

**Doctor of Philosophy (Education)**

---

**Student retention in distance  
education using on-line  
communication.**

**Kylie Twyford** AAPI  
BBus BEd (Hons)

**2007**

## **Certificate of Originality**

---

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

**Signed:** \_\_\_\_\_

**Date:** \_\_\_\_\_

## **Dedication**

---

This dissertation is dedicated to my father, William (Bill) Ewart Gladstone Twyford (1932 –2000). Dad’s love of learning and thorough research skills facilitated and inspired my academic endeavours.

## Acknowledgements

---

Any project of this magnitude always requires the support and sacrifices of many people. Firstly, I would like to acknowledge the Open Training and Education Network and, in particular, the Property Services section - within which this research took place - for their support. I would especially like to thank Keren Northcote, the then Property Services' Administrative Assistant, for her assistance in undertaking this project. Of course, thanks must also be given to the students who participated in the experiment and provided valuable feedback.

I would especially like to extend my appreciation to my supervisor, Dr Robert Pithers, for his guidance and extensive feedback. I was very privilege to have the benefit of his wisdom. I am also grateful to Dr Shirley Saunders for her generous comments when reviewing and assessing my work.

Finally, I would like to thank those closest to me, my husband, Darren, and two daughters, Arki and Indigo. Their support and understanding while I completed this project was appreciated.

## Abstract

Distance education has suffered from lower retention and completion rates when compared to conventional, face-to-face teaching. A major reason associated with students not persisting with their studies in distance education has been the lack of interaction between the teacher and the learner. This lack of interaction tends to result in students feeling isolated and, consequently, can impact on the students' motivation to complete or to even start their studies. The primary aim of this research was to investigate the effect of a program of faculty-initiated motivational messages sent via electronic mail and designed in accordance with Keller's ARCS model of motivation. The question was whether such an intervention would reduce students' sense of isolation and improve their motivation, resulting in more student commencements and completions.

The research reported was empirical-analytical in nature. It employed experimental and control groups of students. The former experienced the email messages while the latter did not experience these messages. The results of this study indicated that the use of collective motivational email messages was a significantly effective strategy to increase student participation in and completion of distance education modules. In addition, a survey-based questionnaire was employed to examine students' perceptions of their distance learning experience. The results revealed that many students appreciated this form of communication support and, importantly, perceived the email messages as having influenced their motivation and, at least in some respect, their effort in the modules.

The results of this study validated some of the elementary findings of Visser (1998). In contrast, however, to the findings of Visser's (1998) study, which involved only a small number of students, the present study revealed that the sending of collective motivational communication via electronic mail was an effective way to positively influence the effort of large numbers of students. This

was seen to be a beneficial finding for distance education providers' world wide, as large numbers of students typify most distance institutions.

## Table of Contents

	<b>Page</b>	
Certificate of Originality	2	
Dedication	2	
Acknowledgements	3	
Abstract	4	
Table of Contents	6	
List of Figures	9	
List of Tables	10	
Chapter 1	Research problem and literature review	
1.1	The problem: Attrition in distance education	13
1.2	Models of Attrition	18
1.3	An institute approach to attrition	31
	1.3.1 Isolation and Motivation	35
	1.3.2 Student and Teacher Interaction	38
1.4	Teletutoring	44
1.5	Motivational Messages Support System (MMSS)	50
	1.5.1 Visser's Pilot Study	50
	1.5.2 <i>Visser's Main Study</i>	55
Chapter 2	Background	
2.1	Statement of problem	71
2.2	Need for the study	72
2.3	Purpose and significance of the study	74
2.4	Definition of major terms	75
2.5	Research Setting	76
	2.5.1 Distance education at OTEN	77
2.6	Research Design	79
2.7	Research Hypotheses and Questions	87

## Table of Contents (cont.)

	<b>Page</b>	
Chapter 3	Method	
3.1	Population, Samples and Subjects	90
3.1.1	The population	90
3.1.2	Samples: Selection	94
3.2	Data Collection	103
3.2.1	Official Records	104
3.2.2	Questionnaire	106
3.2.3	Procedural Summary	114
3.3	The intervention: Messages and Procedure	115
3.4	General Procedure	102
Chapter 4	Results	
4.1	Introduction	124
4.2	Statistical Analyses	125
4.3	Descriptive data: Demographics of experimental and control groups	125
4.4	Hypotheses and research questions findings	127
4.4.1	Research Question 1 and Hypotheses 1a and 1b	127
4.4.2	Research Question 2 and Hypothesis 2	132
4.4.3	Research Question 3 and Hypothesis 3	136
4.4.4	Research Questions 4a and 4b	140
4.4.5	Survey research questions: Non-completion	144
4.4.6	Survey research questions: Perceptions of the E.S.P.	148

## Table of Contents (cont.)

	<b>Page</b>
Chapter 5	Conclusions and Discussion
5.1	Conclusions 185
5.1.1	Summary of experimental findings 197
5.2	Study Limitations 198
5.3	Discussion 202
5.4	Further Research 215
5.5	Recommendations 217
5.6	Concluding Remarks 219
Reference List	221
Appendices	
1	Completed student's questionnaire 231
2	Non-completed student's questionnaire 234
3	Covering letter sent with questionnaires 237
4	Email No.1: Welcome to Property Services 238
5	Email No.2: Web sites of Interest 239
6	Email No. 3: Assignment 1 Help 240
7	Email No. 4: Course progress 1 241
8	Email No. 5: Course progress 2 242
9	Email No. 6: Course progress 3 243
10	Email No. 7: Course progress 4 244
11	Email No. 8: Test hints 245
12	Example of weekly spreadsheet 246
13	Example of semester Gantt chart 247
14	Student consent form 248
15	Email No. 9: Have your say! 249
16	Email No. 10: Please send in the survey! 250
17	Demographics 251



## List of Figures

	<b>Page</b>
1.1 Tinto's (1975) conceptual model of dropout	19
1.2 Kember's (1995) Model of Student Progress	27
4.1 Combined response category percentage data for completers and non-completers for the statement 'The email messages made me feel anxious about my progress in the course'.	160
4.2 Combined response category percentage data for completers and non-completers for the statement 'The email messages made me aware of my progress or lack of it'.	161
4.3 Response category percentage data for completers and non-completers for the statement ' The email messages were relevant to my study'.	164
4.4 Response category percentage data for completers and non-completers for the statement 'Overall, the email messages had a positive effect on my study experience'.	168
4.5 Response category percentage data for completers and non-completers for the statement 'My study progress benefited from the email messages'.	169
4.6 Combined response category percentage data for completers and non-completers for the statement ' The email messages encouraged me to contact the Property Services staff for assistance'.	183
4.7 Response category percentage data for completers and non-completers for the statement 'I felt isolated while doing these subjects'.	183

## List of Tables

	<b>Page</b>
1.1 Overview of the MMSS study (Visser, 1998)	57
1.2 1997 completion rates for first time and repeating students in Visser's (1998) MMSS study	59
1.3 1997 completion rates for all courses in Visser's (1998) MMSS study	62
2.1 Details of the present study linked to Cleary and Nicolls' (1998) Improvement Model	82
2.2 Details of the basic research design utilised in this study	86
3.1 Assessment details of the four modules	96
3.2 Overview of some of the questionnaire statements and their ARCS component targeted in the questionnaire	111
3.3 Data collection sources to address hypotheses and research questions	114
3.4 Summary of the email messages and procedures	117
4.1 Experimental group and CG1 non-working, working and completion status	129
4.2 Comparison of non-working, working and completion statistics between CG1 and CG2	134
4.3 Average time taken (in days) to submit the first assignment and complete all assessment events for the experimental group and the combined control groups	138
4.4 Experimental group demographic analysis of completers v. non-completers	141
4.5 Control group demographic analysis of completers v. non-completers	143
4.6 Perceived reasons in rank order for non-completion after a 16-week period in the experimental group and comparison of results with Kirkby's (2000) exit study at OTEN in 1999.	146
4.7 Initial motivation	151

## List of Tables (cont.)

	<b>Page</b>
4.8 Initial intentions	152
4.9 Initial goals	153
4.10 Work relatedness – current work requirements	154
4.11 Work relatedness – future job possibilities	155
4.12 Reading of email messages	156
4.13 Number of email messages	157
4.14 Timing of email messages	158
4.15 Category C questionnaire statements and the ARCS component targeted in the questionnaire	163
4.16 The ARCS model data: Attention	165
4.17 The ARCS model data: Confidence	166
4.18 Combined response category percentage data about the influence of the email messages for completers and non-completers.	170
4.19 Combined response category percentage data for completers and non-completers for the statement ‘The email messages made me think the Property Services section was interested in my study progress’.	173
4.20 Combined response category percentage data for completers and non-completers for the statement ‘The email messages made me feel I could actively interact with Property Services’.	174
4.21 Combined response category percentage data for completers and non-completers for the statement ‘The email messages reduced feelings of isolation’.	175
4.22 Combined response category percentage data about the students’ appreciation of the email messages for completers and non-completers.	177
4.23 Combined response category percentage data for completers and non-completers for the statement ‘ The email messages helped me feel more confident about my ability to succeed’.	179

## List of Tables (cont.)

	<b>Page</b>
4.24 Combined response category percentage data for completers and non-completers for the statement 'Some of the email messages helped me link success to my goals'.	180
4.25 Combined response category percentage data for completers and non-completers for the statement 'The email messages made me feel that success isn't linked to luck'.	181
4.26 Combined response category percentage data for completers and non-completers for the statement 'The email messages made me feel I could succeed with some effort'.	181