Development and evaluation of a CAI course in *Information Technology for Life* at Nakhon Pathom Rajabhat University, Thailand.

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Certificate

I certify that this thesis has not already been submitted for any degree and is not being submitted as part of candidature for any other degree.

I also certify that this thesis has been written by me and that any help that I have received in preparing this thesis, and all sources used, have been acknowledged in this thesis.

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.....

Somporn Sirisawad

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Contents

Certificate i

Acknowledgements ii

Contents iv

List of Figures ix

List of Tables xiii

Abstract xvi

1 Introduction 1

1.1 Background 1

1.1.1 Thailand in brief 1

1.1.2 Education in Thailand 2

1.1.3 Overview of Higher Education in Thailand 3

1.1.4 Traditional Learning in Thailand 4

1.2 Problems in higher education in Thailand 6

1.3 Background to the study 9

1.3.1 Brief history of Rajabhat Institutes 9

1.3.2 Brief history of Nakhon Pathom Rajabhat University (NPRU) . . 10

1.3.3 *Information Technology for Life* course 12

1.4 Motivation for the study 13

1.4.1 Why CAI, why not e-learning or Web-Based Instruction? 14

Physical infrastructure problem 15

Budgeting infrastructure problem 15

Human support infrastructure problem 16
1.4.2 Self-Paced Learning 17
1.4.3 Use of CAI 17
1.5 Significance of Study 18
1.6 Research questions 20
1.7 Conclusion 21

2 Review of the Literature 22
2.1 Introduction 22
2.2 Theories of learning 23
2.2.1 Behaviourism 24
2.2.2 Cognitivism 24
2.2.3 Constructivism 25
2.3 Some strengths and weaknesses of learning theories 25
2.3.1 Behaviourism 26
2.3.2 Cognitivism 26
2.3.3 Constructivism 26
2.4 Which is the best learning theory for instructional design? 33
2.5 Nature of adult learning 34
2.6 Student-Centred Learning (SCL) 36
2.6.1 What is student-centred learning? 37
2.6.2 Productivity and critiques of student-centred learning 38
2.6.3 Comparison of teacher-centred and student-centred models 38
2.7 What is CAI? 42
2.8 Differences between CAI and other modes of instruction 45
2.9 Types of CAI 48
2.10 Research on CAI 50
2.11 Development of CAI 52
2.11.1 Gagne's Theory 54
2.11.2 Bransford's Theory 55
2.11.3 Instructional design for CAI 56
2.11.4 Gagne's Nine Events of Instruction 60
2.11.5 Ten steps for developing effective CAI 62

2.12 Evaluation of CAI 65
2.13 Novelty effect in CAI 66
2.14 Student attitudes to CAI 67
2.15 Evaluation of student attitudes 68
2.16 Hypothesis evaluation 69
2.17 Conclusion 69

3 Methodology **71**
3.1 Population 71
3.2 Sample 72
3.3 Research Design 72
3.4 Syllabus 73
3.5 Development of CAI lessons 74
3.6 Attitude surveys 79
3.7 Interviews 80
3.7.1 Focus Groups 81
3.8 Instrumentation 81
3.9 Experimentation 83
3.9.1 Control Group 83
3.9.2 Experimental Group 83
3.9.3 Measurement 85
3.10 Pre-tests and Post-tests 85
3.11 Final exam 85
3.12 Statistical analysis 85
3.12.1 Hypothesis testing 87
3.13 Hypotheses tested in this study 87
3.14 Limitations of study 88
3.15 Ethical issues 89
3.16 Conclusion 89

4 Results **90**
4.1 Quality of tests 90
4.2 Results for Lecture and CAI groups 91

4.2.1 Students' learning ability 92
4.2.2 Students' background knowledge 93
4.3 Analysis of Pre-test/Post-test results 94
4.3.1 Lecture group 94
4.3.2 CAI group 96
4.4 Analysis of post-test results 98
4.4.1 Comparison between weak, average and strong students within groups 103
4.4.2 Comparison of weak, average and strong students between groups 104
4.4.3 Final examination performance 105
4.5 Analysis of student attitudes 105
4.5.1 CAI student attitudes 106
4.5.2 Lecture student attitudes 107
4.5.3 Comparison of CAI and Lecture group attitudes to their respective teaching methods 107
4.5.4 Correlation between attitude to teaching method and performance 108
4.6 Analysis of focus group results for CAI students 110
4.7 Conclusion 112

5 Discussion, Conclusion, Implications and Recommendations 113
5.1 Summary 113
5.1.1 Review of the findings 114
5.2 Discussion 115
5.2.1 $H_0$1: No significant difference in student performance 115
5.2.2 $H_0$2: No significant difference in CAI outcomes for weak, average and strong students 116
5.2.3 $H_0$3: No significant difference in final examination performance . 117
5.2.4 $H_0$4: No significant difference in attitude 118
5.2.5 $H_0$5: No significant correlation between CAI performance and attitude to CAI 118
5.2.6 $H_0$6: No significant correlation between lecture group performance and attitude to traditional teaching 118
5.3 Conclusion 119

5.4 Implications 119
5.5 Recommendations for Further Study 120

Appendices **122**

A *Information Technology for Life* syllabus **123**

B CAI lessons **128**

C Focus groups interviews **167**
C.1 Focus group questions 167
C.2 Focus groups results (Experiment 1) 167
C.3 Focus groups results (Experiment 2) 171
C.4 Focus groups results (Experiment 3) 174

D Test items **180**

E Guide sheets **190**

F Consent form **200**

G Item difficulty and discrimination **203**

H Students' GPA Scores **207**

I Pre-test and post-test scores **209**

J Attitude surveys **221**
J.1 Summary of attitude survey results 234
J.1.1 Experiment 1 (Experiment Group) 234
J.1.2 Experiment 2 (Experiment Group) 237
J.1.3 Experiment 3 (Experiment Group) 240
J.1.4 Experiment 1 (Control Group) 243
J.1.5 Experiment 2 (Control Group) 246
J.1.6 Experiment 3 (Control Group) 249

Bibliography **252**

List of Figures

1.1 Thailand and its neighbouring countries. 2

1.2 Wai Khroo ceremony at Nakhon Pathom Rajabhat University (early academic year, 2005). 5

1.3 Nakhon-Pathom Rajabhat University (NPRU). 10

2.1 Inter-relationship between psychology, learning, and the use of technology in education. Adapted from Wilhelhelm *et al.* (1998). 24

2.2 Comparison of associated instructional strategies of the behavioural, cognitive, and constructivist viewpoints, based on the learner's level of task knowledge and the level of cognitive processing required by the task (following Ertmer and Newby (1993)). 33

2.3 Illustration of Gagne's "Nine Events of Instruction", following Gagne *et al.* (1981). 63

3.1 Programmed branching model of instruction, used in the CAI lessons developed for *Information Technology for Life* at NPRU (Merrill, 1994). . . 77

3.2 Flowchart of topics covered in the "Computer Components" CAI lesson developed at NPRU. 77

3.3 Flowchart of topics covered in the "Data communication" CAI lesson developed at NPRU. 78

3.4 Flowchart of topics covered in the "Internet" CAI lesson developed at NPRU. 78

3.5 The computer laboratory at Nakhon Pathom Rajabhat University, where the CAI lessons were taught. 80

3.6 Typical workstation used by CAI students in the computer laboratory of NPRU's central library. 82

3.7 Photograph showing the control group attending a traditional lecture, delivered by a volunteer instructor. 84
3.8 Photograph showing some students from the experimental group working on a CAI lesson. 84
3.9 Students taking a post-test after finishing a CAI lesson. 86

4.1 Comparison of GPA scores for students in the CAI and lecture groups. . . 93
4.2 Comparison of total pre-test scores for students in the CAI and lecture groups. 94
4.3 Lecture group pre- and post-test results for Topic 1. 95
4.4 Lecture group pre- and post-test results for Topic 2. 96
4.5 Lecture group pre- and post-test results for Topic 3. 96
4.6 CAI group pre- and post-test results for Topic 1. 97
4.7 CAI group pre- and post-test results for Topic 2. 98
4.8 CAI group pre- and post-test results for Topic 3. 98
4.9 Average normalised gains for CAI and Lecture groups in Topic 1. 99
4.10 Average normalised gains for CAI and Lecture groups in Topic 2. 100
4.11 Average normalised gains for CAI and Lecture groups in Topic 3. 100
4.12 Combined average normalised gains for CAI and Lecture groups in the three topics. 101

B.1 Computer component and functions. 129
B.2 Computer component and functions (cont.) 130
B.3 Computer component and functions (cont.) 131
B.4 Computer component and functions (cont.) 132
B.5 Computer component and functions (cont.) 133
B.6 Computer component and functions (cont.) 134
B.7 Computer component and functions (cont.) 135
B.8 Computer component and functions (cont.) 136
B.9 Computer component and functions (cont.) 137
B.10 Computer component and functions (cont.) 138
B.11 Computer component and functions (cont.) 139
B.12 Computer component and functions (cont.) 140

B.13 The Internet. 141
B.14 The Internet (cont.) 142
B.15 The Internet (cont.) 143
B.16 The Internet (cont.) 144
B.17 The Internet (cont.) 145
B.18 The Internet (cont.) 146
B.19 The Internet (cont.) 147
B.20 The Internet (cont.) 148
B.21 The Internet (cont.) 149
B.22 The Internet (cont.) 150
B.23 The Internet (cont.) 151
B.24 The Internet (cont.) 152
B.25 The Internet (cont.) 153
B.26 The Internet (cont.) 154
B.27 The Internet (cont.) 155
B.28 The Internet (cont.) 156
B.29 The Internet (cont.) 157
B.30 Data communication. 158
B.31 Data communication (cont.) 159
B.32 Data communication (cont.) 160
B.33 Data communication (cont.) 161
B.34 Data communication (cont.) 162
B.35 Data communication (cont.) 163
B.36 Data communication (cont.) 164
B.37 Data communication (cont.) 165
B.38 Data communication (cont.) 166

D.1 Test 1 181
D.3 Test 1 (cont.) 182
D.2 Test 1 (cont.) 183
D.4 Test 2. 184
D.5 Test 2 (cont.) 185
D.6 Test 2 (cont.) 186

D.7 Test 3 187
D.8 Test 3 (cont.) 188
D.9 Test 3 (cont.) 189

E.1 Student guide sheets for Experiment 1. 191
E.2 Student guide sheets for Experiment 1 (cont.). 192
E.3 Student guide sheets for Experiment 2. 193
E.4 Student guide sheets for Experiment 2 (cont.). 194
E.5 Student guide sheets for Experiment 3. 195
E.6 Student guide sheets for Experiment 3 (cont.). 196
E.7 Student guide sheets for Experiment 3 (cont.) 197
E.8 Student guide sheets for Experiment 3 (cont.) 198
E.9 Students' guide sheets experiment 3 (cont.). 199

F.1 English-language version of consent form completed by all students participating in the research. 200
F.2 Thai-language consent form completed by all students participating in the research. 201
F.3 Thai-language consent form (continued). 202

J.1 Experimental group questionnaire form. 221
J.2 Experimental group questionnaire form (cont.) 222
J.3 Experimental group questionnaire form (cont.) 223
J.4 Control group questionnaire form 224
J.5 Control group questionnaire form (cont.) 225
J.6 Control group questionnaire form (cont.) 226
J.7 Experimental group questionnaire form (Thai) 227
J.8 Experimental group questionnaire form (Thai) cont. 228
J.9 Experimental group questionnaire form (Thai) cont. 229
J.10 Experimental group questionnaire form (Thai) cont. 230
J.11 Control group questionnaire form (Thai) 231
J.12 Control group questionnaire form (Thai) cont. 232
J.13 Control group questionnaire form (Thai) cont. 233

List of Tables

1.1 Number of universities, students and instructors under the jurisdiction of the Office of the Higher Education Commission in academic year 2003. . 4

2.1 Comparison of Behaviourism, Cognitivism and Constructivism (following Ertmer and Newby (1993, pp. 50–72)). 27

2.2 A comparison of teacher-centred and student-centred models (University of Bath, 2005). 39

3.1 Sample sizes and their gender composition. 72

3.2 Independent and dependent variables in this research. 73

3.3 Summary of *Information Technology for Life* syllabus, Nakhon Pathom Rajabhat University. 74

3.4 Topic 1— Computer components and functions. 75

3.5 Topic 2— The Internet. 76

3.6 Topic 3— Data Communication. 76

4.1 Mean difficulty, $\overline{P}$, and its standard deviation, SD, for the test items in the three topics taught to the CAI and lecture groups. 91

4.2 Mean discrimination, $\overline{D}$, and its standard deviation, SD, for the test items in the three topics taught to the CAI and lecture groups. 91

4.3 Number of participants, by gender, taking the pre-tests. 91

4.4 Number of participants, by gender, considered in the final analysis. 92

4.5 Results of GPA t-test analysis, used to compare learning abilities of CAI and lecture groups. $\overline{X}$ is the mean GPA. 92

4.6 Results of t-test analysis on total pre-test scores, used to compare background knowledge of CAI and lecture groups. $\overline{X}$ is the mean score by group, out of a possible 90. 93
4.7 Results of t-test analysis, comparing pre-test and post-test scores for the Lecture group. The maximum possible score for each test is 30. 95
4.8 Results of t-test analysis, comparing pre-test and post-test scores for the CAI group. The maximum possible score for each test is 30. 97
4.9 Topic 1 (Computer components and functions) t-test analysis for significance in difference between average normalised gains, $\langle g \rangle$, comparing CAI and Lecture groups (t-critical = 1.975). 102
4.10 Topic 2 (The Internet) t-test analysis for significance in difference between average normalised gains, $\langle g \rangle$, comparing CAI and Lecture groups (t-critical = 1.976). 102
4.11 Topic 3 (Data communication) t-test analysis for significance in difference between average normalised gains, $\langle g \rangle$, comparing CAI and Lecture groups (t-critical = 1.977). 102
4.12 Combined topic 1–3 t-test analysis for significance in difference between average normalised gains, $\langle g \rangle$, comparing CAI and Lecture groups (t-critical= 1.977). 103
4.13 Composition of CAI and Lecture sub-groups, determined according to GPA. 103
4.14 Results of t-test comparison of average normalised gains, $\langle g \rangle$, between the three sub-groups (weak, average and strong) within the CAI cohort. . 104
4.15 Results of t-test comparison of average normalised gains, $\langle g \rangle$, between the three sub-groups (weak, average and strong) within the CAI cohort. . 104
4.16 Results of t-test comparison of difference in average normalised gains, $\Delta \langle g \rangle = \langle g \rangle_{\text{CAI}} - \langle g \rangle_{\text{Lecture}}$, for weak, average and strong students between groups. 104
4.17 Results of t-test analysis comparing combined final examination scores, $\overline{X}$, for the three topics (t-critical = 1.975). 105
4.18 Numbers of students responding to attitude survey questionnaires. 106
4.19 Response of CAI and Lecture group students to general attitude survey question on access to a home computer. 106

4.20 Summary of average CAI group student responses to attitude survey items. 106
4.21 Summary of average Lecture group student responses to attitude survey items. 107
4.22 Results of t-test analysis comparing average of all attitude-survey items, $\overline{X}$, between CAI and Lecture groups (t-critical = 2.002). 107
4.23 Relationship between attitude to teaching method and performance. . . . 109
4.24 Results of test for significance of correlation coefficients, r, between attitude to teaching method and learning outcome (t-critical = 1.990). 110

5.1 Summary of hypothesis testing. 115

A.1 *Information Technology for Life* syllabus, Nakhon Pathom Rajabhat University. 124

G.1 Item Difficulty and Discrimination for test items in "Computer Components and Functions". 203
G.2 Item Difficulty and Discrimination for test items in "The Internet". 204
G.3 Item Difficulty and Discrimination for test items in "Data Communication".205

H.1 GPA scores of control group. 207
H.2 GPA scores of experiment group. 208

I.1 Control Group pre-test scores. 209
I.2 Experiment Group pre-test scores. 212
I.3 Control Group post-test scores. 215
I.4 Experiment Group post-test scores. 218

J.1 Attitude survey results from Experiment Group for Experiment 1. 234
J.2 Attitutude survey results from Experiment Group for Experiment 2. . . . 237
J.3 Attitutude survey results from Experiment Group for Experiment 3. . . . 240
J.4 Attitutude survey results from Control Group for Experiment 1. 243
J.5 Attitutude survey results from Control Group for Experiment 2. 246
J.6 Attitutude survey results from Control Group for Experiment 3. 249

Abstract

The purpose of this study was to determine whether computer assisted instruction (CAI) in the *Information Technology for Life* course taken by first year students at Nakhon Pathom Rajabhat University (NPRU), Thailand, could be used to teach at least as effectively as traditional methods. Since CAI has been used successfully in developed countries to supplement or replace traditional methods of instruction, it was thought that CAI may present a solution to the lack of instructors in general education courses across the 41 Rajabhat Universities in Thailand. CAI could also facilitate student centred learning, a key goal of the National Education Act (1999).

One hundred and twenty four incoming freshman students enrolled at NPRU for the 2004 academic year participated in a study comparing the two methods of instruction using three topics of the *Information Technology for Life* course. The research questions examined were (1) are there differences between the groups on the achievement factors related to CAI usage? and (2) are there differences between the groups on attitude factors related to CAI and traditional teaching? CAI lessons were developed for the experimental group as interactive multimedia modules loaded from a CD-ROM; the control group received traditional lecture instruction.

Pre-test and post-test scores indicated greater learning gains in the CAI group. Comparison of weak, average and strong students between the two groups showed no difference in learning outcomes for the weak students, but average and strong students in the CAI group did better than those of the control group. The results also indicated that CAI students' retention of content was better than that of students following traditional learning. There was no significant difference in students' attitudes toward their method of teaching. Students of both groups felt that overall their method of teaching was very good. No relationship was found between student performance and their attitude toward CAI.