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Interactions in a web-based learning environment: creating an online learning community

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University of Wollongong

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**INTERACTIONS IN A WEB-BASED LEARNING
ENVIRONMENT: CREATING AN ONLINE LEARNING
COMMUNITY**

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

DOCTOR OF PHILOSOPHY

from

UNIVERSITY OF WOLLONGONG

by

Shirley Flavia Corrent Agostinho
BInfo Tech(Hons Class 1)

Faculty of Education

2000

DECLARATION

I, Shirley F. Corrent Agostinho, declare that this thesis, submitted in fulfilment of the requirements for the award of Doctor of Philosophy, in the Faculty of Education, 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.

Shirley F. Corrent Agostinho
4 September 2000

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Finally and most importantly, I wish to express my deepest gratitude to my family. To my parents, Bruno and Gemma, thank you for always being there for me. I would like to dedicate this work to my wonderful mother. You are a very special person. Without you, I could not have achieved this. To my daughter, Kara, thank you for your patience and understanding when Mamma had to work on “her thesis”. I hope that you will be proud of me. To my husband, Emidio, thank you for your unshakeable belief that I could do this. You always helped me to stay motivated especially during the times when it all seemed too hard. Thank you for always listening. Thank you for always being there. Thank you for putting up with so much for so long!

ABSTRACT

The educational technology literature is replete with claims that the use of the World Wide Web has the potential to revolutionise education, yet there is little research that substantiates these claims. The literature highlights a gap between visionary rhetoric and current practice. It is argued that such a gap exists because there is not enough detailed description provided about Web-based innovations at the level of interaction and pedagogy. This study addresses this gap by examining the interactions established among students and an instructor in a postgraduate subject delivered using World Wide Web and videoconferencing technologies. The purpose of the study is to inform the evolution of pedagogical strategies for Web-based learning environments. The method of inquiry was a collective case study comprising two cases, which were two implementation cycles of the same subject. Both cases involved two geographically separated groups of students and the technology was used to facilitate interaction between the two groups. The insights gained from the first case were used to redesign the teaching and learning environment for the second case. Data collection occurred through participant observation. Interviews and questionnaires were conducted; documents and artifacts were collected. Data analysis involved the identification of themes and computer-mediated communication (CMC) content analysis. Three questions guided the investigation. (1) What kind of interaction can be established in a technology-supported learning community? (2) What is possible in the technology-supported learning environment that is not possible without the use of technology? (3) What are the perceptions of the instructor and the learners in terms of the learning outcomes generated?

In both cases students interacted with the instructor, with each other and with the content. However, the way in which interaction occurred differed for each case. The role technology played, the subject structure and delivery, and the nature of the assessment tasks, surfaced as influential factors. The use of the technology facilitated opportunities for collaborative learning not easily achieved in conventional face-to-face settings. The instructor perceived effective learning outcomes were generated in both cases and the students in both cases viewed the subject as a positive learning experience although the learning process presented challenges.

The conclusions drawn from this study are: both cases represented a Web-based constructivist learning environment; the change in pedagogy from Case One to Case Two represented pedagogical re-engineering; computer conferencing should be considered in postgraduate subjects as a “means to an end” not an “end in itself”; and there is no single generically applicable CMC analysis technique—it depends on the context in which CMC is used.

TABLE OF CONTENTS

Declaration	ii
Acknowledgments	iii
Abstract	iv
Table of Contents	v
List of Tables	viii
List of Figures	xii
CHAPTER 1: RATIONALE FOR THIS STUDY	1
1.1 Introduction	1
1.2 Background	1
1.3 Issue that Requires Investigation	4
1.4 Purpose Statement and Research Questions	5
1.5 Research Strategy and Rationale	6
1.6 The Context of this Study	7
1.7 Significance of the Study	8
1.8 Limitations of the Study	8
1.9 Thesis Structure	9
CHAPTER 2: THE USE OF THE WORLD WIDE WEB IN HIGHER EDUCATION	10
2.1 Introduction	10
2.2 All Aboard the WWW Bandwagon	11
2.3 “Rhetoric” Versus “Research”	19
2.4 The Many Faces of Web-Based Instruction	52
2.5 Interaction and Pedagogical Strategies	62
2.6 Interactions in a Postgraduate Context	65
2.7 Conclusion	66
CHAPTER 3: RESEARCH METHODOLOGY	68
3.1 Introduction	68
3.2 Research Context—The Emergence of the Two Cases	69
3.3 Research Design	71
3.4 The Process of Data Collection and Data Analysis	83
3.5 Rationale for Judging the “Quality” of this Study	102
3.6 Summary	114

CHAPTER 4: CASE ONE—EDGA957 1996	116
4.1 Introduction	116
4.2 Context	116
4.3 The Process	124
4.4 Themes that Emerged	159
4.5 Discussion	189
CHAPTER 5: CASE TWO—EDGA957 1997	195
5.1 Introduction	195
5.2 Context	195
5.3 The Process	202
5.4 Themes that Emerged	253
5.5 Discussion	259
CHAPTER 6: OUTCOMES FROM THE COLLECTIVE CASE STUDY	269
6.1 Introduction	269
6.2 Context Summary of the Two Cases	270
6.3 Question 1: What kind of interaction can be established in a technology-supported learning community?	272
6.4 Question 2: What is possible in the technology-supported learning environment that is not possible without the use of technology?	285
6.5 Question 3: What are the perceptions of the instructor and the learners in terms of the learning outcomes generated?	292
6.6 Summary	302
CHAPTER 7: LESSONS LEARNED	305
7.1 Introduction	305
7.2 This Study Represents an Example of Pedagogical Re-engineering	305
7.3 The Two Cases Parallel Constructivist Learning Theory	306
7.4 Effective Learning Outcomes were Achieved in the Two Cases	309
7.5 Students Require Scaffolding in the Midst of Technological and Pedagogical Change	311
7.6 Several Web-Based Learning Design Principles Emerged	312
7.7 In Web-Based Learning the Instructor “Wears Several Hats”	315
7.8 There is No Single Generically Applicable CMC Analysis Technique	315
7.9 Recommendations for Further Research	316
7.10 Conclusion	318

REFERENCES	321
APPENDICES	337
A Case One: Initial Pilot Report	337
B Case One: Student Consent Form	338
C Case Two: Student Consent Form	339
D Case One: Student Email Questionnaire	340
E Case One: End-of-Subject Questionnaire	342
F Case One: Post-Subject Student Interview	344
G Case Two: End-of-Subject Web-Based Questionnaire	346
H Case Two: End-of-Subject Questionnaire	348
I Instructor Interview No. 1	353
J Instructor Interview No. 2	354
K Case One: Member Check Cover Letter and Consent Form	358
L Case Two: Member Check Cover Letter and Consent Form	360
M Subject Outline: EDGA957 1995	362
N Computer Laboratory Facilities	364
O Case One: Videoconferencing Facilities	366
P CMC Tools: Live Chat	368
Q CMC Tools: Discussion Forum	369
R CMC Tools: BSCW—Basic Support For Cooperative Work	372
S Subject Outline: Case One—EDGA957 1996	373
T Case One: Description of Weeks 2, 4, 6, 9 and 11	376
U CMC Tools: YAK!	395
V Subject Outline: Case Two—EDGA957 1997	396
W CMC Tools: DISCUS	400
X Case Two: Summary of Asynchronous Discussion Threads and Email Listserv Messages	401
Y Case Two: Description of Subject Episodes 1, 5 and 6	404
Z Case Two: "Notices" from Subject Web Site, Example from Week 6	412

LIST OF TABLES

TABLE		
2.1	The use of the World Wide Web in Education: Features and Affordances (The researcher’s synthesis of the literature)	22
2.2	Examples of research studies that examine/evaluate Internet-based learning implementations in university subject offerings	30
2.3	Examples of research studies that evaluate the effectiveness of Web-based learning	37
2.4	Computer-mediated communication—Perceived educational benefits and limitations	40
2.5	CMC Research—A synthesis of research findings (Romiszowski & Mason, 1996, p. 443-448)	43
2.6	A synthesis of literature about computer conferencing as an aspect of course design—Compiled by Collis (1996b, p. 448-449)	45
2.7	Research on CMC—A snapshot of research conducted from 1996 to 2000	46
2.8	Framework that illustrates the various applications of Web-Based Instruction (Based on Bannan-Ritland et al. 1998)	55
2.9	Web-based Instruction design models—Examples from Khan (1997b)	57
2.10	Examples of design model principles from the literature	57
3.1	Theoretical framework to situate this research study within the Qualitative Research literature	73
3.2	Naturalistic Inquiry Paradigm—The three mandatory requirements (Based on Lincoln & Guba, 1985)	76
3.2.1	Naturalistic Inquiry Paradigm—The five axioms (Based on Lincoln & Guba, 1985)	77
3.3	Characteristics of Qualitative Case Study Research	79
3.4	Definition of Collective Case Study presented by Stake (1994, 1995, 1997)	83
3.5	The five types of data collected in this study	84
3.6	Role of the researcher during data collection	87
3.7	Data collected prior to commencement of each subject	88
3.8	Case One: Data collected during the subject (14 weeks plus a two-week semester break)	91
3.9	Case Two: Data collected during the subject (14 weeks plus a two-week semester break)	92
3.10	Data Collected for both cases after completion of each subject	95

3.11	Level of analysis that can be performed in Case Study Research— A framework developed by the researcher (Based on Merriam, 1988)	97
3.12	<i>Quality</i> criteria for a qualitative inquiry—A framework developed by the researcher	102
3.12.1	Comparative summary of “Trustworthiness” rubrics used in conventional scientific inquiry and naturalistic inquiry (Adapted from Erlandson et al. 1993; Lincoln and Guba, 1985)	105
3.12.2	Establishing Trustworthiness—Techniques applied in this study (Based on Lincoln and Guba, 1985)	108
3.13	Examples of peer debriefing sessions held during the study	111
3.14	Organisational structure of electronic research audit trail compiled for this study	113
4.1	Case One: Student profile of the Wollongong class	122
4.2	Case One: Student profile of the Sydney class	123
4.3	Case One: Summary of discursive tools used during the subject	125
4.4	Case One: Critical incidents that influenced student interaction	126
4.5	Case One: Strategy and tools used by the instructor in the first five weeks of the subject	127
4.6	Case One: Strategies and tools used by students to provide the class with a learning experience	128
4.7	Case One, Week 12: Messages posted in the Discussion Forum (67 messages posted in total)	155
4.8	Case One: Student feedback about the subject being a positive learning experience	162
4.9	Case One: Student feedback about the frustration and stress experienced during the subject	163
4.10	Case One: Mary rises to the challenge—she saw the transferability of her experiences in the subject to her workplace. She realised during the subject that she was learning by doing.	165
4.11	Case One: Student feedback about the use of technology in the subject	166
4.13	Case One: Internet access details for each student	169
4.14	Case One: Student feedback about technical support provided in the subject	170
4.15	Case One: The use of videoconferencing	174
4.16	Case One: Examples that illustrate how student familiarity with content influenced the interaction that occurred in the videoconferencing sessions	177
4.17	Case One: Student feedback about the videoconferencing	180

	room layout	
4.18	Case One: Strategies employed when using the Live Chat and Discussion Forum tools	181
4.19	Case One: Examples of suggestions for improvement offered by students in their evaluation of the subject	191
5.1	Case Two: Student profile of the Wollongong class (on-campus class)	200
5.2	Case Two: Student profile of the Sydney class (the off-campus)	201
5.3	Case Two: Chronological representation of the subject structure	202
5.4	Case Two: Summary of CMC tools used during the subject	205
5.5	Case Two: Seven Subject Episodes	206
5.6	Case Two, Week 2: Four discussion threads created by the instructor in Discussion Forum	212
5.7	Case Two: Student feedback from end-of-subject questionnaire (Question 14)	216
5.8	Case Two: Student feedback from end-of-subject questionnaire about the usefulness of the first online asynchronous group task (Question 14)	217
5.9	Case Two: Discourse categories that emerged in the first online asynchronous group task (Based on Henri, 1992, 1996)	218
5.10	Case Two, Subject Episode 2: Group 1—Messages posted in the Discussion Forum	221
5.11	Case Two, Subject Episode 2: Group 2—Messages posted in the Discussion Forum	225
5.12	Case Two, Subject Episode 2: Group 3—Messages posted in the Discussion Forum	229
5.13	Case Two, Subject Episode 2: Group 4—Messages posted in the Discussion Forum	232
5.14	Case Two: Excerpts from the Live Chat space from Weeks 1 to 3	236
5.15	Case Two: Synchronous Live Chat session, Monday Week 5—Participant entry and exit times, time spent online and number of messages posted by each participant	240
5.16	Case Two: Synchronous Live Chat session, Monday Week 5—The five discourse “moves” that occurred online	243
5.17	Case Two, Subject Episode 4: An additional discourse category—Metacognitive emerged in the online asynchronous class discussion about the article by Gayeski. (Based on Henri, 1992, 1996)	248
5.18	Case Two, Subject Episode 4: Asynchronous online class discussion about the article by Gayeski	249

5.19	Case Two: Student feedback from end-of-subject questionnaire about possible reasons for the lack of online discussion that occurred (Question 9a)	251
5.20	Case Two: Examples of student feedback from end-of-subject questionnaire that illustrate what the students thought about the concept of the non-meeting weeks (Question 8)	260
5.21	Case Two: All respondents in end-of subject questionnaire thought asynchronous online discussion can assist in the learning process	261
5.22	Case Two: Results from Question 16c in end-of-subject questionnaire	262
6.1	Pedagogical Profile of the Two Cases	271
6.2	Summary of interaction established in Case One	275
6.3	Summary of interaction established in Case Two	280
6.4	Summary about the interaction established in both cases	282
6.5	Summary of suggest cooperative learning technique for the Web (Bonk & Reynolds, 1997, p. 173)	287
6.6	Student feedback—Suggestions for subject improvement in Case One	296
6.7	Examples of student feedback from end-of-subject questionnaire in Case Two	297
7.1	Demonstration of learning outcomes generated in this study (Based on the learning outcome taxonomy developed by Jonassen & Tessmer, 1996)	310
T.1	Case One, Week 11: David’s online task—The number of messages posted in each thread and student participation in each thread	391
T.2	Case One: Student feedback about the class process in Week 11	393
W.1	Discussion threads created in the Discussion Forum during Case Two (Thirteen threads created in total)	401
W.2	Discussion threads created in DISCUS during Case Two	402
W.3	Email messages sent to the subject email listserver during Case Two (Twelve messages posted in total)	403
Y.1	Case Two: The three discussion threads created in the Discussion Forum during the first on-campus class	405
Y.2	Case Two, Week 1: Discussion Forum—Sample messages from Thread: <i>Concepts of Implementation</i>	406

LIST OF FIGURES

FIGURE		
2.1	A continuum that illustrates the role WBI can play in a learning environment	54
2.2	Ten dimensions of WBI (Reeves & Reeves, 1997)	55
2.3	A continuum that illustrates the focus needed to be taken in Web-based learning research	64
3.1	The chronological analysis process conducted in this study	101
4.1	Subjects offered in the IT strand of the education postgraduate curriculum (Taken from the EDGA950 subject outline)	117
4.2	Case One: Subject Web site Home Page	119
4.3	The model that emerged in Case One	125
4.4	Case One: The ten emergent themes clustered into three categories	189
5.1	Case Two: Subject Web site Home Page	198
5.2	Case Two: Conceptual representation of the subject	204
5.3	Case Two: Web site modified in Week 2 to include <i>Summary of Discussions</i>	213
5.4	Case Two: Group online summary submission form—accessible from <i>Summary of Discussions</i>	214
5.5	Case Two, Subject Episode 2: Group 1 Participation analysis	219
5.6	Case Two, Subject Episode 2: Group 1 Content analysis	223
5.7	Case Two, Subject Episode 2: Group 2 Participation analysis	225
5.8	Case Two, Subject Episode 2: Group 2 Content analysis	226
5.9	Case Two, Subject Episode 2: Group 3 Participation analysis	228
5.10	Case Two, Subject Episode 2: Group 3 Content analysis	228
5.11	Case Two, Subject Episode 2: Group 4 Participation analysis	231
5.12	Case Two, Subject Episode 2: Group 4 Content analysis	233
5.13	Case Two, Subject Episode 4: Participation analysis	248
5.14	Case Two, Subject Episode 4: Content analysis	249
6.1	Graphical representation of Case Two, Subject Episode 2	289
6.2	Graphical representation of Case 2, Subject Episode 6	290
7.1	A Framework for Incorporating a Web Site in a Subject	312
Y.1	Case Two: The revised Web site Home Page implemented in Week 6	409