UNIVERSITI TEKNOLOGI MARA

PROTOTYPE DESIGN OF MOBILE LEARNING APPLICATION OF OPERATING SYSTEM COURSE BASED ON STUDENTS' PREFERRED LEARNING STYLE

NOR HANANI BT MOHD YUSOFF

IT Project submitted in partial fulfillment
of the requirements for the degree of

Master of Science in Information Technology

Faculty of Computer and Mathematical Sciences

July 2015

ABSTRACT

Mobile technology provides new way for students to practice independent learning and break the common way traditional learning process which usually happened in a classroom setting. The advancement and popularity of mobile technology has leads to the various mobile learning applications that act as a tool of learning among students. However, it is important to ensure the design of the mobile learning application suit with the preferred learning styles of the students because it could promote students motivation and encourages them to learn through mobile application. In Ungku Omar Polytechnic, one of the courses offered is operating system and students' achievement towards the course is less encouraging. Advancement of mobile device technology and higher usage among students lead to an initiative design a prototype of mobile learning application of operating system course at Ungku Omar Polytechnic. Before the design phase started, the students' preferred learning style was acquired first and based on the result of the questionnaires, the most preferred learning style while learning the operating system course is visual. Once the preferred learning style has been obtained, the functional and design requirements have been gathered through an interview with students who are registering the course. Result from the interview has been analyzed and the prototype of mobile learning application of operating system course has been designed by using wireframe tool namely as Pencil. At the end of the study, feedback from students has been gathered to get their comments and suggestion to improve the function and design of prototype of mobile learning application of operating system course.

ACKNOWLEDGEMENT

First of all, all praises to Allah for giving me strength to complete this research. Thousand thanks to my supervisor Dr. Fariza Hanis Abdul Razak for her guidance, motivation, thoughtful comments and encouragement throughout the semester. Not to forget to my Research Methodology's lecturer, Dr. Emma Nuraihan Mior Ibrahim for her valuable knowledge and guidance that has been shared during proposal phase. Special thanks dedicated to my husband Mohd Syukri Sulaiman and my family for tremendous support and patience. My appreciation also goes to all other lectures and fellow friends who had share the journey of this Master in Information Technology programme. Not to forgot, the students of Ungku Omar Polytechnic who involved and voluntarily participate in this study.

Thank you so much and I pray Allah bless all of you.

TABLE OF CONTENTS

	Page
AUTHOR'S DECLARATION	**i**
ABSTRACT	**ii**
ACKNOWLEDGEMENT	**iii**
TABLE OF CONTENTS	**iv**
LIST OF FIGURES	**viii**
LIST OF TABLES	**x**
CHAPTER ONE : INTRODUCTION	1
1.1 Introduction	1
1.2 Research Background	2
1.2.1 Learning Style	2
1.2.2 Operating System Course	3
1.2.3 Mobile Learning Application	3
1.3 Problem Statement	4
1.4 Aim	4
1.5 Research Questions	5
1.6 Objectives	5
1.7 Project Scope	5
1.8 Research Significance	6
1.9 Research Design	6
1.10 Report Outline	7

CHAPTER TWO : LITERATURE REVIEW 8

2.1 Introduction 8

2.2 Learning Theory 8

2.3 Learning Styles Dimension 9

2.4 Learning Style's Model And Inventory 10

2.4.1 Kolb's Experiential Learning Model 10

2.4.2 Felder-Silverman Learning Style 10

2.4.3 VARK Model 11

2.4.4 C.I.T.E Learning Style Inventory 12

2.5 Definition Of Mobile Learning 13

2.6 Definition Of Mobile Learning Application 13

2.7 Reviews On Existing Mobile Learning Application 14

2.7.1 Learn HTML Course 14

2.7.2 My Open Courses 18

2.7.3 Coursera - Learn Programming 20

2.7.4 Comparison of Mobile Learning Application 22

2.8 Mobile Learning Application's Framework 23

2.9 Design Issues In Mobile Application 24

2.10 User Centered Design 25

2.11 Persona 27

2.12 Types Of Prototype Based on User Centered Design 28

2.12.1 Design Guideline for Mobile Application 29

CHAPTER THREE : RESEARCH METHODOLOGY 31

3.1 Introduction 31

3.2 Research Methodology 31

3.2.1 Phase 1: Review of Literature 32