## THE IMPACT OF MULTIMODAL TEXTS ON THE DEVELOPMENT OF ENGLISH LANGUAGE PROFICIENCY

Sasikala Nallaya

## M.Ed (TESL), B.Ed TESL (Hons), Dip.ESL, Basic Teaching Certificate



This thesis is submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy, School of Education, The University of Adelaide

February 2010

### **Table of Contents**

	Page
Abstract	vii
Declaration	viii
List of Figures	ix
List of Tables	X
Acknowledgements	xi
Chapter One:	1
Multimodal Texts and English Language Proficiency	
1.2 Background of the Study	7
1.2.1 English Language Proficiency	7
1.2.2 Needs Analysis	9
1.2.3 Technology and Multimodal Learning	11
1.2.4 The Emergence of Problems	13
1.3 Statement of Problems	14
1.3.1 Lack of Common Definition of Proficiency	14
1.3.2 Varying Levels of Proficiency	15
1.3.3 Needs Assessment	19
1.3.4 Lack of Acknowledgement for Learners' Technological	20
Experiences	
1.4 Comments on the Aims and Objectives of the Research Study	21
1.5 Significance of the Study for Language Teaching and Learning	23
1.6 A Personal Perspective	24
Chapter Two:	26
Review of Previous Research into the Acquisition of English Language Proficiency	
2.1 English Language Proficiency	27
2.2 English Language Proficiency Levels	32
2.3 Literacy	33
2.4 Competence	38
2.5 Needs Analysis	40
2.6 Previous Research on Needs Analysis	42
2.7 Summary	46
Chapter Three:	48
Technology and Multimodal Texts	_
3.1 Technology	48
3.2 Information Technology	49
3.3 Information Technology in the Malaysian Education System	52
3.4 Multimodal Texts	54
3.4.1 Multimodal Technologies Accessible to Students in Malaysia	58
3.5 Previous Research on Technology and Multimodal Texts	59
3.6 Theoretical Framework	63
3.6.1 Social Constructivism	64
3.6.2 A Modelling Approach	66
3.7 A Theoretical Framework	67
3.7.1 The Causal Framework	69
3.8 Summary	70

Cha	pter Four:	73
Des	igning the Study	
4.1	The Design of the Study	73
	4.1.1 Research Site	74
	4.1.2 The CE1 Course	76
	4.1.3 The Course Participants	78
4.2	Design of the Sample	78
	4.2.1 Research and Ethics Committee Approval	79
4.3	Analysis Techniques	80
4.4	The Students and their Characteristics	82
4.5	Pilot Study	91
4.6	Summary	92
Cha	pter Five:	94
Pro	blems of Scaling and Measurement	
5.1	Measurement	94
5.2	Scales and Measurement	95
	5.2.1 Types of Variables	96
5.3	Scores	97
5.4	Scaling Procedure	98
5.5	Missing Values	99
5.6	Factor Analysis	100
5.7	Confirmatory Factor Analysis (CFA)	101
5.8	Rasch Measurement	102
5.9	Summary	104
Cha	pter Six:	106
Pro	blems of Analysis	
6.1	Examining Causation	106
	6.1.1 Path Analysis	106
	6.1.2 Structural Equation Modelling (SEM)	108
	6.1.3 Confirmatory Factor Analyses	109
6.2	Analysing Change	110
	6.2.1 Hierarchical Linear Modelling	110
6.3	Summary	112
Cha	pter Seven:	114
Col	lecting Information and Data	
7.1	Background of Questionnaires	114
	7.1.1 Needs Analysis Questionnaire	114
	7.1.2 Multimodal and Language Proficiency Questionnaire	116
7.2	English Proficiency Test	117
7.3	Interviews	120
7.4	Documentation	122
7.5	Open-ended Written Statements	122
7.6	Validity and Reliability of Instruments	124
7.7	Validation of Instruments	126
	7.7.1 Needs Analysis Questionnaire	126

7.7.2 Multimodal and Language Proficiency Questionnaire	127
7.8 Summary	129
Chapter Eight:	132
Technology and Learning Needs	
8.1 Participant Profile	133
8.2 Technology and Multimodal Texts	135
8.3 Multimodal Texts and English Language Proficiency	137
8.4 Multimodal or Print Texts?	138
8.5 Communicative English One and Learning Needs	140
8.6 Contentment with Current Teaching Methods in the CE1 Classroom	145
8.6.1 Satisfied with the Teaching Methods	145
8.6.2 Dissatisfied with the Current Teaching Methods in CE1	147
8.7 Perceived Needs and Expectations of the Communicative English One	150
8.7.1 Speaking Skills	151
8.7.2 Listening Skills	152
8.7.3 Writing Skills	152
8.7.4 Reading Skills	152
8.7.5 Other Skills	153
8.7.6 Other Needs	153
8.8 Reasons for Enrolling in the Communicative English One Course	154
8.8.1 To Improve in English	154
8.8.2 The Importance of English	154
8.8.3 A Compulsory Course	155
8.8.4 Employment Opportunities	156
8.8.5 To Learn to Communicate Proficiently	156
8.8.6 Confidence	156
8.8.7 Getting Good Grades	157
8.8.8 Other Reasons	157
8.9 History of Communicative English One	158
8.9.1 Communicative English One and Learning Outcomes	159
8.9.2 Types of Text in the CE1 Classroom	161
8.9.3 Administration of Communicative English One	163
8.10 Summary	164
Chapter Nine:	172
The Mediating Effects on Change in English Language Proficiency	
9.1 Measurement Model	176
9.2 Structural Model	179
9.2.1 The Effects OF the Antecedent Variables	182
9.2.2 What are the Direct Factors that Influence Change in EPT3?	186
9.2.3 What is the Influence of Learning Needs on other Variables?	188
9.2.4 What are the Factors that Influence Change in Multimodal and	189
Language Proficiency?	-
9.3 Summary	192
Chapter Ten:	194
The Moderating Effects on Change in English Language Proficiency	
10.1 Variables included in the Model	195

10.2 Unconditional Model	197
10.3 Final Model for Change Over Three Occasions	201
10.4 Changes Between Time 1 and Time 2 and Time 3 on EPT Performance	208
10.4.1 Factors Influencing Change in EPT Performance from Time 1	209
to Time 2	
10.4.2 Factors Influencing EPT Performance from Time 1 to Time 3	215
10.4 Summary	219
Chapter Eleven:	223
Multimodal Texts and Language Learning	
11.1 Structure of Study	223
11.2 Findings	227
11.3 Implications	235
11.3.1 Implications for Theory	235
11.3.2 Implications for Future Research	236
11.3.3 Implications for Policy and Practice	237
References	239
Appendices	
Appendix 1.1 Malaysian University Entrance Test (MUET) Proficiency	261
Appendix 1.2 Communicative English One (CE1) Proficiency Levels Descriptors	262
Appendix 2.1 Wisconsin Administrative Rule Proficiency Descriptors	263
Appendix 3.1 The ISTE National Educational Technology Standards and Performance	268
Indicators for Students	
Appendix 3.2 The ISTE National Educational Technology Standards and Performance	269
Indicators for Teachers	
Appendix 4.1 Research and Ethics Committee Approval	270
Appendix 4.1aResearch and Ethics Committee Approval	271
Appendix 5.1 Needs Analysis Questionnaire	272
Appendix 5.2 Multimodal and Language Proficiency	280
Appendix 5.3 English Proficiency Test	288
Appendix 7.1 Validation of Xiao's (2003) Needs Analysis Questionnaire Through	304
Confirmatory Factor Analysis	
Appendix 7.2 Communalities for the Author's 12-Factor Model	353
Appendix 7.3 Discrimination Index for Needs Analysis	355
Appendix 7.4 Validation of Multimodal and Language Proficiency Questionnaire	356
Through Confirmatory Factor Analysis	
Appendix 9.1 PLSPath MV-Correlations	392

#### ABSTRACT

This research study titled 'The Impact of Multimodal Texts on the Development of English language proficiency' is conceived from three problem statements: (a) Is the Communicative English One (CE1) course effective? (b) Is the use of multimodal technologies useful? and (c) Is it useful to have knowledge about students' learning needs in the design of a course, as well as taking cognisance of their needs in the planning? The CE1 course guided this research study. A sample of 400 students was drawn out of a total of 1300. Students' English language proficiency was assessed before they started the course, at the end of the course and three months after they had completed the course. An English Proficiency Test (EPT) was administered on three occasions to assess change in performance with respect to learning English. Information about students' background characteristics, in addition to the processes involved in the course and those related to the course was collected. The English Proficiency Test was used to assess the students' performance on the course and the data were analysed with Partial Least Squares Path Analysis to examine the mediating effects that influenced outcomes. Hierarchical Linear Modelling was used to examine the moderating effects that influenced the outcomes. Thirteen students were also interviewed to obtain an indepth perspective of the situation. Students' written responses to open-ended questions were also analysed.

The key findings are: (a) multimodal technologies are effective in English language learning, (b) there is a gain in performance of students who enrolled for the CE1 course with low English proficiency, (c) while the girls do not lose, the boys increase noticeably in performance, (d) students from the East Coast region do not progress as rapidly as other regions, (e) students in some faculties gain more than students in other faculties and (f) there are faculty differences in the benefits obtained from the course. The implication of this research study to the theory of language learning is that multimodal technology increases the informal learning of English as both a second and foreign language alongside formal instruction in the classroom. Thus the use of technology can supplement the learning of a second and a foreign language in ways similar to the learning that takes place within the community in second language learning. This research study indicates that there are important benefits from the application of multimodal technologies that can be used for foreign language learning as well as for broadening second language learning.

# Key words: English language proficiency, Multimodal technology, Latent variable path analysis, Multilevel Modelling, Change analysis

### DECLARATION

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by any other person except where due reference has been made in the text.

I give consent to this copy of my thesis, when deposited in the University Library, being made available in all forms of media, now or hereafter known.

.....

Sasikala Nallaya

### LIST OF FIGURES

Figure	Title	Page
1.1	Map of Malaysia	16
1.2	Map of the State of Perak	17
3.1	Forms of Multimodal Text	56
3.2	Causal Framework of the Research Study	68
4.1	Communicative English One Course Overview	77
4.2	Histogram of Respondent's Age Profile	84
4.3	Pie Chart of Respondents' Ethnicity	85
4.4	Bar graph of Respondents' State of Origin	87
4.5	Categorization of Respondents According to Faculties	88
7.1	Student Interview Questions	121
7.2	Course Planners' Interview	123
7.3	Validity and Reliability of Instruments	125
9.1	Path Model	175
10.1	Diagrammatic Model for the 2-Level Hierarchical	195
	Linear Model	
10.2	The Moderating Effects of Gender on the Influence of	206
	Occasion on English Language Proficiency	
10.3	The Moderating Effects of Malaysian University	206
	English Test Performance on the influence of	
	Occasion on English Language Proficiency	
10.4	The Moderating Effects of Faculty on the Influence of	208
	Occasion on English Language Proficiency Over	
	Time	
10.5	The Moderating Influence of Variables on English	211
	Language Proficiency for the Time 2 (T2) Effects	
10.6	The Effect of MUET at T2 on English Language	213
	Proficiency	
10.7	The Effect of Gender at T2 on English Language	214
	Proficiency	
10.8	The Effect of Faculty at T2 on English Language	215
	Proficiency	

### LIST OF TABLES

Table	Title	Page
1.1	Ethnic and Ethnolinguistic Groups of Malaysians	8
4.1	Respondents' Gender	83
4.2	Ethnic Composition of Respondents	86
4.3	State of Origin of Respondent	86
4.4	Categorization of Respondents According to	87
	Faculties	
4.5	Family Language Background of Respondents	89
4.6	Family Language Background and Ethnicity	89
4.7	Family Language Background and States of Origin	90
4.8	Family Language Background and Faculty	91
7.1	Measured Variables	130
9.1	Variables in the Individual Level Model	174
9.2	Fit Indices for the Measurement Model	177
9.3	Path Indices for PLS Path Inner Model	181
10.1	Level 1 (Occasion) and Level 2 (Student) Variables	196
10.2	Fully Unconditional Model for English Language	199
	Proficiency (ELP) as the Criterion	
10.3	Final Model for English Language Proficiency (ELP)	203
	with Occasion as the Time Predictor Variable	
10.4	Final Model for English Language Proficiency (ELP)	210
	with Time 2 Controlled for T3 as the Time Predictor	
	Variable	
10.5	Final Model for English Language Proficiency (ELP)	217
	with T3 Controlled for T2 as the Time Predictor	
	Variable	

#### ACKNOWLEDGEMENT

No research student writes a thesis without enormous help from others. I have drawn insights and ideas from many sources such as books, journals, seminars and lectures. I have built upon these ideas to support my study: The Impact of Multimodal Texts on the Development of English Language Proficiency. Writing this thesis has certainly been a journey of discovery. I am indebted to many people whom I would like to acknowledge for having stood by me during my stint as a research student.

I am forever grateful to my co-supervisor Prof. John P. Keeves, who was unselfish with his time and patience. My understanding of this subject was affected significantly by his invaluable advice, insightful comments and suggestions on my various drafts. This thesis would not have materialised without him. It was an honour having him as a supervisor.

I would also like to thank my principal supervisor, Dr. I Gusti Darmawan for guiding me with the research methods employed and for the detailed analyses of the data.

To my partner Andrew Tarnowskyj who was a pillar of strength during my many trials and tribulations. Thank you for standing by me and for being my friend during the darkest days.

To my family in Malaysia, my mum for her never ending words of encouragement and support. My brother and sisters, who did everything possible to make this journey a little less difficult. I thank you for your love, kindness and support.

To my colleagues at the Professions Learning Centre, Nishani, Athena, Marg and Isabella who lent me the use of their offices and who always had a kind word to say when things did not go well. I am forever grateful for having had the chance to meet all of you and for your friendship. You truly are a great lot.

Finally, thank you to the CE1 students who took part in this study and for letting me into your student lives.

With all these people I share my work.