the maximum, especially in the matter of salt hydrolysis.

Model is a learning M3PK activity that exposes students to the practical problems as fundamental in the study or in other words, students learn through problems. M3PK can be defined as learning activities that emphasize the process of resolving the problems faced scientifically.

The characteristics of the implementation M3PK learning strategies include:

1. The implementation M3PK is a learning activity, meaning that the implementation of using M3PK is a student activity that must be done. Learning is not just expect students to listen, take notes, and then memorize the subject matter, but through students become active thinking, communicating, searching, and processing the data, and finally concluded.
2. Learning activities M3PK geared to resolve the problem. The implementation of M3PK puts the problem as a keyword from the learning process. That is, without any problems there can be no learning process.
3. Problem M3PK solving is done by using the scientific method is the process of scientific thinking both deductive and inductive conducted systematically and empirically (Retno,2010).

The method of problem solving is a way of teaching M3PK that stimulates and provides the opportunity for students to further their own initiative and are able to perform analysis and synthesis of the problems faced in order to obtain the solution ( Saptorini,2007) .

The use of using M3PK models aimed at high school students in learning . The use of this model is intended for in accordance with students' learning competencies that will be seen through the influence of student learning outcomes. Based on the previous description , this study aimed at finding out if the magnitude of the effect and influence of the use of M3PK model of the high school class of student's achievement on the teaching of salt hydrolysis in SMA N 1 Tebing Tinggi .According to Muhamed Ally Pieri Micelle (2009: 193), learning by using mobile learning make student learning becomes interesting and fun. The learning process will be effective when the students are in a state of happy and unhappy.

The students will feel fear, worry, anxiety, feeling uncomfortable that can lead not optimal results when student learning is too forced (Eko Susanto, 2009: 19-20). Accordingly, the application of mobile gaming as a learning media can be developed and utilized in accordance with the existing learning design, to create a

new learning environment, effective, and enjoyable to facilitate the achievement of learning goals. Mobile Game " M3PK ", the learning media of chemistry can be used as an alternative to chemical learning media fun and accessible.

By using of M3PK is adapted from the game M3PK and the game BrainJuice that has been modified so that display just the relevant with chemical materials. Chemistry learning can not be separated from definition of the learning and chemistry itself. Chemistry is the science of searching for answers to what, why, and how natural phenomena related to the composition, structure and properties, changes, dynamics, and energetics of substances.

There are two point related, the chemical can not be separated, chemistry as the products (chemical knowledge in the form of facts, concepts, principles, laws, and theories) and chemistry as the process of scientific work (Mulyasa E., 2006: 132-133) .Success in achieving the chemistry learning objectives is influenced by several factors. For example, teaching and learning strategies, methods and approaches to teaching and learning resources or learning media. The development of learning media, both for formal and non-formal education, a curriculum that applies is the primary reference that must be considered. In addition, ease of use, attractive and also usefulness must be considered. Criteria of good learning media ideally includes 4 main things namely: the suitability or relevance, convenience, attractive, and usefulness.

### **1.3 Problem Statement**

Problem of the study formulated as follows:

- What is the influence of M3PKStrategies to improve student's achievement on the teaching of salt hydrocarbon?
- Is there any significant different of student's achievement between M3PK and conventional method?

#### 1.4 Research Objectives

The objectives of this research are:

- Knowing the influence of implementation of the M3PK to student achievement on the teaching of hydrocarbon
- Knowing the significant difference of student's achievement between M3PK and conventional method on teaching-learning process of salt hydrocarbon

#### 1.5 Specific Objectives

The specific of this research are:

- To investigate the influencing of M3PK method
- To investigate the significant difference between M3PK method and conventional method on teaching-learning process of salt hydrocarbon
- The result of this development is a product of the using M3PK as a chemistry learning media for Senior High School in hydrocarbon
- The products of mobile game of M3PK a learning media is apk application form that can be run with android based mobile phone. Mobile game "Brainchemist" contain materials or matters, and the discussion of hydrocarbon
- The development research follows of the model. The phase in this research are phase analysis (analysis of curriculum, analysis of media creation benefit), the design phase (mobile game design and preparation of assessment instruments), stage of development (manufacture of mobile games and review by supervisors, material experts, IT experts, and peer reviewers), the implementation phase (mobile game used by teachers and students) and the evaluation phase (evaluate the quality of learning media).
- The implementation of using M3PK contain materials or matters, and the discussion of hydrocarbon