

**UNIVERSITITEKNOLOGI MARA**

**Evaluating Faculty Science Computer &  
Mathematics (FSKM) 'Sistem Permohonan  
Surat Pelajar' Application Using Cognitive  
Walkthrough**

**UMMIRAL BINTINORDIN**

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**

January 2016

## ABSTRACT

Mobile application for 'Sistem Permohonan Surat Pelajar' (SPSP) are use to ease student to request formal letter and view the status of letter they requested from academic office. Students can save their time by using the SPSP application and do not need directly go to academic office to apply letter and check if the letter they requested is ready or not. The interface of SPSP application should be easy to use where students will be able to retrieve the content and not only focus on the interaction with the application. The usefulness of mobile devices has increased greatly in recent years allowing users to perform more tasks in a mobile context. This increase in usefulness has come at the expense of the usability of these devices in some contexts. Therefore, usability plays an important role in the success of every application. Cognitive walkthrough is a technique for evaluating the design of a user interface, with special attention to how well the interface supports exploratory learning, such as first-time use without formal training. Early versions of the walkthrough method relied on a detailed series of questions, to be answered on paper or electronic forms. However, based on interview that conducted with the developer SPSP application said that very important to know the feedback from viewers of students FSKM itself about performance of this application in terms of effectiveness, efficiency and error while navigate this application. Furthermore, usability testing has not been conducted since develop this application. The objectives of this project is to evaluate the usability problem of FSKM 'Sistem Permohonan Surat Pelajar' application using usability evaluation method and provide recommendations to improve user interface according to identified in this application according to the identified usability problem. This project specifically focuses on mobile application users from different background using cognitive walkthrough method. Usability testing was conducted on five (5) participants where they had been interviewed and performed series of tasks to identify the usability problem of SPSP application. The results show that interface design of SPSP application is unattractive and participants were having difficulties in performing the tasks that being assigned. Certain materials and content is not accessible and important information not been included in the SPSP application. The deliverables of this project would assist the developer of SPSP application to identify usability problems that exist and provide a guideline for him to improve the quality of design. Through usability testing, the usability problems can be identified and recommendations can be suggested to improve the user interface design for the application.

**Keyword: usability, human computer interaction (HCI), cognitive walkthrough, SPSP application, interface design.**

## ACKNOWLEDGEMENT

*"In the name of ALLAH S. W. T. the Most Beneficent and Most Merciful"*

Alhamdulillah, praise to Allah for giving me the patience and good health through the process completing this project. Deep in my heart, I know and believe that He always hears my prayer. To Him only and that I depend and have faith in. I would like to acknowledge people who are involved in giving helps and supports throughout my project.

Firstly, I would like to express my sincere gratitude and warmest thanks to my supervisor, Madam Jamaliah Taslim for all of her kindness, fullest commitment, knowledge, advices, utmost cooperation, an indefatigable assistance in most generous time and professional guidance as an academic advisor and consideration to me in order to conduct and completing of this project. My special thanks and appreciation goes to my father, \_\_\_\_\_ and my mother, \_\_\_\_\_ for their support and encouragement as well as my sisters and brothers for all supports. Last but not least, thank you to all my classmates (CS770) that helped me directly or indirectly throughout finishing this IT project for attention to detail, genuine suggestions and experience. Only ALLAH can reciprocate towards their kindness.

Thank you.

# TABLE OF CONTENT

## **Contents**

STUDENT ' S DECLARATION

ABSTRACT

**ACKNOWLEDGEMENT**

**TABLE OF CONTENT**

**LIST OF FIGURES**

**LIST OF TABLES**

**LIST OF ABBREVIATION**

## **CHAPTER ONE : INTRODUCTION**

1.1 Background of Project

1.2 Problem Statement

1.3 Research Questions

1.4 Objectives

1.5 Scope

1.6 Significance of Study

1.7 Report Outline

## **CHAPTER TWO : LITERATURE RE VIEW**

2.1 Introduction

2.2 Sistem Pennohonan Surat Pelajar (SPSP)

2.3 Online Application System

2.4 Human Computer Interaction

2.5 HCI and Mobile Devices

2.6 Usability

2.6.1 Eason's Framework of Usability

2.7 Usability Evaluation

2.7.1 Usability Evaluation Methods

2.8 Usability Testing	18
2.8.1 Scenario in Context of Usability Testing	19
2.8.2 Usability Testing Technique	19
2.8.3 Usability Testing for Mobile Application	20
2.9 Usability in Mobile Application	21
2.9.1 Limitations for Mobile Application	23
2.10 Model to Solve the Usability Problem	24
2.11 Cognitive Walkthrough Approach	24
2.11.1 Cognitive Walkthrough Procedure	25
2.11.2 Simplified Cognitive Walkthrough Method	27
2.12 Rules or Guidelines for Designing Application	27
2.13 Advantage and Disadvantage Using Usability Evaluation	28
2.14 Summary	29

## CHAPTER THREE : METHODOLOGY

3.1 Introduction	30
3.2 Research Methodology	30
3.2.1 Phase 1 : Problem Identification and Planning	32
3.2.2 Phase 2: Evaluation and Data Collection	32
3.2.2.1 Usability Testing Process	33
3.2.3 Phase 3: Analyszing Data	37
3.2.4 Phase 4: Documentation	37
3.3 Summary	38

## CHAPTER FOUR: ANALYSIS AND FINDING

4.1 Introduction	39
4.2 Result for completing task and achieving objectives	39
4.3 Result Usability Evaluation Session	40
4.4 Content Analysis	54
4.4.1 Respondent Characteristics result	54
4.4.2 Analysis result	54
4.5 Recommendations	57
4.5.1 Usability Problems and Recommendation	57