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Hung Manh Ha
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**The Development of a Spatial Technical Writing
technique: the application of Concept Mapping
and Sentence Diagramming**

A thesis submitted in partial fulfilment of
the requirements for the award of the degree

MASTER OF INFORMATION SYSTEMS BY RESEARCH

from

UNIVERSITY OF WOLLONGONG

by

HUNG MANH HA

BEcon, GDipIS

SCHOOL OF ECONOMICS & INFORMATION SYSTEMS

2006

CERTIFICATION

I, Hung Manh Ha, declare that this thesis, submitted in partial fulfilment of the requirements for the award of Master of Information Systems by Research, in School of Economics & Information Systems, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Hung Manh Ha

16 October 2006

TABLE OF CONTENTS

	Page
CERTIFICATION	I
TABLE OF CONTENTS	II
LIST OF TABLES.....	V
LIST OF FIGURES.....	VI
LIST OF ABBREVIATIONS.....	VIII
ABSTRACT	IX
ACKNOWLEDGEMENTS	XI
CHAPTER 1: INTRODUCTION	1
1.1 Research topic.....	1
1.2 Research background	2
1.3 Research problem.....	5
1.4 Research question.....	10
1.5 Research method	11
1.6 Research Limitation.....	13
1.7 Outline of this thesis.....	13
CHAPTER 2: LITERATURE REVIEW	15
2.1 Introduction to this chapter.....	15
2.2 Technical writing technique	16
2.2.1 Requirement for technical documents	16
2.2.2 Technical writing	17
2.2.3 Information Mapping (Infomap).....	26
2.3 Reading Comprehension.....	31
2.4 The information perception of humans.....	37
2.4.1 Human's memory organization	37
2.4.2 Experiments on the memorization of humans.....	39

2.5	Language Ambiguity.....	43
2.6	Lack of concept manipulation strategy for readers.....	46
2.7	Concept Mapping.....	48
2.7.1	What is a concept map and concept mapping?	50
2.7.2	Application of Concept Mapping	51
2.7.3	Paper-based and computer-based concept map.....	56
2.7.4	Disadvantages of concept mapping	58
2.8	Sentence Diagramming	63
2.8.1	What is sentence diagramming?	63
2.8.2	The application of sentence diagramming	65
2.8.3	Disadvantages of sentence diagramming	69
2.9	Research problem.....	72
2.9.1	Limitations of narrative word-after-word technical writing	72
2.9.2	Concept mapping and sentence diagramming as techniques for solving the word-after-word narrative technical document problems.....	75
2.10	Research question.....	78
2.11	Summary of this chapter	80
CHAPTER 3: RESEARCH METHOD.....		81
3.1	Introduction to this chapter.....	81
3.2	Development of Spatial Technical Writing (STW) technique	82
3.2.1	English grammar	82
3.2.2	STW as a new technical writing type	95
3.2.3	STW grammar	97
3.3	Exploratory study.....	161
3.3.1	Quantitative research	162
3.3.2	Qualitative research.....	174
3.3.3	Experiment instrument	176
3.3.4	Experiment planning.....	190
3.3.5	The details of the actual experiment process.....	192
3.4	Summary of this chapter	197
CHAPTER 4: RESULT AND DISCUSSION		198
4.1	Introduction to this chapter.....	198
4.2	Result.....	198
4.2.1	Quantitative results	198
4.2.2	Qualitative results.....	209
4.3	Discussion.....	223
4.4	Summary of this chapter	227

CHAPTER 5: FUTURE WORK.....	228
5.1 STW software	229
5.1.1 The Dictionary Utility on the STW software.....	230
5.1.2 The function of STW software in removing the language reference ambiguity problem.....	235
5.2 The future experiment	240
CHAPTER 6: CONCLUSION.....	243
REFERENCES	247
APPENDIX A: RESEARCH PARTICIPANT CONSENT FORM.....	255
APPENDIX B: INSTRUCTION PAPER FOR NARRATIVE & SPATIAL TEXT	257
APPENDIX C: NARRATIVE TECHNICAL TEXT 1.....	267
APPENDIX D: SPATIAL TECHNICAL TEXT 1.....	269
APPENDIX E: NARRATIVE TECHNICAL TEXT 2	271
APPENDIX F: SPATIAL TECHNICAL TEXT 2	273
APPENDIX G: QUESTION SET 1 FOR NARRATIVE & SPATIAL TECHNICAL TEXT 1	275
APPENDIX H: QUESTION SET 2 FOR NARRATIVE & SPATIAL TECHNICAL TEXT 2.....	278
APPENDIX I: OPINION QUESTION.....	281
APPENDIX J: THE MULTIPLE-CHOICE ANSWERS AND TOTAL MARK OF EACH STUDENT DOING NT1/ST1, OR NT2/ST2 TEST	283

LIST OF TABLES

Table	Title	Page
1.1	Features of concept mapping and sentence diagramming.....	10
2.1	The relationship among reader ability, technical level, and reader need	19
3.1	Participant information table.	194
3.2	Student matching table.	195
3.3	Student participating date table.	196
4.1	Student mark result table.....	199
4.2	Table of student marks sorted in ascending order.	201
4.3	Standard deviation table of ST1, NT1, ST2, and NT2.	206
4.4	Matched subject pair mark comparison for ST1 and NT1.	207
4.5	Matched subject pair mark comparison for ST2 and NT2.	208
4.6	Matched subject pair mark comparison table between ST and NT.....	209
4.7	The ranking result table.....	211
4.8	Classified ranking result table.	211
4.9	Percentage ranking result table.....	212
4.10	Comment code table.....	220
4.11	Comment classification table.	222

LIST OF FIGURES

Figure	Title	Page
1.1	A concept map done by eighth-grade students.....	4
1.2	An example of a sentence diagram.....	5
1.3	Another example of a sentence diagram.	8
2.1	A concept map of ‘Technical Writing’	17
2.2	A concept map of ‘Infomap’	26
2.3	A concept map of ‘Reading Comprehension’	31
2.4	A concept map of ‘Plants’	41
2.5	A concept map of ‘Concept Map’	48
2.6	A concept map representing ‘the idea of concept mapping’	51
2.7	A concept map in chemistry subject.....	55
2.8	A concept map of ‘Paper-based and computer-based concept map’	56
2.9	A concept map of ‘Demographic History’	59
2.10	A concept map of ‘ecosystem’	61
2.11	A concept map of ‘Sentence Diagramming’	63
2.12	A concept map of ‘Limitations of narrative technical writing’	72
3.1	A concept map of ‘STW as a new technical writing type’	95
3.2	A warning message in Windows XP.....	150
3.3	The spatial technical text 1 used in the pilot experiment.	184
3.4	The spatial technical text 2 used in the pilot experiment.	188
4.1	Comparison chart of the mean mark of ST1 with NT1, and ST2 with NT2.	200
4.2	Comparison chart of the median mark of ST1 with NT1, and ST2 with NT2.	202

4.3	Percentage ranking result chart.	212
5.1	A figure showing how a word is matched with a meaning in a dictionary in the hypothetic STW software.	231
5.2	A figure showing how word is specified in the hypothetic STW software.	233
5.3	A figure showing how word should be matched as specifically as possible in the hypothetic STW software.	234
5.4	A figure showing how reference ambiguity is resolved in the hypothetic STW software.	237

LIST OF ABBREVIATIONS

Abbreviation	Full Name
STW	Spatial technical writing
STD	Spatial technical document
IV	Independent variable
DV	Dependent variable
S	Subject
SD	Standard deviation
L	Frequency of the less frequent sign
T	Total frequency of both pluses and minuses
p	Probability of by chance obtaining L out of T

ABSTRACT

In today's era of dynamic information technology, technical documents are becoming bigger and are updated more frequently than ever before. As a result, people have to spend a huge amount of time and efforts to digest these technical documents. At present, traditional technical writing uses word-after-word narrative writing to produce technical documents. The resulting narrative document often has language ambiguity and an inefficient concept manipulation problem which can cause a lot of difficulty for readers. In this thesis, it is proposed that concept mapping and sentence diagramming are two techniques that have the potential to effectively solve the inefficient concept manipulation and the structural language ambiguity problems of natural language narrative.

The purpose of this research is therefore to offer a solution to the language ambiguity and inefficient concept manipulation problem existing in the traditional narrative technical documents. Specifically, it seeks to answer the question: is it possible to create a new technical writing technique that has its structure similar to the sentence diagramming technique, but is simpler for readers to understand, and can help readers to efficiently manipulate concepts in a text in a manner similar to that of a concept map?

A developmental research method approach was adopted. The research was conducted in two phrases. The first phrase was to develop a new and more effective technical writing technique called 'spatial technical writing' (STW) based on concept mapping and sentence diagramming techniques. The second phrase was to conduct a small exploratory study using students to compare the STW technique with traditional

narrative. The exploratory study used a small pilot experiment with basic quantitative and qualitative measurements.

The quantitative result showed that students achieved a slightly higher mark on comprehension of the narrative text test than the spatial text test. The probability analysis showed that the pilot experiment was not significant. The qualitative result revealed that the main reason that students did not do as well on the spatial text test was because they did not thoroughly understand the STW symbols used in the pilot experiment. Due to the lack of an experimental budget; the pilot experiment couldn't test all STW symbols, and the students didn't receive enough training to understand STW sufficiently. These two confounding variables distorted the pilot experiment and made the results of pilot experiment inconclusive. However there was enough encouragement to continue the research. The result of this pilot experiment will be used to refine the STW technique, and to plan a full-scale experiment in the future.

Finally, the implication of this research is that; if the Internet based STW software is developed, it can help people to digest technical knowledge in a shorter time and with less effort than traditional narrative.

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