

CHAPTER I

INTRODUCTION

1.1 Background of the Study

The development of information systems and technology are now growing rapidly (Supriyanto, 2005). Along with the development of these technologies, an information is not only accessible by using a PC or laptop media, but it can be accessed only by using a phone that people often call it a smartphone.

A smartphone is supported with a default operating system, one of the operating systems that is growing now is the android (Safaat, 2011). Android is an operating system for smartphones which is developed by Google. The open sources have the impact on the increasing number of users and developers significantly (Huda, 2012).

Physics is one of sciences that studies the universe. Due to the implementation of physics are found in everyday life, physics becomes the basis for future technological mastery (Indrajit, 2009). Conceptually, physics contains many formulas that make students are not interested to learn or memorize and understand it. Moreover, the complicated questions cause physics becomes the difficult subject (Sugiharti, 2005). Because of the reason, presenting the materials and physics formulas attractively and colorful with additional video animation are attempted to increase students' interest in learning physics and to make the students more understand the materials.

Therefore, the author raised the title "Physics Formula Application Based on Mobile Android for Tenth Grade High School".

1.2 Problem Statement

The research question of this study based on the background is "How to present an educative application based on mobile android that contains physics formulas attractively so that the materials will be easier to be understood by the students?"

1.3 Limitation of the Study

To avoid any deviation or widening of the principal problems in creating this study, the researcher gave limitation issues, such as:

1. Physics formulas derived from tenth grade high school materials which are *Vektor, Gerak dalam Satu Dimensi, Gerak Melingkar, Dinamika Gerak, Alat Optik, Kalor, Elektro dinamika, Elektro magnetik.*
2. The materials are corresponding with Indonesian curriculum.
3. The display contains the summaries of the materials, the formulas with the descriptions, questions, video animations of the formulas, exercises, and evaluation to measure the students' level of understanding the material.
4. The applications for smartphones with Android OS which has a maximum width of 5 inch screen.

1.4 Purpose of the Study

The purpose of this study is to present an educative application based on mobile android that contains physics formulas attractively so that the materials will be easier to be understood by the students.

1.5 Benefit of the Study

There are some benefits of this study, such as:

1. For the users

This application helps users who are high school students to access the formulas they want to use quickly without having to look for it in the book, to help the students to study, and to increase students' understanding. Besides, the examples of questions make the students understand the implementation of the formula better.

2. For the researcher

The benefits for the researcher is able to develop the science and knowledge that is gained from the lectures on animation design and develop new science and knowledge that is not found on the lecture which is to build android application itself.

1.6 Writing Systematical

Systematic processes of final project that load paraphrase by majority contents of final project are:

CHAPTER I INTRODUCTION

This chapter contains a description of the background, limitation of the study, objective of the study, benefit of the study, the benefits of research, and systematic writing.

CHAPTER II LITERATURE REVIEW

Literature Review includes two parts, there are research study and underlying theory. In the research study contains results of previous research related to research to be conducted. Whereas underlying theory consists of explanation definitions support the research.

CHAPTER III RESEARCH METHOD

This chapter describes the time and place of the research, tools and materials, and plot. From the plot of the research, it can be seen what have been done to obtain the data and methods of analysis.

CHAPTER IV RESULT AND DISCUSSION

This chapter presents the results and discussion of the research. The data are presented in tables, images or graphics. The discussion presents an analysis of the data obtained, including a description of the results of this study compared with the results of other studies that have been done before.

CHAPTER V CONCLUSIONS AND SUGGESTION

The closing chapter contains conclusions and suggestion which

summarize what is obtained in the research and described in the results and discussion section.