

## TABLE OF CONTENTS

Acknowledgements	iii
Abstract	iv
Abstrak	vi
Table of Contents	ix
List of Tables	xx
List of Figures	xxiv

### CHAPTER 1: PRESENTATION OF THE PROBLEM

1.1	Introduction	1
1.2	Statement of the Problem	4
1.3	Background of the Study	15
1.4	Conceptual Framework	19
1.5	Research Questions	29
1.6	Purpose of the Study	31
1.7	Significance of the Study	35
1.8	Operational Definitions of the Terms used in this Study	40

### CHAPTER 2: REVIEW OF RELATED LITERATURE

2.1	Introduction	43
2.2	The Internet and its Applications in Instruction	44
	2.2.1 Computers and the Internet in the Malaysian Education System	55
	2.2.1.1 Development of the Internet in Teacher Education in Malaysia	57

2.3	Innovation in Teacher Education in Malaysia	59
2.3.1	Theories of Innovation	62
2.3.2	Models of Change	65
2.3.2.1	Lewin's Classic Change Model	65
2.3.2.2	Resistance to Change	66
2.4	Information Technology and Internet Competency	67
2.5	Integration of the Internet in Education	70
2.5.1	Rationale for Integration of the Internet in Teacher Education	72
2.5.2	Methods of Integrating the Internet in Instruction	73
2.5.3	Direct and Indirect Modes of Internet Integration	75
2.5.4	Problems associated with the Integration of the Internet in Instruction	78
2.5.5	Pedagogical Considerations of Internet Integration	81
2.5.6	Models for Integration of the Internet in Instruction	83
2.6	Factors that affect Internet Integration	86
2.6.1	Attributes of Network Adopters and Internet Integration	88
2.6.2	Self-Perceived Internet Competency and Internet Integration	94
2.6.3	Gratifications derived from Using the Internet and Internet Integration	99

2.6.4	Attitudes towards Internet Innovation and Internet Integration	103
2.6.5	Internet Access at the Workplace and Internet Integration	109
2.6.6	Home Access to the Internet and Internet Integration	112

### CHAPTER 3: RESEARCH DESIGN, INSTRUMENTATION AND PROCEDURES

3.1	Introduction	116
3.2	Research Design	117
3.3	Sampling	118
3.4	Design of Instruments	119
3.5	Instrumentation	124
3.5.1	Stages of Concern towards Internet Instrument (SOCI)	126
3.5.1.1	Validity and Reliability of the SOCI	130
3.5.2	Gratifications Derived from Utilizing the Internet Questionnaire (GUIQ)	133
3.5.2.1	Validity and Reliability of the GUIQ	135
3.5.3	Internet Integration Checklist (IIC)	136
3.5.3.1	Reliability and Validity of the IIC	139
3.5.4	Self- Evaluation of Internet Competency Checklist	141
3.5.4.1	Validity and Reliability of the SICC	143
3.5.5	Internet Use Questionnaire (IUQ)	144
3.5.5.1	Validity of the IUQ	147

3.5.6	Semi-Structured Interview Schedule (SIS)	149
3.5.6.1	Interview Procedures	150
3.5.6.2	Validity and Reliability of the Interview Transcripts	151
3.5.7	Case Studies	152
3.5.8	Document Evidence Of Internet Integration	154
3.6	Procedures	154
3.7	Data Collection and Analyses	155
CHAPTER 4: RESULTS, INTERPRETATIONS AND DISCUSSIONS		
4.1	Introduction	158
4.2	Description of Sample of Teacher Training Colleges	160
4.3	Description of Sample of Teacher Trainers	161
4.4	Gender and Age of Teacher Trainers	161
4.5	Internet Use of Teacher Trainers	162
4.6	Stages of Integration of the Internet into the Teacher-Training Curriculum	163
4.7	Attributes of Early Adopters and Late Adopters	165
4.7.1	Educational Background	166
4.7.2	Teaching Experience	167
4.7.3	Computer Experience	168
4.7.4	Internet Experience	169
4.7.5	Home Access to the Internet	171
4.7.6	Access to Internet in the Workplace	172
4.7.7	Indirect Use of the Internet	173
4.7.8	Direct Use of the Internet	174

4.8	Attitudes toward Internet Innovation, Self-Perceived Competencies in Internet Use and Gratifications derived from Use of the Internet	176
4.8.1	Attitudes of Early and Late Adopters towards Internet Innovation	176
	4.8.1.1 Internal Concerns	176
	4.8.1.2 External Concerns	179
4.8.2	Self-Perceived Internet Competencies	181
4.8.3	Gratifications Derived from Use of the Internet	183
4.9	Relationships between Variables in the Study	186
4.9.1	Relationship between Early and Late Adopters in Educational Background and Internet Integration	186
4.9.2	Relationship between Early and Late Adopters in Teaching Experience and Internet Integration	188
4.9.3	Relationship between Early and Late Adopters in Computer Experience and Internet Integration	190
4.9.4	Relationship between Early and Late Adopters in Internet Experience and Internet integration	191

4.9.5	Relationship between Early Adopters and Late Adopters in Home Access to the Internet and Internet Integration	194
4.9.6	Relationship between Early Adopters and Late Adopters in Access to the Internet at the Workplace and Internet Integration	196
4.9.7	Internal Concerns of Early Adopters and Late Adopters	198
4.9.8	External Concerns of Early Adopters and Late Adopters	201
4.9.9	Self-Perceived Internet Competencies of Early Adopters and Late Adopters	204
4.9.10	Gratifications Derived from Use of the Internet by Early Adopters and Late Adopters	206
4.9.11	Stages of Integration of the Internet into Instruction of Early Adopters and Late Adopters	209
4.9.12	Conclusion for the Quantitative Section of the Study	210
4.9.13	Introduction to the Qualitative Section of the Study	211
4.10	Personal and Professional Use of the Internet	214
4.10.1	Personal Use of Newsgroup and Listserv Applications	214

4.10.2	Professional Use of Newsgroup and Listserv Applications	216
4.10.3	Personal Use of WWW Application	218
4.10.4	Professional Use of WWW Application	220
4.10.5	Personal Use of E- Mail Application	227
4.10.6	Professional Use of E- Mail Application	229
4.10.7	Frequency of Usage of the WWW and E-Mail Applications	236
4.11	Instructional Use of the Internet	239
4.11.1	Perceived Importance of Integrating the Internet into the Education Syllabus	240
4.11.2	Use of the Internet for Preparation of Lessons	242
4.11.3	Directing Students' Use of Internet Applications	247
4.11.4	Directing Students' Frequency of Usage of Internet Applications	255
4.11.5	Ways in which Early and Late Adopters are Designing Internet-Based Activities with the WWW and E-mail Applications	258

4.11.5.1	Designing Research Activities via the WWW Application	258
4.11.5.2	Designing E-Mail Activities for Instruction and Academic Exchange	265
4.11.5.3	Designing Internet-based Activities for Students in Extra-Curricular Activities	269
4.12	Problems and Needs of the Early Adopters and Late Adopters in the Integration of the Internet in the Teacher-Training Curriculum	273
4.12.1	Problems faced by Early and Late Adopters in the Integration of the Internet in the Teacher-Training Curriculum	273
4.12.2	Needs of Early and Late Adopters for the Integration of the Internet into the Teacher-Training Curriculum	281
4.13	Conclusion for the Qualitative Section of the Study	286
4.14	Case Studies	287
4.15	Differences found between Early Adopter and Late Adopter in Detailed Case Studies	290
4.16	Conclusion	294



## CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1	Introduction	295
5.2	Summary of the Procedures	295
5.3	Summary of the Findings	297
5.3.1	Stages of Integration of the Internet into the Teacher-Training Curriculum	298
5.3.2	Attributes of Early and Late Adopters among the Teacher Trainers	299
5.3.3	Attitudes towards Internet Innovation, Self-Perceived Internet Competencies and Gratifications derived from Use of the Internet of Early and Late Adopters	300
5.3.4	Differences between Early and Late Adopters in Variables of the Study	304
5.3.5	Personal and Professional Use of Internet Applications and Frequency of Usage of Early and Late Adopters	308
5.3.6	Differences in the Instructional Use of the Internet of Early and Late Adopters	311
5.3.7	Problems and Perceived Needs of Early and Late Adopters in the Integration of the Internet in the Teacher-Training Curriculum	314
5.4	Conclusions of the Study	316
5.5	Limitations of the Study	318
5.6	Recommendations of the Study	319
5.7	Suggestions for Future Research	335
	REFERENCES	338
APPENDIX A	Letter of Approval from Education Ministry to Conduct Research in the Teacher Training Colleges	373
APPENDIX A1	Letter of Approval from Education Ministry to Conduct Research in the Teacher Training Colleges (Bahasa Malaysia Version)	374
APPENDIX B	List of Panel of Experts	375
APPENDIX C	Stages of Concern towards Internet Instrument (SOICI)	376