

DEVELOPMENT OF MOBILE MESSAGING APPLICATION USING
WIFI TECHNOLOGY: A STUDY IN PROMOTING CLASSROOM
PARTICIPATION AND INTERACTION

A thesis submitted to the Graduate School in partial
Fulfillment of the requirement for the degree
Master of Science (Information Technology)
Universiti Utara Malaysia

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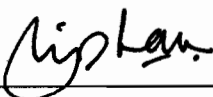
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ABSTRAK

Objektif kertas kerja ini adalah untuk menjalankan penyelidikan bagi mempromosikan penglibatan dan interaksi pelajar dan pensyarah di dalam bilik kuliah dengan menggunakan aplikasi penghantaran mesej secara mobil. Dengan menggunakan aplikasi penghantaran mesej ini, pelajar dapat menghantar mesej kepada pensyarah melalui peralatan mobil mereka. Rintangan yang menghalang interaksi antara pelajar dan pesyarah telah dibentangkan berdasarkan hasil daripada kaji selidik dan kajian pemerhatian. Hasil daripada ujikaji menunjukkan bahawa penggunaan aplikasi penghantaran mesej boleh mempromosikan penglibatan pelajar di dalam kuliah dan mempromosikan interaksi antara pelajar dan pensyarah. Penggunaan aplikasi haruslah disertakan dengan panduan terperinci dan dikuatkuasakan untuk memastikan kejayaan dalam mempromosikan interaksi antara pelajar dan pensyarah.

ABSTRACT

The goal of this qualitative paper was to conduct a study to promote classroom participation and interaction using a mobile messaging application that enable students to send messages to instructor using mobile devices. The study focused on the interaction between instructor and students. Barriers and challenges to students and instructor interaction are outlined based on literature reviews and observation studies. Results from the experiment shows that mobile messaging application promotes participation and increases interaction between students and instructor. Clear guidelines on use of mobile messaging application in classrooms must be drafted and enforced for successful implementation in promoting students and instructor interaction.

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TABLE OF CONTENTS

	Page
PERMISSION TO USE	I
ABSTRACT (BAHASA MALAYSIA)	II
ABSTRACT (ENGLISH)	III
ACKNOWLEDGEMENTS	IV
LIST OF TABLES	VIII
LIST OF FIGURES	VI
LIST OF ABBREVIATIONS	VII
CHAPTER 1: INTRODUCTION	
1.1 Preface	1
1.2 Problem Statement	3
1.3 Research Objectives	6
1.4 Research Questions	6
1.5 Scope of Study	7
1.6 Limitations of Study	7
1.7 Research Outcomes	7
1.8 Expected Contributions of Research	8
1.9 Organizations of the Report	8
1.10 Summary	9
CHAPTER 2: REVIEW OF LITERATURE	
2.1 Introduction to Interaction in Education	10
2.2 Introduction to Mobile Computing	12
2.3 Introduction to Mobile Messaging System	13
2.4 Mobile Learning in Higher Education Institutions	18
2.5 Case Studies of Mobile Learning in Higher Education Institutions	22
2.5.1 Case Study 1: The ActiveClass project: Experiments in Encouraging Classroom Participation	22
2.5.2 Case Study 2: Using a Wireless Pocket PC-based Classroom Response System	22
2.5.3 Case Study 3: Promoting Interaction in Large Classes with Computer-Mediated Feedback	23
2.5.4 Case Study 4: Pedagogical Advantages of Ubiquitous Computing in a Wireless Environment	24
2.5.5 Case Study 5: Small-Scale Rollout: Middlebury College	24
2.5.6 Case Study 6: Full-campus cloud: Dartmouth College	25
2.6 Computer Network Services in Multimedia University	25
2.6.1 Local Area Network (LAN)	25
2.6.1.1 LAN in Malacca Campus	26
2.6.1.2 LAN in Cyberjaya Campus	27

2.6.2	Wide Area Network (WAN)	28
2.6.2.1	WAN in Malacca Campus	28
2.6.2.2	WAN in Cyberjaya Campus	29
2.6.3	Wireless Networks	30
2.6.3.1	Wireless Coverage Area	30
2.6.3.2	List of Access Point Location for Outdoor Wireless Coverage Area	31
 CHAPTER 3: RESEARCH METHODOLOGY		
3.1	Identification of Research Area	34
3.2	Conduct Literature Review	34
3.3	Product Research Proposal	35
3.4	Develop Mobile Messaging Application Prototype	35
3.5	Develop Experiment Test Plan	36
3.6	Conduct Pilot Test	37
3.7	Conduct Experiment and Record Data	37
3.8	Compile and Summarize Findings of Testing	38
3.9	Draw Conclusion and Suggest Recommendations	38
3.10	Product Proceeding Paper and Final Report	38
 CHAPTER 4: DEVELOPMENT AND IMPLEMENTATION OF MOBILE MESSAGING APPLICATION PROTOTYPE		
4.1	Introduction	42
4.2	Introduction to J2ME	43
4.2.1	J2ME Configurations	45
4.2.2	J2ME Virtual Machine	45
4.2.3	J2ME Profiles	46
4.3	Development of Mobile Messaging Application	47
4.3.1	Mobile Messaging Application Architecture	48
4.3.2	Hardware Requirements	48
4.3.3	Software Requirements	50
4.3.4	Development Software Tools	50
4.3.5	Mobile Messaging Application Design - Program Flow	51
4.4	Implementation of Mobile Messaging Application	54
4.4.1	Starting the mobile messaging server application	55
4.4.2	Starting the mobile messaging client application	56
4.4.3	Client Application - Text feedback	58
4.4.4	Server Application – Text received	60

CHAPTER 5: RESEARCH EXPERIMENT, RESULTS AND INTERPRETATION

5.1	Research Setting	62
5.1.1	University Profile	62
5.1.2	Instructor Profile	62
5.1.3	Classroom Profile	65
5.1.4	Experiment Setting	66
5.2	Research Results and Interpretation	66
5.2.1	Observation on Interaction	66
5.2.2	Messaging Application Feedback Experiment	69
5.2.3	Students' Survey Results	70
5.2.4	Instructor's Perception on Interaction	76

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1	Conclusion	78
6.2	Recommendations and Future Work	80

REFERENCES	82
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APPENDIX A: OBSERVATION COLLECTION FORM	89
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APPENDIX B: EXPERIMENT SURVEY	90
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LIST OF TABLES

Table 2.1: Mobile Messaging vs. Desktop Email vs. Traditional Paging	14
Table 2.2: List of Indoor Wireless Coverage Area (Malacca Campus)	31
Table 2.3: List of Indoor Wireless Coverage Area (Cyberjaya Campus)	32
Table 5.1: Summary of lecture demographic data	65
Table 5.2: Gender	71
Table 5.3: Messaging application provides convenience for students to transmit feedback to instructor	71
Table 5.4: Messaging application increased participation and involvement	72
Table 5.5: Instructor answers most of the questions/feedback sent.	73
Table 5.6: Messaging technology provides good opportunity to interact with instructor	74
Table 5.7: Messaging application prototype is easy to use	74
Table 5.8: Participants can use the messaging prototype with little or no technical difficulties	75
Table 5.9: Messaging system prototype provide clear and understandable instructions	76

LIST OF FIGURES

Figure 2.1: The overview of the LAN network (Malacca)	26
Figure 2.2: The overview of the LAN network (Cyberjaya)	27
Figure 2.3: The overview of the WAN network (Malacca)	28
Figure 2.4: The overview of the WAN network (Cyberjaya)	28
Figure 3.1: Research method phases	40
Figure 3.2: Prototyping phases	41
Figure 3.3: Proposed messaging application message flow over wireless networks	41
Figure 4.1: Java 2 Platform	44
Figure 4.2: Mobile messaging application architecture	48
Figure 4.3: Messaging application message flow over wireless networks	53
Figure 4.4: Mobile messaging application main screen	55
Figure 4.5: Request for network service	56
Figure 4.6: Server in waiting connection mode	56
Figure 4.7: Mobile messaging application main screen	57
Figure 4.8: Student feedback screen	58
Figure 4.9: Student's view on transmitting feedback	59
Figure 4.10: Student's view on feedback confirmation	59
Figure 4.11: Instructor view on students' feedbacks	60

LIST OF ABBREVIATIONS

3G	Third Generation
AOL	America Online
ATM	Ashynchronous Transfer Mode
CADP	Center of Affiliate and Diploma Programme
CFS	Computer Feedback System
CITS	Center for Information Technology Services
CLDC	Connected Limited Device Configuration
CVM	C Virtual Machine
DSL	Digital Subscriber Line
GSM	Global System for Mobile
HP	Hewlet Packard
HTTP	Hypertext Transfer Protocol
IEEE	Institute of Electrical and Electronics Engineers
IGX	ISDN Gateway Interface
IM	Instant Messaging
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
J2EE	Java 2 Enterprise Edition
J2ME	Java 2 Micro Edition
J2SE	Java 2 Standard Edition

JSR	Java Specification Request
JVM	Java Virtual Machine
KVM	K Virtual Machine
LAN	Local Area Network
LCD	Liquid Crystal Display
MIDP	Mobile Information Device Profile
MMS	Multimedia Message Service
MMU	Multimedia University
MP3	Media Player 3
MSN	Microsoft Network
MSU	Montclair State University
OS	Operating System
PC	Personal Computer
PDA	Personal Digital Assistant
PDAP	Personal Digital Assistant Profile
PIX	Private Internet Exchange Firewall
POSE	Palm OS Emulator
PRC	Palmpilot resource file
RIM	Research in Motion
RMIP	Remote Method Invocation Profile
SDSL	Symmetric Digital Subscriber Line
SMS	Short Messaging Service
SMSE	Scenario, Message, Synchronization, Evaluation
TCP/IP	Transmission Control Protocol/Internet Protocol
TMNET	Telekom Malaysia Network

UCD	User Centered Design
UDP	User Datagram Protocol
VPN	Virtual Private Network
WAN	Wide Area Network
WAP	Wireless Application Protocol
WLAN	Wireless Local Area Network

CHAPTER 1

INTRODUCTION

1.1 Preface

Mobile devices offer a lot of convenience to users and are known to increase productivity when users are away from their workplace. Mobile devices limitations are mainly its limited battery life, smaller screens compared to desktop computers and Internet connection speed is currently low. Besides this, mobile devices are also less robust compared to desktops, out of date very quickly, poor security level and upgrade difficulties (Satyanarayanan, 1996; Yuen & Yuen, 2005).

In view of the current limitations of mobile devices however, going mobile is increasingly becoming more common as more people are buying cell phones and other mobile devices. Mobile computing devices, also known as portable electronic tools, for example cell phones, personal digital assistants (PDAs), laptops and tablet PCs are changing our day-to-day lives by allowing us to communicate with others and accessing wide array of information no matter where we are.

Evans, Martin and Poatsy (2006) listed down six main reasons for the need to get mobile devices. They are the need to communicate with others, accessing

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