1-1-2004

An examination of the capabilities required by university tutors in online learning environments and the factors affecting the relative importance of these capabilities

Douglas Reid
Edith Cowan University

Edith Cowan University

Copyright Warning

Edith Cowan University

Doctoral Dissertation

An examination of the capabilities required by University tutors in online learning environments and the factors affecting the relative importance of these capabilities.

A thesis submitted to the Graduate School in partial fulfilment of the requirements for the

Degree of Doctor of Philosophy and Social Sciences

By

Douglas Reid

Principal Supervisor: Dr. Paul Newhouse

School of Education
Faculty of Community Services, Education and Social Sciences
Edith Cowan University, Western Australia

December, 2004

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

ABSTRACT

The Internet is influencing, some would say revolutionizing, most aspects of our society, including distance education (Simonson, Smaldino, Albright, & Zvacek, 2003). There has been a worldwide movement to implement online education technologies in Universities. In Australia, use of these technologies has coincided with the development of pedagogies to improve the merging of distance education and asynchronous, anywhere / anytime learning (Cashion & Palmieri, 2002; Harper, Hedberg, Bennett, & Lockyer, 2000). However, using technology to teach at a distance requires different capabilities that traditional face-to-face teaching. In the revolutionary situation which distance education finds itself, online tutors find themselves acting as pathfinders in uncharted territory finding their way through the ether in the hope of discovering what works in this new environment.

The purpose of this study was to examine the online learning milieu to identify what capabilities are required of online tutors. To do this, it was necessary to determine what environmental factors affect online tutor capabilities and what the relationship was between the capabilities and the factors. This was accomplished by exploring the perceptions of online tutors, students and unit coordinators to discover what they felt are the capabilities possessed by effective online tutors. This study was grounded within text-based tertiary online learning environments at a public University in Australia.

The research employed an ethnographic design with the major methods of data collection being interviews of online tutors, students and unit coordinators in addition to electronic and face-to-face observation. Data was analyzed using techniques of qualitative analysis recommended by Burns (1994), Gladwin (1989), and Goetz and LeCompte (1984).

This study identified critical online tutors sub-capabilities as well as thirteen environmental factors which have a mediated affected upon these sub-capabilities.

The sub-capabilities were based upon five capability categories created after an exhaustive review and distillation of the literature. The unearthed environmental factors emerged from the analysis of the collected data which allowed the relationship between the capabilities and factors to be investigated.

There are major implications stemming from this research. One was the formation of a model of the mediated relationships between online tutor capabilities and environmental factors which affect them. This included the creation of a framework of capabilities and sub-capabilities specifically for online tutors and the identification and organization of environmental factors which affect online tutor capabilities. Another implication of this research was ascertaining the disparity between the perceptions of tutors, students and coordinators which need to be considered by tertiary institutions and researched in more depth.

DECLARATION

I certify that the thesis does not, to the best of my knowledge and belief:

(i) incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;

(ii) contain any material previously published or written by another person except where due reference is made in the text; or

(iii) contain any defamatory material.

Signed [redacted]

Date 14-12-2004

ACKNOWLEDGEMENTS

To my principal advisor, Paul Newhouse.

Thanks for all the help and guidance you gave me along the way. Things would have been much more daunting if you hadn't helped me find my way.

To Jeremy Pagram and Jan Herrington,

For reviewing my proposal and helping me get underway.

To Joe Luca, Michael Spector and Andrew Fluck,

For examining my work.

To Tony Fetherston,

Thanks for all the positive feedback and encouragement. Now if I could just read your handwriting, everything would be great!

To the tutors, unit coordinators and students who must remain anonymous,

Thanks, this couldn't have happened without your input.

To Rhonda Oliver, Jan Gray and Vaille Dawson,

Thanks for the guidance about writing and life.

To everyone who listened to me talk about this or gave me feedback after reading part of it,

Thanks for making the effort. I really appreciate it. I promise to stop being obsessed with it … soon.

DEDICATION

To My Folks, Craig and the late Jackie Reid

There is not enough room on this page to even begin to thank you in the manner in which you deserve to be thanked. I love you both so much.

To My Guardian Angels,

I have been very lucky to have you in my life.

Rochelle and her family, Cory, Pius, Caroline and the kids, Michele, Vickie, The Jeffersons, Stuart, Jemmy, Kellie, The Pandora's, the denizens of the Postgrad lab and the School of Education, The Spirit of Megan's, Paul, Kylie, Nanny & Da, Grumpy & Grandma.

"We dare not lengthen this book much more, lest it be out of moderation and should stir up men's antipathy because of its size."

Aelfric, Abbot of Eynsham (c. 995-1020)

" If you start to feel good during a marathon, don't worry. You'll get over it."

Anonymous

A man generally has two reasons for doing a thing. One that sounds good, and a real one."

J. Pierpoint Morgan

TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

CHAPTER ONE

1.0 Introduction

This research study explored the relationships between the capabilities exhibited and/or required by tutors in online education environments and the factors from those environments which affected those capabilities. The introduction to this study will first present a background of the study, followed by the purpose, and later, the significance of the study. The statement of the problem as well as the research questions will be presented before the definition of terms used in the study. The final section of the introduction will be a description of how this thesis is organized.

1.1 Statement of the problem

There is a lack of literature on the capabilities required by online tutors (Cyrs, 1997; Fletcher, 2003; Reeves, 2003) and the environmental factors which affect tutor capabilities (Cashion & Palmieri, 2002; Clarke, Butler, Schmidt-Hansen, & Somerville, 2004; Levy, 2003; Schoenfeld-Tacher & Persichette, 2000). This study sought to discover the capabilities required by online educators in various online learning situations, what factors affected the tutor capabilities, and to identify the relationship between the factors and the capabilities.

There was an underlying belief in this investigation that there is a likelihood that tutors in online learning environments would require particular capabilities that would be connected to various components of the teaching and learning environment. In the hiring and training of tutors it is important to know what capabilities are required, which are essential and which features of the learning environment may impact on those capabilities. It is currently unknown what these capabilities are, their relative importance and relationship to factors and components of the online learning environment. Much is known for face-to-face tutors but not for online tutors, and the two are likely to be different (Cyrs, 1997; Furst-Bowe,

1996; Thach & Murphy, 1995; Wilson & Stacey, 2003). This idea is supported by the argument "teaching with technology to learners who are not physically located in the same site where instruction is taking place requires a different set of skills and competencies than traditional education" (Simonson et al., 2003). This study limited itself to considering tutors in online text based tertiary education settings in Australia although the findings may be able to be generalised to other online educational contexts. To assist this a rich description is provided both of the setting and the participants.

1.2 Background to the study

With the increased efficiency and reliability of postal services in the late 1900s, distance education became more popular in society in the form of correspondence courses (Phipps & Merisotis, 1999; Simonson et al., 2003). As radio, and later, television entered society, they too affected distance education (Simonson et al., 2003; Stevens-Long & Crowell, 2002). More recently, the Internet has had a profound impact with the creation of new delivery and communication opportunities for distance education (Oliver & McLoughlin, 2001; Volery, 2001). As with all new approaches to human activity, there is a process of reorganising thinking about which Rogers (1995) describes as diffusion of innovation. "The process of change can also be a time of tension, for both the change-agent and the society affected" (Fluck, 2003p.2).

The Internet is influencing, some would say revolutionizing, most aspects of our society, not just distance education (Howell, Williams, & Lindsay, 2003; Simonson et al., 2003). As it has only been available to the public since the early 1990s, it is a new phenomenon and there will be attempts to impose older, more traditional approaches to control its use in education (Fraser, 1999). These older approaches are limited by earlier technologies and therefore many believe that to realise the benefits of the new technologies of the Internet educators need to start preparing to use them with new pedagogies (McDonald & Postle, 1999).

There has been a worldwide movement to implement these online education technologies in Universities. In Australia, use of these technologies has coincided with the development of pedagogies to improve the merging of distance education and asynchronous, anywhere / anytime learning (Cashion & Palmieri, 2002; Harper et al., 2000). This has included measures such as employing instructional designers to create online courses or units and then employing tutors to implement the learning programs. As with any educational program, its success is largely dependent on its implementation (Clarke et al., 2004; De Cubber, 2001; Levy, 2003; Volery, 2001).

1.3 Purpose and Rationale of the study

The purpose of this study was to consider the question of what capabilities tutors require to teach effectively in an online educational environment. The researcher had taught in public schools for many years, taken units with online components and has taught in a distance education mode in his home country, Canada. Throughout these educational experiences it has not been clear how a good online teacher would behave and what he would need to know how to do and learn to be effective.

The researcher's experience in traditional classrooms was that students are unique individuals. Also, classes are greatly affected by the interaction of students in the class and the impact of that student interaction on the interaction with the teacher, is similar to the findings of a number of authors (Beaubien, 2002; Hirumi, 2002; R. Oliver & McLoughlin, 2001; Scagnoli, 2001; Schoenfeld-Tacher & Persichette, 2000; Schrum & Hong, 2002). The statement "there are inevitable differences between courses where the student is present and those where all communication takes place at a distance" (Clarke et al., 2004) paralleled the researcher's experience in education.

Initially there were four issues that motivated this study. Firstly, the question of how the differences in online students and environments affect interactions, particularly tutor-student interactions. The second motivator for conducting this study was to develop the framework of appropriate methods for conveying techniques and

knowledge to current and future online educators (Salmon, 2000; Spector & de la Teja, 2001). Thirdly, the educational practice of using the teacher's presence has been successful in traditional classrooms (Brabazon, 2002). But it is not clear how to translate this type of educational approach online. Finally, definitions concerning teacher roles within online learning lacked clarity (Cashion & Palmieri, 2002).

While there is a substantial body of literature about online learning there is very little regarding the capabilities or even experiences of online tutors. Therefore this study explored what educational stakeholders (tutors, students and unit coordinators) believe are the capabilities exhibited by successful online tutors. Being able to facilitate student achievement to a set base proficiency level in the prescribed educational course material was used as a benchmark for the term 'success' in this study. The focus on the role of an online tutor was one of improving clarity of educational roles and definitions. This decision removed the unit development and control of content roles often associated with teachers but often not the responsibility of university teachers in online classes with large enrolments.

One creator of inertia to pedagogical change has been the lack of formal and informal apprenticeship opportunities as there has been no one to observe in order to learn by watching when it comes to new things like online tutoring (Salmon, 2000; Sherry & Morse, 1995). In the revolutionary situation brought about by the Internet which distance education finds itself, online tutors find themselves navigators in uncharted waters finding their way in cyberspace in the hope of discovering what works in this new world. In hindsight, the appropriate actions will appear obvious, much in the same way we take page numbers in books for granted, not realizing that it took many years after the invention of the printing press for someone to come up with the notion of putting numbers on the pages to aid the organization of books (Kay, 1996). This parallels the development of the bookshelf (Petroski, 1999) and the upright, semi-immovable designs we now take for granted which took hundreds of years to evolve.

1.4 Definition of terms

In this study, the definition of terms is standardized to a greater extent than what is evident throughout the literature. There are a number of terms and phrases that are used in a variety of ways throughout the literature. This includes words used to describe the person or persons who are in charge of an online learning experience. The terms "tutor," "competencies," "capabilities," "technology," and "online education" will be defined as they are used throughout this thesis.

The term "tutor" will be used in this study because it is defined simply as one charged with the instruction and guidance of another, not with creating the instructional material to be learned. This term encompasses a vast array of educational roles. Other terms used in the literature include:

Facilitator - one who makes something easier: helps to bring about.
Instructor - one that instructs.
Teacher - one whose occupation is to instruct.
Lecturer - a person who lectures, especially as a teacher in higher education, such as at university.
Associate faculty – support learning by tutoring and mentoring students, though they had no control over content that others had created (Maeroff, 2003).
Course Implementer – the person in charge of interacting with students (Cohen, 2004).

The terms are mainly dictionary definitions and as such, do not cover how they are perceived in different settings. The *Course Implementer* (Cohen, 2003) and *Associate faculty* (Maeroff, 2003) are the definitions above which were not taken from the dictionary.

Competencies is a term used throughout the literature to describe many different descriptors of tutors and their actions. Competence is broadly defined for the development of well-qualified individuals who possess the required knowledge and skills (Howsam & Houston, 1972). The terms attitudes, strategies, and techniques are used by White & Weight (2000) for their competencies. Behavioural

recommendations is the term used by Berge (1995), while Cyrs (1997) calls them skills and strategies. The term competencies is used to describe knowledge, skills, and abilities by Furst-Bowe (1996), which is opposed to Schoenfeld-Tacher & Persichette (2000) who separate skills apart from competencies that include knowledge, character traits, abilities and strategies. According to International Board of Standards for Training, Performance and Instruction (IBSTPI) (International Board of Standards for Training, Performance and Instruction, 2003), a competency involves a knowledge, skill or attitude that enables one to effectively perform the activities of a given occupation or function to the standards expected in employment. Competencies are also described as a related set of knowledge, skills, and attitudes that enable a person to effectively perform the activities of a given occupation or function in such a way that meets or exceeds the standards expected in a particular profession or work setting (Spector & de la Teja, 2001). They add that competencies are also dynamic and largely depend on social context.

A less frequently used term in the literature that is closely related to competencies is "capabilities". This is a term which is used almost interchangeably with competencies by organizations such as IBSTPI (International Board of Standards for Training, Performance and Instruction, 2003). They publish a glossary of terms including the following:

Competency: a knowledge, skill or attitude that enables one to effectively perform the activities of a given occupation or function to the standards expected in employment.

Advanced capabilities: those knowledge, skills, and judgments demonstrated by experienced and expert designers. Applied to both competencies and performance statements.

Essential capabilities: those knowledge, skills, and judgments that all designers should be able to demonstrate. Applied to both competencies and performance statements.

Performance statement: an explanation of activities comprising a competency statement.

This study will use the term capability rather than competency due to the similar nature of the definitions and because of the preconceived values associated which

each term. In his teaching experience, the researcher felt that competencies seems to imply negative questions about competence while capabilities seems to focus on the positive abilities of the tutors and what they are capable of achieving. For the purpose of this study, the term 'capability' will be defined as follows:

capabilities: those knowledge, skills, and judgements that enables a tutor to perform his/her role.

Technology is defined as the practical application of knowledge especially in a particular area. The term "technology" in this study will be narrowly defined, limiting it to computer related technology. Therefore, computers will be considered technology while pencils, pens and the like will not be considered technology.

The term "online education" will be defined as the action or process of educating or of being educated connected to, served by, or available through a computer and telecommunications system. Teaching and learning in a non-face-to-face educational environment.

1.5 Statement of the research question

The main purpose of this study is to examine the capabilities exhibited by online tutors taking into account various factors that may affect these capabilities in the online educational environment. There are a number of secondary research questions, which contributed to addressing the main research question. The main research question is; 'what are the relationships between text-based online learning environment factors in tertiary education and the required capabilities of tutors as perceived by the stakeholders?'

1.5.1 Secondary questions

There are three secondary questions addressed throughout the study, the first being,

1. What are the main capabilities required by online tutors for typical text based online educational environments as perceived by the tutors, the students, the unit coordinators and an independent observer?

This study was concerned with identifying the capabilities required by online tutors . To avoid limiting the scope of the study to just one group of educational stakeholders, this secondary question was designed to tender an overall picture of the situation from the major groups of stakeholders, namely students, tutors and unit coordinators (administrators). Some studies examine distance education in higher education and refer often to students and tutors as two groups which have been studied to greater and lesser degrees (Cashion & Palmieri, 2002; Phipps & Merisotis, 1999). Phipps & Merisotis present a difference between student and tutor views and suggest that more research needs to be done on the tutors' role in distance education. Cyrs (1997) presents some of the differences in views between tutors and administrators in what is needed to implement quality teaching at a distance. The difference in the views of the three groups of stakeholders; students, tutors and unit coordinators, affected the capabilities required by an online tutor as students and unit coordinators valued certain capabilities differently. This difference needs to be addressed.

Throughout the literature, there are articles which present a large number of capabilities in various states of organization (Berge, 1995; Goodyear, Salmon, Spector, Steeples, & Tickner, 2001; Gustaffson & Gibbs, 2000). Furst-Bowe (1996) and Salmon (2000) have detailed, comprehensive lists of competency areas and there are also discussions of levels of competence needed by online tutors in regard to various capabilities. Schoenfeld-Tacher & Persichette (2000) examined the literature for factors that affect the capabilities required by online tutors. The extensive list of

factors they found in the literature includes subject matter, context, delivery medium, learner variability, teacher preparation and experience in both content and pedagogy plus the synergy and inter-relationships among the factors.

2. What are the factors that affect the capabilities required by online tutors and how do these relate to the critical capabilities as perceived by the main stakeholders?

The list of factors presented (Clarke et al., 2004; Levy, 2003; Schoenfeld-Tacher & Persichette, 2000) needed to be examined to explore the possibility that there were more factors than previously identified and what was the relative importance of any additional factors in this setting. Also, there was not any sort of ranking system in place to determine which capabilities were more critical than others when perceived by the main stakeholders. There was a lack of literature regarding how critical the capabilities are for online tutors. There is little evidence regarding in which capabilities have been considered more critical or most critical for the success of an online tutor.

3. Do the factors that affect online tutor capabilities modify the essence of the online tutor capabilities?

More research needed to be done on whether the factors related to the online learning environment do modify the essence of the capabilities to support or dispute the findings of Kupritz (1999). The way people communicated through different contextual mediums was examined by Kupritz (1999). The argument was put forth that cues that facilitate meaning vary depending on the communication medium. Subject matter and delivery medium were two other factors that affect the capabilities required by online tutors (Kupritz, 1999; Schoenfeld-Tacher & Persichette, 2000). This complements the argument that competencies are dynamic and largely depend on social context (Spector & de la Teja, 2001). Therefore, this question asks whether the nature of the online tutor capabilities is consistent both before and after the capabilities interact with the factors which affect them.

1.6 Significance of the study

While it is clear that online learning is expanding rapidly (Goodyear et al., 2001; Ron Oliver & Herrington, 2001; Simonson et al., 2003), it is not clear whether this is translating into improved or even equivalent learning outcomes for students. There are a number of studies which explore the issue of assessment of online learning, both student work and of the offering as a whole (Dominguez & Ridley, 1999; McDonald, 2002; Ryan, 2000). There is evidence in the literature that online students want to be involved with units that have a tutor to help them with the process of learning online (Cashion & Palmieri, 2002; Furst-Bowe, 1997; Goodyear et al., 2001; Hazari & Schno, 1999; Masie, 2000; Palloff & Pratt, 2002; Pascual, Murriello, & Suarez, 2000). However, there is little detailed literature regarding the capabilities required to be an effective online tutor in relation to the roles they are required to play (Fletcher, 2003; Reeves, 2003; Wilson & Stacey, 2003).

This study addressed this gap in the literature regarding the capabilities required by online tutors. The study did not focus on the role of online unit designers, but rather concentrated on the tutors' interaction with the students, not the creation of the online unit, such as the course implementer role (E. Cohen, 2003). According to Cyrs (1997), there is a need for the development of specific online skills for tutors. Investigations have shown that there is a lack of research into the tutoring experiences through online delivery (Brace-Govan & Clulow, 2000). In fact, Phipps & Merisotis (1999) examined the literature regarding online education and analysed it to find that there are gaps which need to be addressed, including the role tutors play in the process of online distance education.

1.7 Organization of this thesis

This section of this thesis has introduced the study, presented reasons for the need to conduct the study and explained the research questions. The next chapter will review the current literature to provide a theoretical background and framework for the study. Following the literature review, the method of data collection is presented in

chapter 3 including details of the design of the study and the sample which was examined. A detailed explanation of the analysis process is presented in chapter 4 then followed by case studies of the examined units in chapter 5. The discussion is in chapter 6 which is followed by the final chapter of the thesis which includes a summary of the findings, review of the data sources and recommendations for further study. A list of references and appendices is included at the end of the thesis.

CHAPTER TWO

2.0 Literature Review

The purpose of this chapter is to review the literature in the fields of online education and tutor capabilities. This involves an exploration of the definition of online education in its various forms and how it differentiates from other technology-based forms of instruction, such as computer-based training or computer-aided learning. Next, an overview of current research findings regarding online distance education is provided, including a review of how online distance education can be delivered and the technologies needed to deliver various types of online education. Finally the literature involving tutors' and their capabilities will be explored focusing on online tutor capabilities analyzed across the different delivery methods used for online education.

2.1 Education at a distance

The focal point of this section is on education at a distance where students and tutors do not necessarily meet in a face-to-face environment. The broader concept of distance education will be introduced to lead into the narrower concept of online education. A presentation of information about online education will include four main points: delivery technology, provision of online education, research into online education and teaching and online education.

2.1.1 Distance education

Distance education is different from traditional face-to-face education (Peregoy, 2000). Distance education is a form of education where the learner and the tutor do

not have to be in the same place at the same time. It is possible for the learner and tutor to meet face to face on occasions but the majority of the teaching and learning situations are not conducted this way. Traditional distance teaching is usually correspondence that is delivered in text form, either in books or other paper-based materials (Duggleby, 2000). As such, distance education has a large asynchronous component to it while retaining a synchronous component through the potential use of telephone, fax and radio. Distance education can remove the students' need to travel to and from the location of the instruction (Brace-Govan & Clulow, 2000).

There are a number of online education benefits for students (S. Smith, Smith, & Boone, 2000). Distance education students desire to improve educational conditions for themselves. This includes improving their learning situation and often determines when the educational interaction takes place, how long it occurs and its location (Cashion & Palmieri, 2002). Another important aspect of distance education from the students' perspective is the savings made in terms of time and money. Many people do not have the time or desire to experience the traditional residential university life (Carr-Chellman & Duchastel, 2000). This adjustment in the educational paradigms shows a shift toward the training and professional development of working professionals who are among the people who are not traditional students.

2.1.1.1 Origin of distance education

There are a number of interpretations of the origins of distance education. They agree upon critical points such as the timeline in the 1900s as well as the increased efficiency and reliability of postal services in that era (McDonald, 2002; Phipps & Merisotis, 1999; Stevens-Long & Crowell, 2002; Sumner, 2000). There is also agreement about the correspondence course nature of the offering. The timeline of delivery technologies from mail, radio, television and finally the computer is presented by Stevens-Long and Crowell (2002).

2.1.2 Online education

In contrast to the traditional form of distance education, online education is seen by some as the teaching medium of the future (Brace-Govan & Clulow, 2000; Lockwood, 2001; Westera & Sloep, 2001). An online course primarily uses Internet-based technologies to deliver content and facilitate some communication (Carr-Chellman & Duchastel, 2000). In their definition, there is no mention of distance education until they compare the use of a sophisticated computer infrastructure which is not present in traditional distance education. In many ways, online learning has similarities with a correspondence course as both are educational opportunities not limited by proximity and mostly asynchronous in nature.

A variety of definitions exist for online education and web-based education (Bennett, Priest, & Macpherson, 1999; De Cubber, 2001; Kaufman, Watkins, & Guerra, 2001; Ko & Rossen, 2004; Moskal & Dziuban, 2001; Palloff & Pratt, 2002; Volery, 2001). Online instruction is also referred to in the literature as web-based instruction (Volery, 2001) and cyber education (Moskal & Dziuban, 2001). Volery also defines online delivery as a type of distributed learning over the Internet. Many online offerings are basically text-based courses with the addition of a multimedia component (Palloff & Pratt, 2002). Multimedia offerings were not accessed much compared to the text material in the experience of (Bennett et al., 1999). They offer some suggestions as to why that might be but they did not strive to measure these phenomena in a structured way. This leads to the technology used to deliver educational content to students.

2.1.2.1 Delivery technology in online education

There are six ways that distance delivery technology are used according to Furst-Bowe et al. (1996). They include Video-conferencing, Audio- conferencing, Two-way video systems, One-way video systems, Computer conferencing, and Audiographic systems. Another organization schema includes Pre-recorded media, Two-way audio, Two-way audio with graphics, Two-way audio with one-way video, Two-way audio/video, and Desktop two-way audio/video (Simonson et al., 2003). Detailed descriptions of delivery technology will be presented in two categories: video systems and computer mediated communication.

2.1.2.1.1 Video systems

A number of authors discuss video usage in online education (Cyrs, 1997; Kouki & Wright, 1999; McGhee & O'Hagan, 2001; Schoenfeld-Tacher & Persichette, 2000; Simonson et al., 2003). There is little attempt made in the literature to distinguish between the categories of video systems of video-conferencing, two-way video systems, and one-way video systems. Both (Cyrs, 1997) and (Kouki & Wright, 1999) combine the video systems together as if all the various systems need the same tutor capabilities. The synergy and interrelationships of subject matter, context, delivery medium, learner variability, teacher preparation and experience in both content and pedagogy allows for the identification of broad patterns of skills and capabilities according to (Schoenfeld-Tacher & Persichette, 2000). Since video systems are more than one delivery medium, this presents a conflict between what Schoenfeld-Tacher and Persichette argue for and what Cyrs and Kouki and Wright put forward.

There is a difference between the video systems presented by (Furst-Bowe et al., 1996). One-way video allows the student to see and hear the tutor on their computer monitor but does not allow the tutor to observe the student. Two-way video allows both the student and tutor to observe each other. Video conferencing potentially allows for a group of people to observe each other at one time.

These different video systems require varying capabilities of the tutor. Video conferencing requires group facilitation skills which are not necessary with the other systems. One-way video limits the visual feedback from the students so the tutor needs to use non-visual cues to determine how the students are proceeding. Two-way video requires the use of pedagogy which may not be appropriate with the other systems.

2.1.2.1.2 Computer mediated communication

In contrast to the amount of writing available on video systems, there is a great deal based on computer conferencing which utilizes computer mediated communication (CMC) (Bennett et al., 1999; Benson, Hardy, & Maxfield, 2001; Berge, 1995, 2000;

Bernath & Rubin, 2001; L. Cooper, 2001; Eastmond, 2000; Gustaffson & Gibbs, 2000; Kimball, 1995; R. Oliver & McLoughlin, 2001; Ryan, 2000; Salmon, 2000; Volery, 2001; White & Weight, 2000). This method of delivery is primarily text based and includes many computer dependent functions like email, bulletin boards, threaded discussions and chat.

Many authors present their experience using specific computer mediated communication (CMC) applications to aid in the delivery of online education. For example, TopClass is written about by Bennet et al. (1999) and White (2000) while WebCT is presented by Gustaffson and Gibbs (2000). Other CMC applications of this ilk include Blackboard and Web Course in a Box.

There are capabilities which tutors use when dealing with CMC. Technical knowledge and the ability to troubleshoot students' technology problems are two which are initially valued at the start of a course or unit of study. The facilitation of groups and to provide quality feedback in a text-based environment are others which gain in importance as a semester progresses. These are similar but not necessarily identical capabilities to what tutors use with various video systems.

2.1.2.2 Providing online tertiary education

Tertiary education has been seen as a critical component to the development of modern Western societies, but it requires funding. There is a constant pressure to improve the quality and cost-effectiveness of tertiary education and online education is seen by some to be a way to reach new students, alleviate capacity constraints and to capitalize on emerging marketing opportunities (Volery, 2001). There is also pressure on educational institutions to offer web-based courses to meet economic and student demands as was noted by Dabbagh (2000).

2.1.2.2.1 Motivation for providing online education

There are a great number of reasons for providing tertiary level online education. Boyd, Fox and Herrmann (2000) have created a thorough list of motivators for academic staff to take their educational materials online. Some of their motivators include:

1. The drive to use electronic technologies in teaching and learning;
2. A perceived cost-saving for online courses;
3. Increased competition for "clients";
4. A greater demand for higher education places but no increase in funding;
5. More learners with diverse needs;
6. Demand for more client responsiveness;
7. Open and flexible courses; and
8. A need to seek alternatives to government funding

The motivators for institutions have much in common with this list of motivators for staff. Institutions have the belief that online education is more cost effective than traditional face to face education and online education can have a broader reach of influence (Bronack & Thornton, 1999; Palloff & Pratt, 2002). In Australia, the UK and the USA, there is a governmental push for institutions to move Information and Communication Technology (ICT) to be an integral link in the chain of lifelong learning. This push is a motivation for institutions to move toward more online education (King, 2001). However, the financial arguments institutions use as motivators to take courses online are disputed (Bennett et al., 1999). They argue that online courses are not cheaper than face-to-face and traditional distance education. The same authors also argue that the savings of publishing educational material for the institution, it may not be a savings for a student who has to invest a sizable amount of money into the hardware, software and Internet access which would not be a necessity in a traditional face to face course. They appear sceptical about the administrative belief that the use of new technologies for course delivery will attract students.

Despite these shortcomings, there are pedagogical motivations for providing online education. Some authors provide evidence that students with Internet access perform better on certain intellectual skills argue Berge and Mrozowski (1999) while they examined barriers to online teaching. Fraser argued in 1999 that the World Wide Web would revolutionize educational pedagogy much the same way the motion picture changed dramatic performances. He argued that good teachers operate on many modes to communicate the mental models of one's discipline and the Internet is a powerful tool to help with this communication.

2.1.2.3 Approaches to online education

There are a variety of approaches people take to teaching an online course (Carr-Chellman & Duchastel, 2000; Cashion & Palmieri, 2002; Fontaine, 2002; Matuga, 2001; Salmon, 2000). The themes in the literature lead to three major pedagogical categories which can be sub-categorized. The categories are: Teaching pedagogy; Training pedagogy; and Sharing / Discussing. Each of these categories will be discussed in greater detail with examples from the literature.

2.1.2.3.1 Teaching pedagogy

There is a great deal of literature dealing with teaching students. Salmon (2000) lays down a detailed, organized structure she calls her Five Step model of teaching and learning online. The steps are:

1. Access and Motivation;
2. Online Socialization;
3. Information Exchange;
4. Knowledge Construction; and
5. Development

Salmon details each step into a technical and an e-moderating section. The technical aspect of *Access and Motivation* is setting up a system and getting learners to access it to make sure it is working. The e-moderating aspect of *Access and Motivation* is basically to welcome and encourage the learners that are starting the educational course or unit. For *Online Socialization*, the technical aspect involves making sure that messages can be sent and received. The e-moderating aspect of *Online Socialization* includes familiarizing the students with the process of online education and providing bridges between cultural, social and learning environments in an online environment. For the third step, *Information Exchange*, searching and personalizing software are the technical aspects while facilitating educational tasks and supporting the use of learning materials are the e-moderating aspects. The fourth step, *Knowledge Construction*, is described as having conferencing as its technical aspect and the facilitation of the educational process as its e-moderator aspect. The final step in Salmon's Five Step model is *Development* whereby providing links and

information outside closed conferences is the technical aspect while supporting and responding to learners is the e-moderation aspect.

Salmon also describes the level of interactivity between individuals. She suggests this involves either one to one, one to many, many to many or many to one. This variation in interactivity depends upon each learner's current position on the model. There is an increase in the amount of interactivity in Salmon's model in step two, *Online Socialization*. That interaction plateaus at its highest level in steps three and four, *Information Exchange* and *Knowledge Construction*, before lowering in the fifth step, *Development*. It is evident that the pedagogical approach of the tutor will relate to both perceptions of tutor competencies and course factors affecting these competencies.

There are many examples presented by authors describing teaching competencies in different ways. A break down of the ideal online course which describes key issues facing University level courses is stated by Carr-Chellmen and Duchastel (2000). Six different ways to teach online University courses is described Levin, Levin and Waddoups (1999). One of many articles which compare online courses to their face to face counterparts at University is Cooper (2001). There are many others who define teaching as "to guide the studies of" including: Berge (1995), Boyd, Fox and Herrmann (2000), Cooper (2001), Duggleby (2000), Gustaffson and Gibbs (2000), Lamb and Smith (2000), Postle and Ellerton (1999), Salmon (2000), Schoenfeld-Tacher and Persichette (2000), Tam (2000) and White and Weight (2000). "To guide the studies of" is a broad definition, which covers other more focused concepts, found in the literature like instruct, educate and train.

2.1.2.3.2 Training pedagogy

There are many articles regarding e-training available to the public. Their corporate focus is very evident. A report entitled Corporate E-learning explains that corporate e-learning is also known as e-training (Urdan & Weggen, 2000). There is a difference between training and the more broad term, education. Reid (2001) describes the word "training" as typifying the type of instruction in a workplace environment. By definition, training means practical instruction or drill, as to acquire a skill. Training has a passive quality to it, as if a person were an empty

vessel to be filled with learning from an outside entity. There needs to be a different approach to tutor interaction with students depending on the desired educational outcome. Learning one specific skill in a work place would not be the same as learning about theories and concepts presented in many higher degree courses.

2.1.2.3.3 Sharing / discussing

Informal educational experiences can include being a member of an online discussion forum. Berge and Collins (2000) present a version of professional development involving an electronic discussion group (EDG). They argue that an e-moderator is not technically required for a group such as this but essential in creating a supportive environment. Discussion forums are a part of many online units but are also found separate from any formal course. Online discussion forums are places where participants can share and discuss whatever the group decides to focus on, be it environmental health standards, the history of the Boer War or anything in between. This is a sharing and discussion area which is not usually considered a formal education venue by those involved, especially the moderators who do not consider themselves teachers or instructors.

2.1.2.4 Research into online education

There are topics within online education which have a great deal written about them (Cashion & Palmieri, 2002). There are research categories concerning students, course design, how to run a course online from an academic and administration standpoint, how to examine the quality of a course offered online and barriers to online education. These groups seem to take up most of the literature regarding online education. The literature was examined and analysed to find that there were gaps which needed to be addressed (Phipps & Merisotis, 1999; Reeves, 2003). They found that there was almost no mention of the role online tutors play in the online distance education process. There was a brief comment that faculty issues like workload, professional development, and technical support received the least attention in the literature they reviewed. There are five general themes presented throughout the research on online education. These five themes of research are: Student Factors; Implementation Issues; Course Design; Quality Assurance; and Barriers to online education. These themes will be discussed in order next.

2.1.2.4.1 Student factors

Student factors such as student satisfaction, attitudes of students and student achievement figure prominently in online education literature (Beaubien, 2002; Brewer, 2001; L. Cooper, 2001; Darmawan, 2000; Dominguez & Ridley, 1999; Kroder, Suess, & Sachs, 1998; O'Malley, 1999; R. Oliver & McLoughlin, 2001; Phipps & Merisotis, 1999; Postle & Ellerton, 1999; Rowley, 1997; Schrum & Hong, 2002; Simpson, 2003). Student attitudes concerning ICT and the impact of these attitudes on student usage of ICT during an online course were examined (Darmawan, 2000). This study also investigated the effect formal and informal student feedback had on ICT use. Feedback from students will relate to both perceptions of tutor capabilities and course factors affecting these capabilities (Moskal & Dziuban, 2001).

Student feedback is one student factor that plays a role in the evaluation of the effectiveness of online education (Cashion & Palmieri, 2002; Tyler, Green, & Simpson, 2001). There are detailed examples of how courses should be evaluated that are based on student factors such as online student achievement (Dominguez & Ridley, 1999). They explored what they call an alternate way to assess online courses. The effectiveness of online distance education is usually measured by what is encapsulated within student factors (Phipps & Merisotis, 1999; Rowley, 1997). They include student outcomes, student attitudes and student satisfaction as the three main measures used to determine whether an online course is effective or not. Student feedback as a tool to be used in the assessment of online courses was also examined by Kroder, et al. (1998). The various aspects of student factors will be examined in detail to determine their impact upon the capabilities of the online tutors in this study.

2.1.2.4.2 Implementation issues

Implementation Issues are another area of research associated with online learning. This literature is often presented as case studies explaining to readers how online learning was implemented at a specific institution (Behncke & McNaught, 2001;

Benson et al., 2001; Burnett, 1999; Farrington & Bronack, 2001; Hodges & Saba, 2002; Kroder et al., 1998; Matuga, 2001). This body of literature explains in some depth how an online program or course was implemented, the experiences of the participants (both tutor and students) and what was learned from the experience. There is also an endeavour on some occasions to give advice to others who might also try to offer a course online (Burnett, 1999; Matuga, 2001).

There are also authors who offer advice about implementing online education without describing any one course. Pages of suggestions about how to deal with various online situations, from online flaming (aggressive or emotional posts) to how to use emoticons are given in books such as The Online Teaching Guide by White and Weight (2000). Their material also covers attitudes, strategies and techniques in greater detail than journal articles, and endeavours to replace a mentoring process, which will be discussed later in this review. This will relate to the perceptions of online tutor competencies and the factors affecting these competencies.

2.1.2.4.3 Course design

Of all of the aspects of online education, the design and development of online courses seem to have the most written about them. This is not simply a "how to" area, but it delves deeper into theory about learning at a distance and learning with technology (Bronack & Thornton, 1999; G. Brown, Myers, & Roy, 2003; Carr-Chellman & Duchastel, 2000; Chen, Wong, & Hsu, 2003; Eastmond, 2000; Gibbons & Brenowitz, 2002; Goodyear et al., 2001; Hedberg, 2001; Levin et al., 1999; Mann, 1998; McDonald & Postle, 1999; Parchoma, 2003; Peregoy, 2000; Schoenfeld-Tacher & Persichette, 2000; Simpson, 2003).

These authors declare that a fundamental shift is required in the way teaching and learning is designed for online education. The presentation of a new online course model amidst changing models for teaching away from the reigning paradigm of teaching and learning is offered by McDonald and Postle (1999) and Ko and Rossen (2003). Ko and Rossen (2003) present five categories which need to be taken into consideration for the conversion of courses to an online mode. These categories are: Instructor presentation; Discussion; group-oriented work and student presentation;

research; and Assessment. This is more contextual than the approach used to explore the issues of online course design by Bronack and Thornton (1999). They come from a more theoretical orientation, even though they present many practical issues. Their global perspective discusses the big picture including what governments see as important for online delivery and where ICT will take online education in the future as differing from the models put forward by McDonald and Postle. The design of the course relate to both perceptions of tutor competencies and course factors affecting these competencies.

2.1.2.4.4 Quality assurance

There is general agreement that there are a wide variety both in type and quality of online courses offered (Maeroff, 2003; Phipps & Merisotis, 1999). With the question of quality in online courses, can the tutors or students be assured of quality in online education? There are number of aspects to quality assurance regarding online courses Broad (1999) discusses. She approaches quality assurance from the perspective of: Outcomes-based assessment; Interaction in the teaching and learning process; Academic and student services; and External oversight. Broad offers suggestions about how quality can be assured depending on the perspective after analyzing the position of various governments.

When it comes to quality of online courses, Shank (2000) says "If the route looks too easy, it probably is." Learning how to master skills involved in online learning is a serious commitment of time and energy, not including learning the actual content of the course itself. Shank's comment can be seen as a warning to potential online tutors and students to do some assessment of their own before making important decisions regarding online education. Maeroff (2003) argues that the quality of online offerings continues to be relevant in the literature. The perceptions of tutor capabilities and factors affecting these capabilities will be related to this.

2.1.2.4.5 Barriers to online education

Barriers to online education currently exist and are an issue with which educators grapple. There are a number of authors who examine the barriers that exist to online education (Bennett et al., 1999; Berge & Mrozowski, 1999; Cyrs, 1997; Eastmond,

2000; Ellis & Phelps, 2000; Furst-Bowe, 1996; Harper et al., 2000; Peregoy, 2000; Postle & Ellerton, 1999). Wide ranges of organizational schemas are set up to describe the various barriers. Postle and Ellerton (1999) have identified two barriers to online education:

1) Lack of understanding of the potential of "knowledge media"; and
2) Rigidity of organizational/administrative structures.

They later break down their barriers into subsections, but this a marked contrast to the categorization by Berge and Mrozowski (1999) who have organized these barriers into nine categories: Academic; Fiscal; Geographic; Governance; Labour-management; Legal; Student support; Technical; and Cultural. This list is much longer and more encompassing than the usual types of lists which are presented such as Postle and Ellerton's (1999).

An important barrier and one particularly pertinent to the current study is the workloads for tutors. It is a recurring theme throughout the literature even when not specifically about barriers to online learning (Bennett et al., 1999; Berge & Mrozowski, 1999; B. M. Brown, 2002; Eastmond, 2000; Ellis & Phelps, 2000; Moskal & Dziuban, 2001; Palloff & Pratt, 1999; Peregoy, 2000; Reeves, 2003; Reushle, McDonald, & Lowe, 2003). Ellis and Phelps (2000) have a number of concerns listed based on time commitments including how time consuming it is to set up and teach an online course. There were other concerns regarding the time required to meet with others if there is a team approach to running an online course, getting release time from other commitments to work on an online course and issues about setting up of minimum levels of involvement required by academic staff.

The possible barriers for the implementation of online courses that were brought up by staff were not categorized by Ellis and Phelps (2000). They queried the staff about issues as they were in the process of staff development for online delivery. The barriers included common issues like staff workload responsibilities, concerns for student enrolment, further staff development opportunities and was there also a philosophical basis for online courses to have non-online textbooks.

One barrier to online education discussed is what is identified as the popular view of pedagogy (Chen et al., 2003; Fraser, 1999; Stevens-Long & Crowell, 2002). An

historic view of an "emphasis on media and the absence of any emphasis on new pedagogical models" was presented by Stevens-Long (2002, p. 152). Fraser describes most instructional opportunities available now as "shovelware", which is defined as any content shoveled from one communication medium to another without regard of the capabilities of each medium. Fraser argues that we are missing that evolutionary leap in thought which will make the online medium reach its potential, much the way motion pictures evolved with sound and then colour. He says it is the limited vision of people in authority which are causing the barrier which is not allowing online learning to be used to its greatest extent. This coincides with the belief that traditional lectures can be easily converted to Internet-based instruction (Chen et al., 2003).

A number of unresolved challenges to online education are presented by Reeves (2003). These challenges include: Faculty workload; Continued dominance of traditional pedagogy; Weak state of assessment in e-learning initiatives; Flaws in the accreditation process; and Disappointing state of research in this area. The majority of these challenges will be addressed in this study with the exception of 'Flaws in the accreditation process.' Information dealing with workload, pedagogy, assessment, and the state of the research in this area will be presented later in this thesis.

2.1.2.5 Teaching and online education

Throughout the literature, the concept of online educational interactions varies a great deal. They range from face to face to distance interactions, from formal lectures to personal conversations with tutors and students, from a large volume of interaction to seemingly no interaction between people. There are also descriptions of formal Australian university courses, with a focus on interaction between students and tutors (Bennett et al., 1999; Creanor, 2002; Graham, Cagiltay, Lim, Craner, & Duffy, 2001; Mortera-Gutierrez, 2002). Goodyear et al. (2001) do not necessarily have online tutors interacting directly with students at all. They present information that states that students want a trainer to train them when they attempt e-learning. This wanting of a trainer might lead to a belief that it is potentially optional to have someone in charge of the learning in an online course. Goodyear et al. present a figure entitled "Flexibility in mixing technology and human teaching" which helps

show the basic range of possible combinations regarding technology and education. This figure presented the scope of online education offerings in a linear fashion. This presentation included: Classroom teaching; Computer-enhanced classroom teaching; Tutor-enhanced online learning; and Independent online learning. This figure shows the overlap of flexibility between Computer-enhanced classroom teaching and Tutor-enhanced online learning. It also shows a distinct separation between both Classroom teaching and Computer-enhanced classroom teaching as well as between Tutor-enhanced online learning; and Independent online learning.

Even though some authors present evidence that a tutor does not have to interact directly with a student in the students' learning experience, the remaining part of this paper is based on the belief that tutors will interact with students in various ways.

2.2 Online Tutors

The focal point of this section is online tutors. The term "online tutor" can be split into two distinct parts, "tutor" and "online". The term "tutor" is defined as one charged with the instruction and guidance of another, not necessarily with creating the instructional material to be learned. The term "online" in the context of online education is defined as the action or process of educating or of being educated connected to, served by, or available through a computer and / or telecommunications system. Teaching and learning in a non-face to face educational environment. An online tutor is a tutor working in an online educational environment who has not created his instructional content. A presentation of information about online tutors will include three main points: roles of online tutors, research into online education and online tutor capabilities.

2.2.1 Origins of the online tutor

The role of the online tutor has its origins in the "Oxbridge" system of tutorial support and supervision (Lentell & O'Rourke, 2004; Mills, 1999). The universities of Oxford and Cambridge in the UK have created a system of lectures, practical work, tutorial supervision and supervision. This system of tutoring is described as a

tutor with content expertise meeting with small number of students and comments on each individuals' work (Mills, 1999). The development of the role of the online tutor from face-to-face Oxbridge tutor to personalized distance education tutor has occurred over the last several decades (Lentell & O'Rourke, 2004). The evolution from distance education tutor to online tutor has followed as a more recent occurrence. This study will explore the role of the online tutor and examine the capabilities required to fulfil this role.

2.2.2 Roles of online tutors

The roles of online tutors varies considerably depending on a number of factors, including method of delivery, technology used in the delivery of instruction, the type of educational institution providing the instruction, the motivation of the provider of the education and the pedagogical approach used for the instruction. The method of delivery may affect the expectations of both the students and the tutor. The delivery technology used by a tutor may affect the level and type of interaction the tutor can achieve. The pedagogical approach may determine how the tutor interacts with the students and the content. The tutor must also interact with the unit without having any input into the decisions that were made regarding design (Pascual et al., 2000). The role of the tutor is one aspect of research into online tutors (Tait, 2002).

2.2.3 Research on online tutors

Despite the examples noted, investigations have shown that there is a lack of information about the teaching experiences of tutors using online delivery (Brace-Govan & Clulow, 2000; Reeves, 2003).

2.2.3.1 Tutor effectiveness instruments

One obvious gap in this field is the lack of an appropriate instrument to measure how tutors operate in an online environment (Hazari & Schno, 1999; Phipps & Merisotis, 1999). According to Hazari and Schno (1999), no measure yet exists that would adequately evaluate how well a Faculty member performs in a virtual classroom. Phipps and Merisotis (1999) echoed this sentiment when they questioned the existing

studies from a statistical standpoint. They expressed concerns about the construct and content validity and reliability of instruments used in existing studies.

2.2.4 Online tutor capabilities

There are a number of authors who write about online tutor capabilities. Details of tutor capabilities in online education are examined by a number of authors (Bennett et al., 1999; Cooper, 2001; Goodyear et al., 2001; Gustaffson & Gibbs, 2000; Volery, 2001; White, 2000). This topic will be put forward in four parts as evident in the literature: the conceptualization of online tutor capabilities, developing capabilities for online tutors, factors which affect these competencies and a theoretical framework for online tutor capabilities.

2.2.4.1 Conceptualization of capabilities

There are many ways to conceptualize the competencies of online tutors. This section investigates the various categories used by different authors, including the actual breakdown of what the authors argue are things a competent online tutor needs to be, needs to know and needs to be able to do.

Throughout the literature, authors are divided as to the categorization of online tutor competencies. Three perspectives to conceptualizing the competencies needed to be an effective online tutor, according to Goodyear et al. are: Competency based; Humanistic based; and Cognitivistic. As the majority of the literature is competency based in its conceptualization schema, the current study will adopt a competency based view. Details of the three perspectives of conceptualizations are presented in detail below.

2.2.4.1.1 Competency based conceptualization

Competency based conceptualization is defined as the reduction of human activity and ability to a list of descriptions of behaviours by Goodyear et al. (2001) This particular perspective is most often represented in the literature and include discussions by Berge (1995); Cyrs (1997); Duggleby (2000); Goodyear et al. (2001); Salmon (2000); Schoenfeld-Tacher and Persichette (2000); and Spector and de la

Teja, (2001). Below is a brief presentation of the conceptualizations of Berge, Cyrs, Salmon, Goodyear, et al. and White.

There are authors including White (2000) who present a number of instructor competencies that are not organized into any type of categories. They are usually a list of competencies that span across skills, traits and characteristics of online instructors.

Four broad categories are how Berge (1995) organizes his competencies, namely:

1. Pedagogical facilitation - revolves around duties associated with the educational and intellectual aspects of online education;
2. Social facilitation - involves creating a friendly environment where learning is promoted, such as promoting human relationships and helping people to work together;
3. Managerial facilitation - refers to strong leadership and direction is considered a *sine qua non* of successful conferencing. It also includes establishing the procedural rules and objectives of the session; and
4. Technical facilitation - relates to the technology used in the delivery of the course and making this as transparent as possible to the participants.

A meta-analysis undertaken by Cyrs (1997), found six major categories throughout the online education literature relating to online tutor competencies, they are: Course planning and organization; Verbal and nonverbal presentation skills; Collaborative teamwork; Questioning strategies; Subject matter expertise; and Involving students and coordinating their activities at field sites. Cyrs described course planning and organization as a broad area which encompassed basic course design, technology usage, knowledge of instructional development and systems theory. This category also covered logistical and technical knowledge, knowledge of how traditional teaching differed from teleteaching and how the delivery system affected the course presentation.

The skills in verbal and nonverbal presentation involve how the instructor coordinates the lesson with handouts and study guides used by the learners as well as manage discussions at a distance. The skills in this category covered were

specifically described for a telelearning environment but do apply to most forms of online education. This is a major concern for instructors due to the amount of feedback possible during the lesson. In a video-conference, this amount of feedback might be increased but in a text based environment, there are even fewer cues for the learners. Cyrs included concerns about how the instructor looked on television but this is obviously not a concern in audio or text-based online environments.

Goodyear et al. (2001) divide the competencies required to be an effective online tutor into eight categories relating to specific roles. They include:

1. Process facilitator - is the facilitator of the entire range of online activities
2. Advisor/counsellor - provides individual or private help to students in order to get the most out of the course
3. Assessor - provides grades, feedback and validation of students' work
4. Researcher - is responsible for the production of new knowledge throughout the course
5. Content facilitator - is responsible for facilitating the learners understanding of the course content
6. Technologist - is responsible for making the technological choices needed to improve the learning environment
7. Manager/administrator - manages the record keeping, registration, security, and other such things
8. Designer - is responsible for designing the online learning tasks for the students

Appendix A presents a detailed breakdown of the category, process facilitator found in Goodyear et al. This has relevance because it is a sample of the categories used as part of the basis for the capabilities used for this study.

Salmon (2000) lays down a detailed structure she developed for organizing the competencies of online e-moderators which share many common roles with online tutors. Salmon has identified five online competency categories, which include: Understanding of online process; Technical skills; Online communication skills; Content expertise; and Personal characteristics. Salmon has also subdivided each of these categories into six levels of performance, namely: Confident; Constructive;

Developmental; Facilitating; Knowledge sharing; and Creative. Salmon provides examples which explain in detail each of the thirty options available when competencies are organized using her structure.

2.2.4.1.2 Humanistic based and cognitivistic conceptualizations

Humanistic based organization is defined by Goodyear et al. as opposing the reduction of human activity and ability to a list of descriptions of behaviours. The humanistic approach is fundamentally opposed to the competency approach about how people should be treated, how people know and act the way they do.

There are a number of authors who discuss educational competencies with an humanistic approach to categorization (Cooper, 2001; Gustaffson & Gibbs, 2000; Lamb & Smith, 2000; White & Weight, 2000). The humanistic aspects of these pieces of literature usually occur in a category regarding human interactions or environment creation. Often, as is the case with White and Weight (2000) and Lamb and Smith (2000), there is no actual endeavour at categorization in a competency based sense, there is just a flowing list of items describing how people should be treated or how to attach meanings to events. Slightly different from the rest of the literature because it labels the organizational points as "tips" for making online courses successful is Cooper (2001).

According to Goodyear et al. (2001), the third perspective, cognitivistic conceptualization is quite different from how the vast majority of authors organize competencies. Its basis goes beyond observable behaviours and links performance to mental structures and knowledge structures. This does not make it a suitable perspective for this study, although some aspects from this perspective might have been useful to the study. The difficulty of finding literature in which to base this organizational perspective and the scope of the study prohibits using a cognitivistic perspective.

2.2.4.2 Developing competencies for online tutors

There is a need for the development of specific skills for online tutors because "Anyone who says that teaching at a distance is the same as traditional teaching is

dead wrong" (Cyrs, 1997 p. 18). The argument is also put forward that "Teaching online calls for a thoughtful interweaving of the old and new, making a course more than simply a collection of lecture notes delivered by computer" (Maeroff, 2003 p. 17). Thus, there are number of different ways for online tutors to develop knowledge, skills and abilities to become better at educating at a distance using the Internet (Bennett et al., 1999; Fletcher, 2003; Furst-Bowe, 1996; Gustaffson & Gibbs, 2000; LaRue & Sobol, 2002; Mazzolini & Maddison, 2003; Thach, 1994; Weaver, 2003; Wilson & Stacey, 2003).

There are two main resources for developing online teacher training according to Furst-Bowe (1996). They are:

1. vendor sponsored training; and
2. tutor self-study methods using training material such as books, manuals, videotape, training coursework and computer tutorials.

Furst-Bowe found that other resources play lesser roles for the competency development of tutors. First, conferences and seminars offered by professional associations were used to a lesser extent than vendor training and self-study. Second, courses at colleges and Universities, and thirdly, workshops and certificate programs at trade schools or technical colleges also seem to play a minimal role at best for tutors as they strive to develop their online competencies.

Within the literature on online tutors, the phrase moderators or e-moderators is used to describe moderators of online discussions, both synchronous and asynchronous. This moderating is an aspect of the work of online tutors (Spector & de la Teja, 2001). Berge (1995) identified seven ways people received training to be moderators, ranging from formal, to the very informal: Watching others; Volunteering; Asked to do it; Started own list; Jumped in; Read about it; and Received formal training. This list was not directly about online tutors but there are a number of similarities between this list and the way people become instructors or coaches in other parts of life (Berge, 1995). This highlights one of the weaknesses with the training of online tutors as the lack of modelling. There is little chance for people to spend time in a class observing how online educating is done.

Training online tutors from the standpoint of professional development was approached by Bennet et al. (1999). They report on a history course about the Irish Potato famine. The course was set up for current staff to enrol in as students so that the staff could have a genuine learning experience while getting more familiar with online education. They found the course to be successful and listed suggestions such as having graduated students act as online tutors.

A list of the many informal avenues for tutors to gain experience is presented by Gustaffson and Gibbs (2000). Their list includes encouraging engagement in informal peer-mentoring by those with prior content knowledge or expertise and through the creation of a peer-mentoring forum. There is also a list of ways students can gain experience in online pedagogical practices, including:

1. Periodically asking for a quick summary;
2. Bringing together various threads by writing a final summary;
3. Asking volunteers to summarize the forum discussions;
4. Asking volunteers to lead and facilitate discussion;
5. "Taking a turn" at moderating a specific forum; and
6. Encouraging student-determined discussion groups

The developing of capabilities for online tutors will relate to both perceptions of tutor competencies and course factors affecting these capabilities.

2.2.4.3 Factors which affect online tutor capabilities

This study investigates the factors affecting the capabilities of online tutors. The literature identifies a number of known factors including: 1) the technology used in the delivery of instruction, 2) the characteristics of the students being taught, 3) the pedagogical approach used for the instruction, and 4) instructor and learner interactivity.

2.2.4.3.1 Technology usage

The technology used in the delivery of instruction is presented by many researchers as factors which affect online tutor capabilities (Furst-Bowe, 1996; Gundling, 1999; Gustaffson & Gibbs, 2000; Herrington, Herrington, Oliver, Stoney, & Willis, 2001; Kupritz, 1999; Phipps & Merisotis, 1999; Volery, 2001; White, 2000). It relates to

the methodology that is used to deliver instruction over a distance, be it computer mediated communications, video conferencing and so on. Different delivery technology methods are likely to change the competencies required by tutors in an online course, for example, a tutor's visual presentation is important in interactive television, but is unimportant in a text based environment. It also is likely to affect the potential interactivity between students and the tutor, in both a qualitative and quantitative manner. Oliver and Grant (1994) present a model which demonstrates the level of instructor and learner interactivity based upon the type of delivery technology being used to provide instruction at a distance. After an exhaustive search, no more recent models have been put forth to replace this dated model. The researcher has organized current distance education and open learning categories onto Oliver and Grant's structure which can be seen in Figure 2.1.

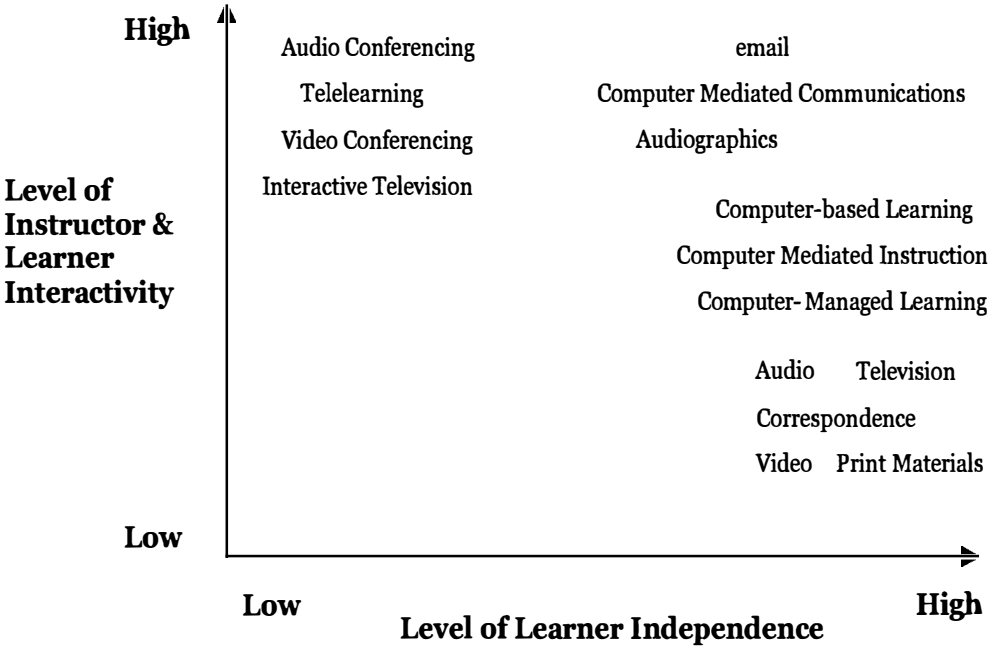


Figure 2.1: Technology Generations in Distance Education and Open Learning (based on Oliver and Grant, 1994, p. 1)

2.2.4.3.2 Student characteristics

The characteristics of the students being taught is presented throughout the literature as affecting online tutor capabilities (Berge, 1995; Gustaffson & Gibbs, 2000; Maehl,

2000; Palloff & Pratt, 2002; Schrum & Hong, 2002; Simonson et al., 2003; Simpson, 2003; Volery, 2001). This factor presents the various ways individual students differ including age, gender, personality and education including factors from the affective domain such as attitude, beliefs, motivations and expectations. These different characteristics will influence tutor – students online interaction thus the competencies required to successfully tutor an online course.

2.2.4.3.3 Pedagogical approach

Pedagogical approach used for the instruction is also widely acknowledged throughout the literature, as a factor which affects online tutor capabilities (Berge, 1995; Ellis & Phelps, 2000; Fraser, 1999; Furst-Bowe, 1996; Gustaffson & Gibbs, 2000; Herrington et al., 2001; Javid, 2001; Volery, 2001). This factor encapsulates the philosophy behind the educational experience. It also represents the range of pedagogical approaches used, which could be shown on the learning continuum from constructivism to instructivism. The pedagogical approach affects the capabilities required by online tutors. For instance, there is a great deal of difference between lecturing online and facilitating group work, though both might be effective in certain situations.

2.2.4.3.4 Instructor and learner interactivity

Of the main factors affecting the roles of online tutors, the delivery technologies employed and consequently, the level of instructor and learner interactivity (Brewer, 2001; Graham et al., 2001) is the factor which that can be most accurately predicted before the online courses start. There are certain inherent characteristics to the delivery technology which determine the levels of possible interactivity between learners and instructors (Ron Oliver & Grant, 1994). Therefore the study only used the delivery technologies factor in the initial selection of participants. The other main factors, the pedagogical approach used for the instruction and the characteristics of the students being taught, can not be accurately predicted before courses start, thus in this study these two factors will be considered throughout the study.

2.3 Theoretical framework for online tutor capabilities

A number of categories were identified after examining many of the categorization strategies and the individual capabilities presented throughout the literature (Berge, 1995, 2000; Cyrs, 1997; Duggleby, 2000; Goodyear et al., 2001; Kouki & Wright, 1999; Lamb & Smith, 2000; LaRue & Sobol, 2002; Neff, 2002; Salmon, 2000; Spector & de la Teja, 2001; Thach, 1994; Thach & Murphy, 1995; White, 2000; White & Weight, 2000). They were a mix of constant themes and what was scattered throughout the literature.

When the framework was created, the literature was exhaustively examined and lists of capabilities were organized in a number of categories. This process of organization involved creating a variety of ways to group the capabilities from the literature to determine what would be the most advantageous for the study. Throughout this process, definitions were refined to determine what an online tutor was in comparison to online instructors, online teachers, e-moderators, facilitators and online trainers. For example, this process included generating extensive categories based on authors; author labelled categories; groups of skills, traits and advice; academic; corporate; teaching; facilitating; placing capabilities into other authors schemas, delivery technology; date; instructing; and tutoring. A sample of this distillation is included in Appendix B.

There were many methods of classification put forth in the examined literature and over 500 discrete capabilities presented. This limited the number and type of articles to be referenced as the number of capabilities became increasingly unwieldy with each additional article examined. This led to a decision to focus on a limited number of sources (Berge, 1995; Cyrs, 1997; Goodyear, Salmon, Spector, Steeples & Tickner, 2001; Salmon, 2000), as each additional source added both individual capabilities and a new organizational schema for the capabilities. These sources were chosen because they were seen as seminal articles in this area. These were the articles that were referred to in the vast majority of the literature available on this topic.

There were a large number of capabilities and categories that were equivalent in various articles. Each individual capability was examined and sorted with other capabilities which were similar. This process of sorting the capabilities into groups resulted in twenty-four groups of capabilities. These twenty-four groups of capabilities were then defined and examined again. This examination resulted in the combination and sorting of the twenty-four groups into five categories of capabilities which were labelled based on the labels used throughout the literature. These five capabilities encompassed all the smaller groups which were labelled sub-capabilities and were used as the theoretical framework in this study. Table 2.1 presents the five online tutor capabilities with the twenty-four related sub-capabilities.

Table 2.1

Organization of online tutor capabilities and sub-capabilities

Capability	Sub-capability
Content Expertise	Knowledge and skills
	Enriching interactions
	Finding & providing resources
	Question analysis
	Relevant tasks
Course Management	Institution contact
	Pedagogy
	Management
	Administration
Evaluation	Assessment
	Course evolution
	Feedback
	Monitoring
Process Facilitation	Communication
	Values
	Confidence
	Disposition
	Environment creation & maintenance
	Facilitating
	Pedagogical
Technical Knowledge	Attitude
	Choice of resources
	Technical pedagogy
	Technical support

Figure 2.2 shows a graphical representation of how the online tutor capabilities categories fit in the online learning environment composed of students, tutors and the online learning environment technologies, pedagogies and resources. The online tutor capabilities, *Content Expertise*, *Process Facilitation*, *Evaluation*, *Course Management* and *Technical Knowledge* act as the contact points through which the tutor interacts with the students and the online learning environment (OLE)

technologies, pedagogies and resources. The tutor, through the 5 capabilities, comes first into contact with the OLE technologies. Through this contact, the tutor is able to interact with the students, while the 5 capabilities are mediated by the OLE technologies.

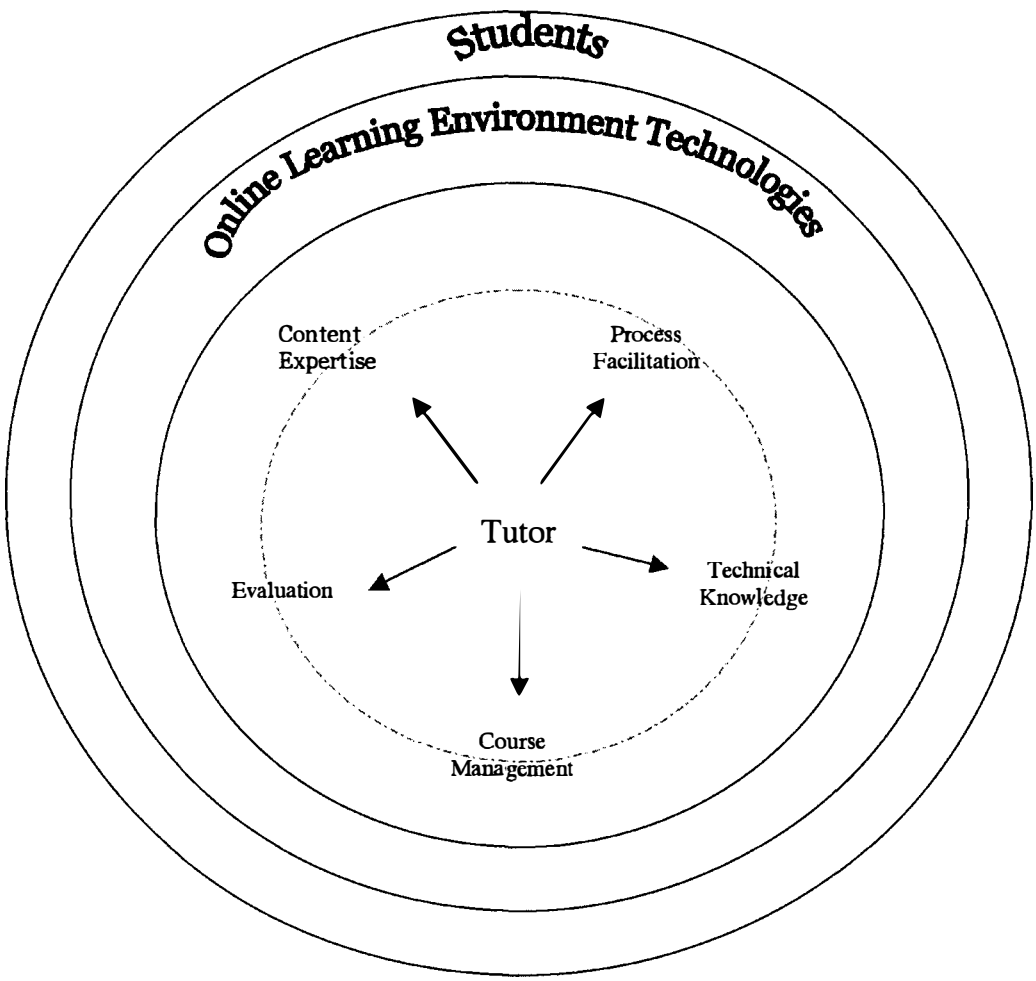


Figure 2.2: Graphical representation of the online learning environment.

2.3.1 Content expertise

Content expertise was one of the categories which was consistently described throughout the literature. The category 'content expertise' encapsulates six sub-capabilities from the literature. These have been labelled Knowledge and skills,

finding and providing resources, question analysis, relevant tasks and enriching interactions.

2.3.2 Course management

Course Management is a category that deals with capabilities related to offering an online educational experience, but do not fit in any of the other categories previously examined. Being the institutional contact, performing administrative functions and keeping the course organization running smoothly are the type of themes covered by this category. Examples include Administrator / Manager (Goodyear et al., 2001) and Managerial Facilitation (Berge, 1995). In this case, the category of Course Management includes sub-capabilities such as: administration, management, institution contact and pedagogy.

2.3.3 Evaluation

This category is about the evaluation of the entire offering, providing assessment for students as well as evaluating the course and planning changes, modifications or corrections to improve the entire online experience. Evaluation is a category which is not uniformly presented in the literature. Authors partition it into very different schemas. Goodyear et al. (2001) for example describes this category as assessor, researcher and designer roles. In contrast, Cyrs (1997) does not have it as a separate category but includes references to it throughout his schema. Berge (1995) includes it specifically in his pedagogical facilitation. In this case, the category of Evaluation includes sub-capabilities such as: assessment, course evolution, feedback and monitoring.

2.3.4 Process facilitation

Process facilitation has the broadest range of individual examples of any category in this organizational schema. The literature is filled with examples of aspects of process facilitation. This category is somewhat diffused, for instance it encompassed many of Berge's (1995) items. Similarly, Duggleby (2000) has this category spread

throughout many of her categories, including: encourage and motivate, facilitating a learning community, and welcome learners. Goodyear et al. (2001) describes designer and process facilitator roles' whereas Salmon (2000) lists categories including understanding of online process, personal characteristics and online communication skills. In this case, the category of Process Facilitation includes sub-capabilities such as: communication, facilitating, pedagogical, confidence, disposition, values, and environment creation & maintenance.

2.3.5 Technical knowledge

Technical knowledge is the other category that appears throughout, for example, Berge's (1995) uses of the term "technical", to Goodyear et al. (2001) "technologist", and Salmon's (2000) "technical skills". Themes related to this category, have been categorized as attitude toward technology, choice of resources, technological pedagogy and technical support.

2.4 Conclusion to Literature Review

From the literature review on online tutor capabilities, a gap was identified in the current research literature on instructional design to increase knowledge retention in technology-based instruction (Phipps & Merisotis, 1999). Judging by the present research literature on online tutor capabilities, the present study should contribute to present understanding and knowledge because it examines this group, their capabilities and the factors which affect those capabilities. More studies are needed to explore the capabilities of online tutor capabilities and the factors which affect those capabilities (Goodyear, et al. 2001; Reeves, 2003).

The present study set out to address the task described by Reeves (2003) to contribute to the body of knowledge in this area. The next chapter presents the method used in this study to investigate online tutor capabilities in text-based tertiary online educational environments.

CHAPTER THREE

3.1 Method

This chapter will present three aspects of how the current study proceeded. The design of the study, rationale for the research design adopted and the role of the researcher will be presented first. The procedures of data collection including schedules of both qualitative and quantitative data are presented next. Finally, a description of the context of the study, including descriptions of the participants and the online learning environments (OLE) completes this section.

3.1.1 Design of study

This study was designed using an interpretative approach and an ethnographic model (Schostak, 2002; Taft, 1988; vanManen, 1990; Wellington, 2000; Wiersma, 1995). There was an attempt to draw on a mix of qualitative and quantitative data collection methods for its data collection and analysis (L. Smith, 1990; Walford, 2001). This study employed ethnographic approaches such as interviews and observation to gather data from stakeholders involved with the online units (Anderson & Burns, 1989; Goetz & LeCompte, 1984; Spafford, Pesce, & Grosser, 1997; Wiersma, 1995; Wolcott, 1988). As Brayboy and Deyhle (2000, p. 163) put it, "Ethnography research relies on what we, as observers, see and what we are told by the participants in our research studies." There was also a balance between quantitative and qualitative methods chosen as the "combination of both which makes use of the most valuable features of each" (Clough & Nutbrown, 2002; Cooper & Schindler, 1998) Consequently, the study was based on what the participants said and how they behaved (Anderson & Burns, 1989; Goetz & LeCompte, 1984; MacMillan & Schumacher, 1989; Schostak, 2002).

In this study, six online tertiary units were examined for one semester with little impact on the conduct of the participants. Due to the nature of the environment, the

study had a minimal impact on the participants during the observations because there was no face-to-face contact which was called nonparticipant observation (Goetz & LeCompte, 1984). Therefore the students and tutors were not able to notice when the observations took place so the researcher was nearly a 'complete observer' (Wellington, 2000). All participants were participating on the basis of informed consent. Also, the interviews which were conducted were scheduled to have as little impact as possible with only unit coordinators being interviewed during the semester. An ethnographic researcher is required to become a part of the studied environment in order to collect relevant data (Goetz & LeCompte, 1984; Wellington, 2000; Wiersma, 1995).

There was not a strictly linear data collection as data from the observations and interviews informed later collection opportunities (MacMillan & Schumacher, 1989). Specifically, the study used a process of collecting data, analysing the data, refining information and repeating this cycle a number of times in what is called the ethnographic research cycle (Burns, 1994; Gladwin, 1989). The focus of later data collections was designed to be on the emerging themes as interpreted in earlier collected data thus providing useful triangulation to the study (Goetz & LeCompte, 1984).

3.1.2 Rationale for the method

There are a number of descriptions of an ethnographic study that present the essence of why this method was chosen for the current study. Ethnography is neither subjective nor objective, but interpretive (Agar, 1986; Hammersley, 1990). Ethnography is defined as the art or science of describing a group or culture (Fetterman, 1989; Schostak, 2002). An ethnographic study is a function of three things, the ethnographer, the audience and the group among whom the ethnographer is working (Walford, 2001).

Of all the types of interpretive research methods, the descriptive nature of ethnographic research using mainly qualitative methodologies most closely fit with the character of the current study (Glesne & Peshkin, 1992; Wallen & Fraenkel, 2001; Wiersma, 1995). This study did not strive to discover a causal link between the

factors that affect the capabilities required by online tutors and the capabilities themselves (Goetz & LeCompte, 1984; MacMillan & Schumacher, 1989). It strove to explore the relationships between the factors and the capabilities with the hope of unearthing rich descriptions and complex explanations regarding the relationships (Glesne & Peshkin, 1992; Walford, 2001). An argument for using an ethnographic approach to research in educational environments, like the setting this study examined, was provided by Burns (1994, p. 247) when he states "... It has become increasingly evident that overconcern with quantitative data may miss significantly important links and relationships within an educative process." The use of mixed methods of data collection allow the "use of the most valuable features of each" [type of data collection] (Clough & Nutbrown, 2002). Using the strengths of each reduce the possibilities of missing important links and relationships in the data.

3.1.3 Role of the researcher

The researcher was not officially related to the units in any way other than to research them for the current study (Goetz & LeCompte, 1984; Taft, 1988). He was not in a position to formally evaluate anyone associated with the units. He was not a stakeholder in any of these units and was not involved with the pedagogy or design of any of these units. The researcher was as unobtrusive as possible in order to lessen any possible observer effect as the data collection phases took place. The researcher was the "essential research instrument" (Wallen & Fraenkel, 2001; Wolcott, 1973). The researcher was responsible for conducting the interviews with the unit stakeholders (L. Cohen & Manon, 1994). The researcher investigated, collected data, contextualized, and reported (Goetz & LeCompte, 1984; Wolcott, 1988).

3.2 Procedures

Data were collected from tutors, students and unit coordinators who were contacted to provide input at the specific phases of the study as demonstrated in Figure 3.1. The four data collection phases took place in 2002 throughout the entire length of a semester-long online unit and beyond. There was a seam of data analysis that ran

throughout the data collection phases that was a version of the ethnographic research cycle (Goetz & LeCompte, 1984). This allowed the analysis of data to inform later data collection. There were four distinct phases of data collection;

1. Prior to start of unit labelled 'Pre- Unit'
2. During unit labelled 'During Unit'
3. As unit finished labelled 'Unit Wrap-up'
4. After unit ended labelled 'Post- Unit'

The remainder of this section on data collection will first present the schedule of the data collection. A brief description of the piloting stage of the study will then be followed by the four phases of data collection. Finally, a description of the secondary research question data sources will complete this section.

3.2.1 Data collection

The data collected were organized by phase and data source. The data sources utilized included the three online unit stakeholders, namely tutor, students and unit coordinators. A chart showing the schedule of the data collection phases and what data sources were drawn on in each phase and how they were drawn on can be seen in Table 3.1.

Table 3.1

Schedule of data collection

	Online Unit Stakeholders		
Phases	Unit coordinators	Students	Tutors
1 Pre-Unit	None collected	Pre- Unit online Survey to all students	Pre- Unit online Survey to all tutors
2 During Unit	Interview all, items based on data from the literature and analysis of data collected in phase 1	Electronic Observation	Electronic Observation, Face-to-face Observation
3 Unit Wrap-up	None collected	Post- Unit online Survey to all students	Post- Unit online Survey to all tutors
4 Post-Unit	None collected	Interview sample of students, items based on analysis of data collected in phases 1, 2, and 3	Interview all tutors, items based on analysis of data collected in phases 1, 2, and 3

3.2.1.1 Piloting phase

There was a piloting stage conducted before the Pre-Unit data collection took place. This piloting stage provided an opportunity to hone the researcher-created instruments which were used throughout the research study. The piloting phase involved the creation of the questionnaires which were answered by the tutors and the students. The mode of online distribution for the questionnaires took place during this phase of the study. There was also the creation of the interview question schedules which guided the interviews with all three groups of stakeholders.

3.2.1.2 Pre- unit phase

Phase one of data collection, Pre- Unit, was conducted before the online course began. The tutors completed a questionnaire regarding their backgrounds and their attitudes toward the capabilities required of online tutors. This phase of data collection addressed the first secondary research question regarding the main required capabilities required by online tutors.

3.2.1.3 During unit phase

Phase two of the data collection, During Unit, was conducted during the instructional portion of the online units. This consisted of online students completing questionnaires and the unit coordinators being interviewed regarding their attitudes on the capabilities required of online tutors. Phase two also involved observing the units and the tutors through unobtrusive electronic observation and some limited face-to-face observation. This phase of data collection addressed the first and second secondary research questions about tutor capabilities and factors affecting the capabilities.

3.2.1.4 Unit wrap-up phase

At the end of the semester, Unit Wrap-up, commenced. This involved the collection of predominantly quantitative data from two questionnaires regarding the capabilities required by online tutors. One source of survey data was all the students who completed one of the online units and the second source of data was the tutors of the

online units. This phase of data collection also addressed the first secondary research question regarding the main required capabilities required by online tutors.

3.2.1.5 Post- unit phase

After the analysis of the data collected in the first three phases of data collection, the fourth and final phase of data collection, Post- Unit, was conducted. This consisted of interviewing the online tutors and selected online students to get more qualitative data regarding online tutor capabilities. This phase of data collection addressed all three secondary research questions regarding about tutor capabilities, factors affecting the capabilities as well as whether the essence of the capabilities are modified.

3.2.1.6 Data sources

The data sources for the study did not uniquely inform each of the secondary research questions. Questions ranged from having one data source to multiple data sources. A chart showing the data sources which were drawn upon to help illuminate individual secondary research questions is presented in Table 3.2.

Table 3.2

Data sources related to the secondary research questions.

Research Question	Data Sources
1	Electronic Observation, Face-to-face Observation, Tutor Interviews, Student Interviews and Unit coordinator Interviews, Student Pre- Unit Survey, Student Post- Unit Survey, Tutor Pre- Unit Survey, Tutor Post- Unit Survey,
2	Tutor Interviews, Student Interviews and Unit coordinator Interviews
3	Student Pre- Unit Survey, Student Post- Unit Survey, Tutor Pre- Unit Survey, Tutor Post- Unit Survey, Electronic Observation, Face-to-face Observation, Tutor Interviews, Student Interviews, Unit coordinator Interviews

3.2.2 Qualitative data collection

There were two types of qualitative data collection used in this study, interviews and observations. The interviews were conducted with the tutors, students and unit coordinators. The observations were conducted throughout the course of the semester in two forms, electronic and face-to-face. The details of this data collection are presented below.

3.2.2.1 Interviews

The interviews collected reflective qualitative data about the beliefs stakeholders hold regarding the capabilities required of online tutors (Wolcott, 1988). The interviews involved relevant unit data, as observed episodes, circumstances or both were presented (MacMillan & Schumacher, 1989; Wellington, 2000). The interview process was scheduled and allowed the opportunity to expand on any beliefs the stakeholders had regarding the capabilities of online tutors which might have been present in the observations or the questionnaire. During the data collection process, the interviews were audio taped and were then played through a computer so that sound editing software could digitise the interviews. This digitising allowed for the interviews to be stored electronically on the hard drive and burned to CD-ROM so the researcher could listen to them on anything which could play .wav files on a CD-ROM. Playing the interviews through the application iTunes (Apple, 2004) allowed for some correction of poor audio quality on several of the audiotapes as well as the functionality to easily pause and replay the interviews. The ability to play the interviews on most modern computers saved the researcher from needing to access any special equipment for reviewing interviews, such as a transcription machine with foot pedals. The CD-ROMs also made the backing up of the interviews quite efficient as the original audiotapes were safely stored after digitising and never used in the actual analysis of the data. This procedure was a safeguard from any potential loss of information through damage that might be caused to the audiotapes through repeated use in a transcription machine or tape player.

3.2.2.1.1 Tutor interviews

The interviews with the tutors provided data about their beliefs about the capabilities required for online tutors. Tutors were asked to reflect on their practice during the

interview to determine what their individual capabilities were and what they felt would be the best way to improve their performance as online tutors. The interviews allowed for the opportunity to discuss and investigate their beliefs in a non-evaluative setting. Appendix C has a sample of the tutor interview data collection instrument which was used in this study.

3.2.2.1.2 Student interviews

The interviews with the students occurred during the Post-unit phase of data collection. They collected data concerning student beliefs with regard to the capabilities required for online tutors. The students selected for interviews were purposefully chosen; it was not a random selection. This selection process depended on data from the observations, their demographic information, their responses on the student survey and input from the unit coordinators and tutors. This selection process allowed for a variety of different viewpoints to be presented, whereas a random selection might have ended up with several students with redundant attitudes and characteristics.

This interview process allowed for the opportunity to raise specific questions with individual students based on the actual episodes, circumstances or both from the online unit. This also gave individual students the chance to expand upon any issues which might have come up during the unit and to delve into any perceptions regarding the capabilities of online tutors which might have been presented in the observations or the student survey. Appendix D has a sample of the student interview schedule which was used in this study.

3.2.2.1.3 Unit coordinator interviews

The interviews with the unit coordinators occurred in the During Unit phase of data collection. They collected data regarding the beliefs the unit coordinators hold about the capabilities required of successful online tutors, the factors which affect the online capabilities and the relationship between the factors and the capabilities. There was a more overarching contextual approach to the interviews with the unit coordinators, as these interviews were not specifically organized to examine the current online course. The unit coordinator interviews collected data regarding

pedagogical approaches, qualifications required to be a tutor and reasons why the unit coordinators choose the tutors that they did, and explored the role unit coordinators play in the online education process in regard to which tutor roles they took on, if any. Appendix E has a sample of the unit coordinator interview schedule which was used in this study.

3.2.2.2 Observation

The observations collected reflective qualitative data about the beliefs stakeholders hold regarding the capabilities required of online tutors (Wolcott, 1988). The observations occurred in the During Unit phase of data collection. They involved relevant unit data, as episodes, circumstances or both were observed (Wellington, 2000). The observation process allowed the opportunity to collect communication and contextual information regarding the unit (MacMillan & Schumacher, 1989). This observation data was used to inform other data collection and was illustrative of opinions the stakeholders held about online tutors. For example, it provided data that informed the tutor and student interviews in the Post Unit data collection in order to have specific episodes, circumstances or both for the participants to extrapolate from.

3.2.2.2.1 Electronic observation

The electronic observation data collection consisted of the researcher observing the interactions which happened publicly in a virtual format throughout the course. The researcher was an observer who had access to the unit material and public interactions but did not take part in the interactions online. The data collection included all public postings from students and tutors, be they official such as the unit syllabus, to unofficial such as questions presented by students on a discussion board. Where possible, the postings were archived to allow review at a later time and to deal with situations arising from synchronous and asynchronous interactions.

3.2.2.2.2 Face-to-face observation

The face-to-face observation data collection consisted of the researcher observing the tutors as they publicly interacted with students throughout the semester. This observation depended on the delivery technologies and methodologies employed by

each unit. For example, there was little point in observing face-to-face while students and staff typed emails or discussion board messages. There was richer data available during face-to-face workshops such as those used in one unit in addition to the online aspect of that unit. The researcher was present in differing forms with the tutors depending on various factors, including the delivery method used to present the course.

3.2.3 Quantitative data collection

The quantitative data collection was undertaken using an online questionnaire. The participants answered questions about their characteristics and their beliefs regarding the capabilities required by online tutors. The participants completed the questionnaire twice, once during the Pre-Unit and again during the Unit Wrap-up phases of data collection. The Pre-Unit questionnaire collected data about participant beliefs concerning online tutor capabilities and demographic data including the participants' experience with online courses, technical skills, education, and background. The Unit Wrap-up questionnaire was shorter as it presented the same online tutor capability items but did not duplicate the demographic questions. (Appendix F and G present the Pre Unit and Unit Wrap-up questionnaires.)

The questionnaire was created and piloted after an examination of the relevant literature and the capabilities presented had been categorized. The five categories presented in Figure 2.2 parallel the five indices which make up the organization of this survey. Selected examples of traits and skills were used as a basis to create the survey items in each of the five indices. The survey was piloted prior to the Pre-Unit phase of data collection. The decision was made to have participants rank twenty items into four groups so that there was 5 items per category. This forced the participants to compare items against each other rather than to simply take each item and rate it on a more traditional scale like a Likert scale. The four groups the participants chose from were: Most Important, Important, Less Important and Least Important. The data from the surveys was used to inform the interview and observation process later in this study. It was also used for triangulation of the research findings during data analysis.

3.3 Context of the study

This section will introduce the context in which the study took place through a description of three main foci. First, the online units and how they were chosen will be presented. Next, the participants and how they were selected will be offered. Finally, the online learning environments which were used will be described.

3.3.1 Selection of online units

The online units in the current study were selected based mainly on the level of interactivity provided by the delivery technologies employed in each unit. The measure of the level of interactivity between students and tutor from the Technology Generations in Distance Education and Open Learning model presented by Oliver and Grant (1994, p. 1). Three units were selected that had a high level of interactivity and three units were selected that had a low level of interactivity.

Instrumental in the selection of the online units were the unit coordinators. They had an intimate knowledge of the delivery technology, course content, pedagogical under structure of the unit and the tutors. There was an effort made to select units that had a number of online tutors, however there were no units available for study that had more than one tutor in addition to the unit coordinators who chose to take on many of the online tutor roles.

3.3.2 Participants

Participants were selected to allow an investigation of the main factors affecting the capabilities of online tutors. These capabilities vary depending on a number of known factors, including the three main factors as identified throughout the literature, which are: 1) the technology used in the delivery of instruction, 2) the pedagogical approach used for the instruction, and 3) the characteristics of the students being taught (Brace-Govan & Clulow, 2000; G. Brown et al., 2003; Eastmond, 2000; Furst-Bowe, 1997; Gibbons & Brenowitz, 2002; Levy, 2003; Mills,

1999; Mortera-Gutierrez, 2002; O'Malley, 1999; Ron Oliver & Herrington, 2002; Palloff & Pratt, 2002; Pascual et al., 2000; Schrum & Hong, 2002; Stevens-Long & Crowell, 2002; Tam, 2000; White, 2000).

The samples for this study drew on three main stakeholders in online education: tutors, students and unit coordinators. Each of these stakeholders had a vested interest in having a successful online educational experience occur. Tutors are the people who have been charged with the instruction and guidance of another, in this case the students who enrolled in an online unit. Without tutors, the students would have no one to instruct and guide them throughout educational content of the unit. Students are the people who are participating to learn the content provided in the unit. Without students, there would be no online unit. Unit coordinators are the administrators from the organization which provide the unit, who oversee the tutors and arrange for the recognition of the unit. Without unit coordinators, there would be no one to organize the institutional aspects of the course and therefore, there would be no unit offering. All three groups of stakeholders are necessary in the online educational environment, as the educational opportunity could not take place without all three groups. Consequently all three groups from the three selected courses were samples for this study. (Appendices H and I provide examples of the Statement of Disclosure and Informed Consent as well as the Student Copyright Clearance, respectively.)

Stakeholders drawn from six selected online units offered at Washabuck University comprised the participants for this research study. The six online units chosen each had one tutor and it will be by the tutors' pseudonyms that the online units and their stakeholders will be described. All names have been changed to pseudonyms to maintain anonymity. The six tutors have been labelled: Benny; Catherine; AC; Margaret; Lauchlin; and William. The details about each of the units will be presented below beginning with a brief description of the unit. This is followed by details of the participants starting with the tutor and followed by the unit coordinator and then the students. The units will be presented in greater detail in the case study section of this thesis.

There are a number of characteristics which all six units share. According to the unit coordinators, they were all designed on constructivist principles of teaching and learning. The units all had a high level of learner independence. They all ran for one semester and were not on the university-wide online learning environment. There was no formal application process as the unit coordinators without exception approached the tutors about tutoring. Every tutor exhibited content expertise in the subject of his or her unit. The distinct details of each unit are presented below.

3.3.2.1 Introduction to Benny's unit

The unit Benny tutored was a postgraduate unit available within the Athenæum educational environment. It was one of four wholly online units which made up a program of studies. Materials and resources were presented for students to interact with in order for students to construct knowledge for themselves with the assistance and guidance of the tutor of the unit. This unit had a high level of instructor and learner interactivity between students and tutor from the model by Oliver and Grant (1994).

The tutor, Benny, was a career educator who had formal training in the field of education. Benny stated the belief that he initially viewed his main role was to be a facilitator of an online learning community, but made an adjustment to better suit the students' beliefs of his role.

The unit coordinator designed this unit as part of a course of study. He was a career educator with expertise in the content area of this unit as well as in the design of online units. The unit coordinator stated that tutors were responsible with facilitating changes in student behaviour so that they take responsibility for their own learning. The students were to do this by becoming actively engaged with the unit material, achieving the proposed student outcomes and demonstrating this through making informed comment on content topics and completing quality work.

As this was a postgraduate unit, all the students had successfully completed a university degree and all were working professionals in different fields. There were three students in Benny's online unit. The students knew each other from previous

units and this had an effect on the level of social non-academic interaction within the unit.

3.3.2.2 Introduction to Catherine's unit

The unit Catherine tutored was an undergraduate unit available within the Harambee educational environment. Materials and resources were presented for students to interact with in order for students to construct knowledge with some guidance from Catherine. This unit had a high level of instructor and learner interactivity between students and tutor from the model by Oliver and Grant (1994).

Catherine was both the tutor and the unit coordinator of this and other units. Catherine had a great deal of experience in online education and had no formal training in the field of education. Catherine stated the belief that there were two keys to success in online education: the interaction between tutors and students as well as tutor preparedness regarding content and time management.

The demographic details of the students were quite varied in Catherine's unit. The majority of the 30 students were women. There was a mix of full and part time students across a wide geographical area. There was also a difference in current employment situations for the students as they ranged from unemployed, employed in the content field, to employed in other areas.

3.3.2.3 Introduction to AC's unit

The unit which AC tutored was a postgraduate unit and therefore all her students had previous degrees. AC's online unit was within the School of Education (Gauntlet) html educational environment. Content materials and resources were presented for students to interact with in order to facilitate the co-construction of knowledge with the assistance of the other students within their group and the guidance of the tutor. There was also a voluntary component where stakeholders met in a formal face to face environment to assist learning success. This unit had a high level of instructor

and learner interactivity between students and tutor from the model by Oliver and Grant (1994).

AC was a tutor was a career educator and had formal training in the field of education. She had experience both tutoring this unit and being a student in the unit before that. AC stated that she enjoyed working with educational technology and she strove to know how this technology was changing education.

The unit coordinator designed this unit many years before as both a distance and face-to-face unit before adapting it to online delivery. She was a career educator with expertise in the content area of this unit as well as in the design of online units. AC and the unit coordinator team-taught this unit as they both acted as tutors and shared the workload accordingly. They viewed themselves as equals and their relationship was unique in this study.

The majority of the students enrolled in this unit were adult postgraduate students and the majority of the students were women. The students were not from any one academic discipline as this was an interdisciplinary unit. The demographic details of the students were quite varied, as there was a large number of international and domestic students as well as a mix of full and part time students.

3.3.2.4 Introduction to Margaret's unit

The unit which Margaret tutored was a second year undergraduate unit. This was the first time the unit was offered online and it was within the Harambee educational environment. Materials and resources were presented for students to interact with in order for students to construct knowledge for themselves with minimal assistance from the tutor of the unit. This unit had a low level of instructor and learner interactivity between students and tutor from the model by Oliver and Grant (1994).

Margaret was a non-teaching professional at the university and tutoring was not in her career path. She did have experience tutoring this unit previously when it was a correspondence class. The underlying premise for Margaret's beliefs regarding

online education was that communication between the stakeholders is the key to success. This led to some frustration for Margaret as she unsuccessfully wanted the ability to initiate contact with the students directly which was not available.

The unit coordinator was a career educator with expertise in the design of tertiary units. He designed this unit as both a distance and face-to-face unit before adapting it to online delivery. This unit was designed on the basis that students can find tutors helpful or not helpful depending on the tutors cognitive style.

The students in Margaret's unit had a range of ages and geographic locations. There was a mix of full and part time students with a wide variety of IT skill levels. There was also a difference in current employment situations for the students as they ranged from unemployed, employed in the content field, to employed in another field. The two constants regarding Margaret's students is that they were predominately women and they expected this unit to be offered in a distance or face to face mode rather than online. This expectation and its ramifications will be covered in greater detail in Margaret's case study.

3.3.2.5 Introduction to Lauchlin's unit

The unit which Lauchlin tutored was an undergraduate unit. This was the first time the unit was offered online and it was within the Harambee educational environment. The design and beliefs underpinning this unit was very similar to Margaret's unit as they both had the same creator and unit coordinator. This unit also had a low level of instructor and learner interactivity between students and tutor from the model by Oliver and Grant (1994).

Lauchlin was a non-teaching professional external to the university. He did have experience tutoring this unit previously when it was a distance unit. The underlying premise for Lauchlin's beliefs regarding online education is that technology is the basis of all interactions. Lauchlin was frustrated by the level of technological knowledge the students needed but did not have at the beginning of the unit.

The students in Lauchlin's unit were undergraduate students. Their demographic details were difficult to determine, as Lauchlin did not know what they were. He dealt with the students on an individual basis and knew specifics about students but was not able to make generalizations about the group as a whole.

3.3.2.6 Introduction to William's unit

The unit, which William tutored, was a multileveled undergraduate unit with both second and fourth year students that had been offered many times before this study. This unit was within the Harambee educational environment. Materials and resources were presented for students to interact with to construct knowledge for themselves with minimal assistance from the tutor. This unit had a low level of instructor and learner interactivity between students and tutor from the model by Oliver and Grant (1994).

William was a non-teaching professional at the university and tutoring was not in his career path. He did not have experience tutoring this unit previously in any incarnation. The underlying premise for William's beliefs regarding online education is that communication between the stakeholders is the key to success.

The unit coordinator designed this unit and acted as a tutor for the one group of the students. She was a career educator with years of experience in versions of online education. She presented the rules in this unit for behaviour and conduct both to promote student success as well as to reduce the potential workload for tutors and coordinators.

The demographic details of the students were quite varied in William's unit. The majority of the 23 students were women. However there was a mix of second and fourth year undergraduate students, which were a mix of full and part time students. There was also a difference in current employment situations for the students as they ranged from working in the field, working out of the field and unemployed.

3.3.3 Online learning environments

There were three online learning environments (OLE) used by the units examined in the current study. All three were created at the institution to suit the needs of a certain unit or groups of units. The OLEs were each specialized for the school which created them. There are a number of characteristics which are common among the three and these will be presented before unique aspects of each of the OLEs. The first was an environment called Athenæum. The second was an environment called Gauntlet and thirdly was an environment called Harambee. The Gauntlet and Harambee environments both used features from the university Virtual Campus, namely the bulletin board which served as a make shift threaded discussion forum so it will be described at the end of this section.

3.3.3.1 Online learning environment common characteristics

The online education environments had a number of common characteristics. All three were locally created and were very group specific so no other groups at this institution used them. All three OLEs were mainly text-based and gave students an interface to access content regarding the units they have enrolled in, such as; assignment schedules, tutor contact details, discussion boards and unit materials. These materials took the form of hyperlinks to both material external to the university online content and documents posted in a variety of formats including Microsoft Word, Microsoft PowerPoint, Microsoft Excel, Adobe Acrobat files, and video files.

All three OLEs were web-based and therefore standard HTML characteristics were involved. This included requiring an Internet browser to access the environment. As these environments were web-based, there was flexibility regarding the ease of adding and removing content that is inherent with all HTML documents. There were also the typical problems inherent in HTML documents, namely viewing concerns for people using older browsers and broken links. The web-based nature of the environments allowed for partial password protection so students and tutors were required to log in to gain access to the unit material in its entirety.

3.3.3.2 Athenæum online learning environment

The Athenæum was used by one of the six units in this study, Benny's. This Athenæum environment required specialized software on the school's servers to run and technical staff who knew the software to provide support for the system.

The visual layout of a typical Athenæum main web page was consistent regardless of the purpose and content found on the page. A sample of a unit main page is presented in Figure 3.1 below.

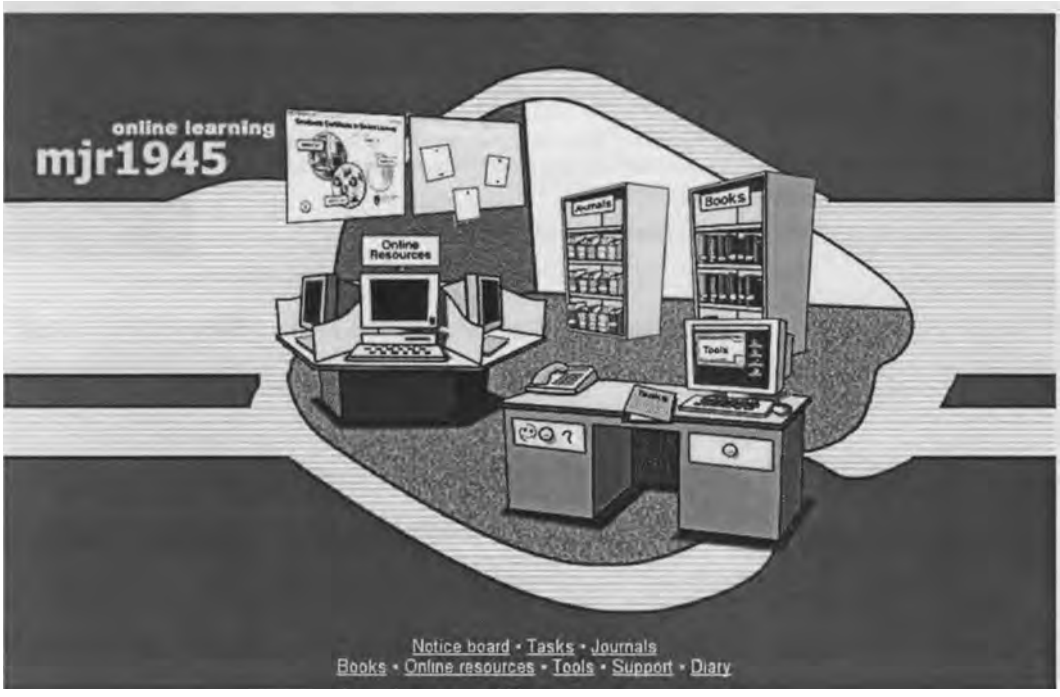


Figure 3.1: Example of an Athenæum unit main page.

As can be seen in Figure 3.1, Athenæum had a mix of graphics based and text based navigation. For every image-mapped section of the introduction graphic, there was a corresponding text link leading to the same location. The navigation system was not consistent, as the content pages link back to this main page and there was no hyperlinking between content pages. This forced the users to return to the main page every time they wanted to select another of the content pages to access. A sample unit content page is presented in Figure 3.2 below.

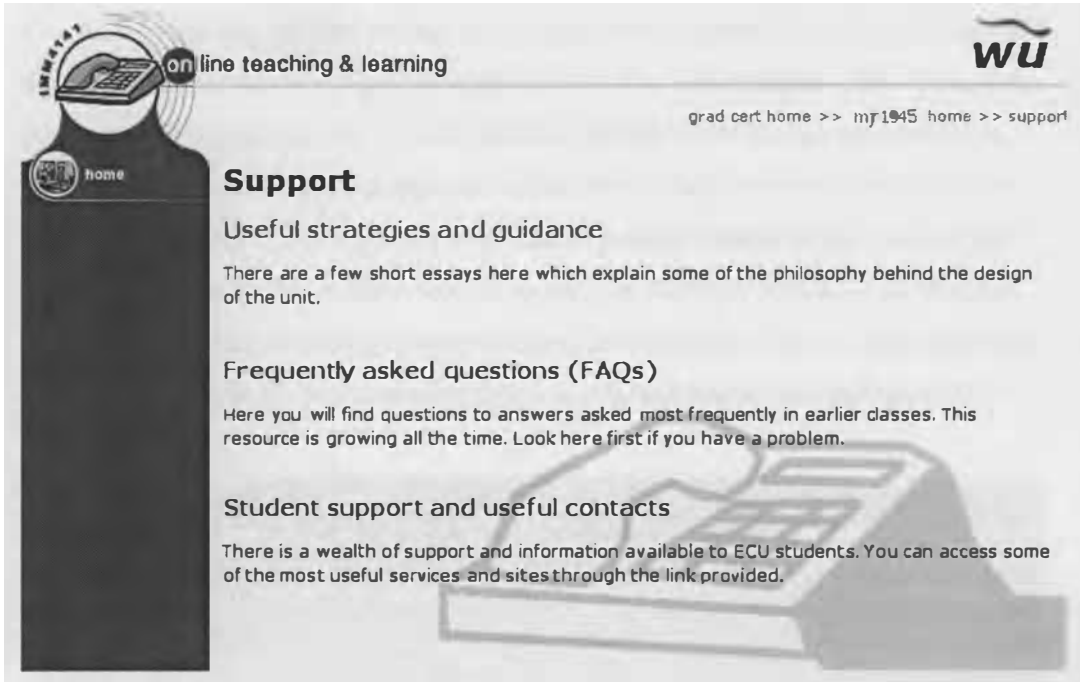
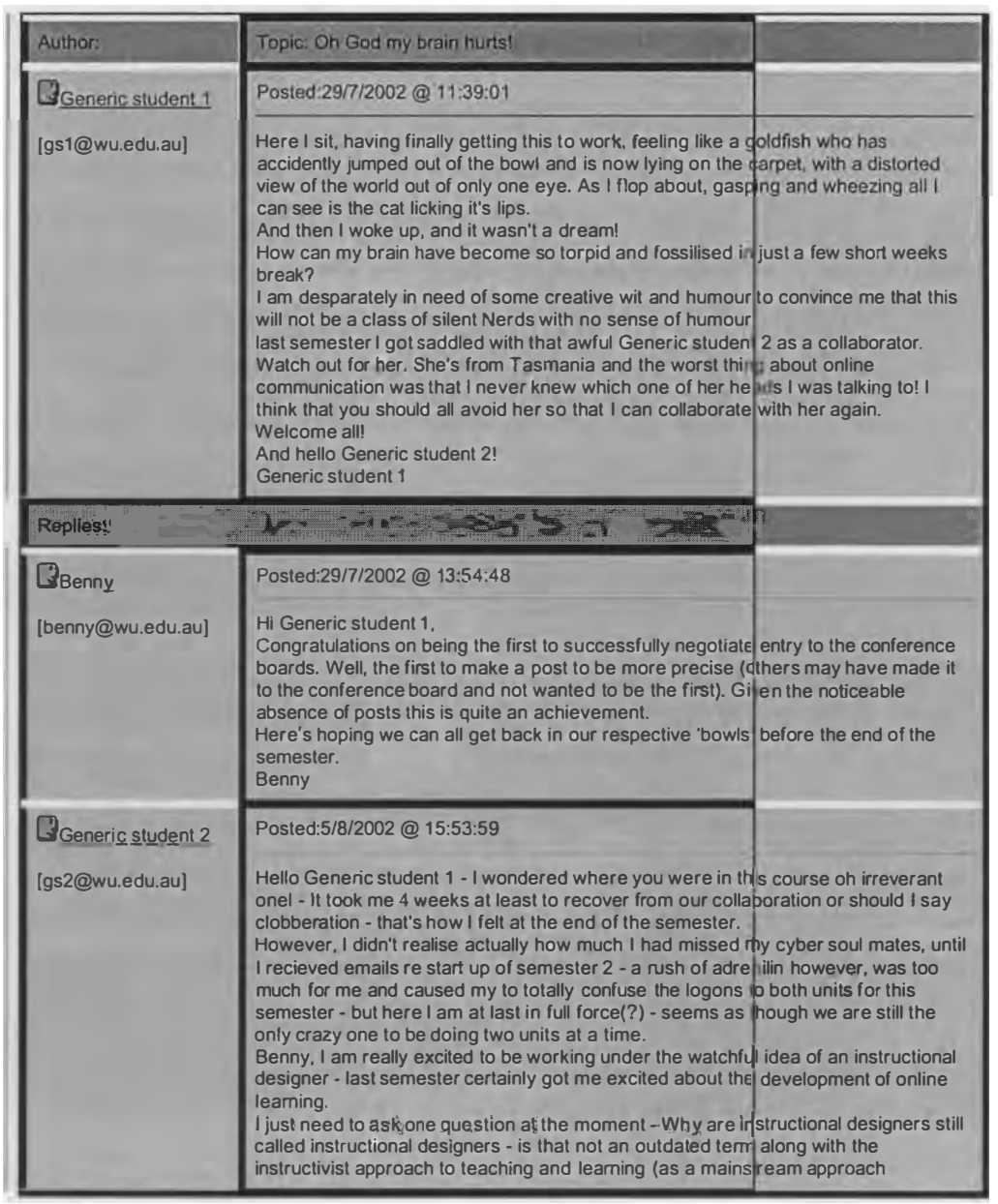


Figure 3.2: Example of an Athenæum unit content page.

The set of links on the Athenæum main page graphically presented the design of the presentation of the unit materials in eight main unit specific categories for the student to browse through: notice boards, tasks, journals, books, online resources, tools, support and diary. The journals, books and online resources content pages led users to resources, both online and off line. The diary was a place where students could record their thoughts electronically, rather like a paper diary, while the support page provided help for problems that were known to arise in online education. The notice boards, tasks and tools content pages had the unit outline type of material and the interactive aspects of Athenæum, like the threaded discussion board.

A typical unit content page dealing with support with links to access is presented in Figure 3.2. The blue bar down the left side of the screen had one link on it which returned users to the unit main page. In the top right hand side of the page underneath the WU graphic, there was a thread of links which showed the page the user was on, another link to the unit main page and a link to the certificate main page. All content pages had this layout of navigation.

The Athenæum was the only online educational environment in this study which had a threaded discussion board purpose designed for this environment. This discussion board was different from the Virtual Campus bulletin board in that the discussion board was designed so the educational stakeholders could see every post in a given topic all at one time. Having every post visible possibly added to the continuity of the review of the topics, as there was no opening of multiple web browser pages or clicking back and forth through hyperlinks required in order to see all the discussion posts. An example of the Athenæum discussion board can be seen in Figure 3.3.



Author:	Topic: Oh God my brain hurts!
Generic student 1 [gs1@wu.edu.au]	Posted:29/7/2002 @ 11:39:01 Here I sit, having finally getting this to work, feeling like a goldfish who has accidently jumped out of the bowl and is now lying on the carpet, with a distorted view of the world out of only one eye. As I flop about, gasping and wheezing all I can see is the cat licking it's lips. And then I woke up, and it wasn't a dream! How can my brain have become so torpid and fossilised in just a few short weeks break? I am desparately in need of some creative wit and humour to convince me that this will not be a class of silent Nerds with no sense of humour last semester I got saddled with that awful Generic student 2 as a collaborator. Watch out for her. She's from Tasmania and the worst thing about online communication was that I never knew which one of her heads I was talking to! I think that you should all avoid her so that I can collaborate with her again. Welcome all! And hello Generic student 2! Generic student 1
Replies:	
Benny [benny@wu.edu.au]	Posted:29/7/2002 @ 13:54:48 Hi Generic student 1, Congratulations on being the first to successfully negotiate entry to the conference boards. Well, the first to make a post to be more precise (others may have made it to the conference board and not wanted to be the first). Given the noticeable absence of posts this is quite an achievement. Here's hoping we can all get back in our respective 'bowls' before the end of the semester. Benny
Generic student 2 [gs2@wu.edu.au]	Posted:5/8/2002 @ 15:53:59 Hello Generic student 1 - I wondered where you were in this course oh irreverant one! - It took me 4 weeks at least to recover from our collaboration or should I say clobberation - that's how I felt at the end of the semester. However, I didn't realise actually how much I had missed my cyber soul mates, until I recieved emails re start up of semester 2 - a rush of adrenalin however, was too much for me and caused my to totally confuse the logons to both units for this semester - but here I am at last in full force(?) - seems as though we are still the only crazy one to be doing two units at a time. Benny, I am really excited to be working under the watchful idea of an instructional designer - last semester certainly got me excited about the development of online learning. I just need to ask one question at the moment - Why are instructional designers still called instructional designers - is that not an outdated term along with the instructivist approach to teaching and learning (as a mainstream approach

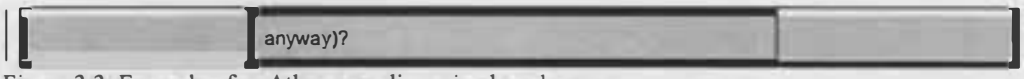


Figure 3.3: Example ofan Athenæum discussion board page

3.3.3.3 Gauntlet online learning environment

The online education environment software used by only AC's unit was called Gauntlet. This static HTML environment required no special software or servers.

Gauntlet was an online learning environment where students could get information regarding the unit they had enrolled in; such as assignment schedules, tutor contact details and access to the unit materials. This information took the form of hyperlinks, or documents posted in a variety of formats including rich text format, SPSS files, and video files. The environment was partially password protected and students and tutors were required to log in to get access to all the unit materials.

Gauntlet was web-based therefore an Internet browser was required to access the environment. This was mainly a text-based environment but there were some links to video files and the interface had stimulating graphics surrounding the text. There were the typical problems inherent in HTML documents, namely viewing concerns for people using older browsers. A sample of a unit Help Desk page is presented in Figure 3.4 below.

Figure 3.4: Example of a Gauntlet help desk page.

There were three versions of the unit materials students had access to: the online version, the CD-ROM version and the paper-based version. Students were encouraged to use either the web-based version of the unit materials or the CD-ROM version of the materials. A CD-ROM which was mailed out before the semester began paralleled the web-based environment. For consistency, both versions had identical content and there were no changes made to either version during the semester. The only difference between the two versions was that the HTML environment did not have built-in threaded discussions and the Virtual Campus bulletin boards were used, just as Harambee used them. Therefore, the CD-ROM version had a link to the discussion boards and Internet access was needed for that. There was also a paper-based version of the unit available to the students which was printouts of all the electronic material other than the video files and access to the discussion boards. The paper-based version contained all the material the other two versions did but did not have the dynamic structure inherent in HTML documents.

The Gauntlet environment had a mix of graphics based navigation and text based navigation system as can be seen in Figure 3.4. For every image mapped section of the helpdesk graphic on the main page, there is a corresponding text cue within each link. This navigation system was not consistent on the remainder of the content pages. The content pages linked back to this main page and the postgraduate study page and there was no hyper linking between content areas. This forced users to return to the main page or the postgraduate study page every time they wanted to select another of the content areas to access depending where they were.

There were two categories of content pages in this environment, unit information pages and research information. The unit information pages took the form of calendars, reading lists, mini-lessons, information about statistical tests and the like. Research information pages took the form of SPSS files, movie interview files and the like, which needed to be analysed during the course of the unit. A sample Gauntlet information content page is presented in Figure 3.5 below.

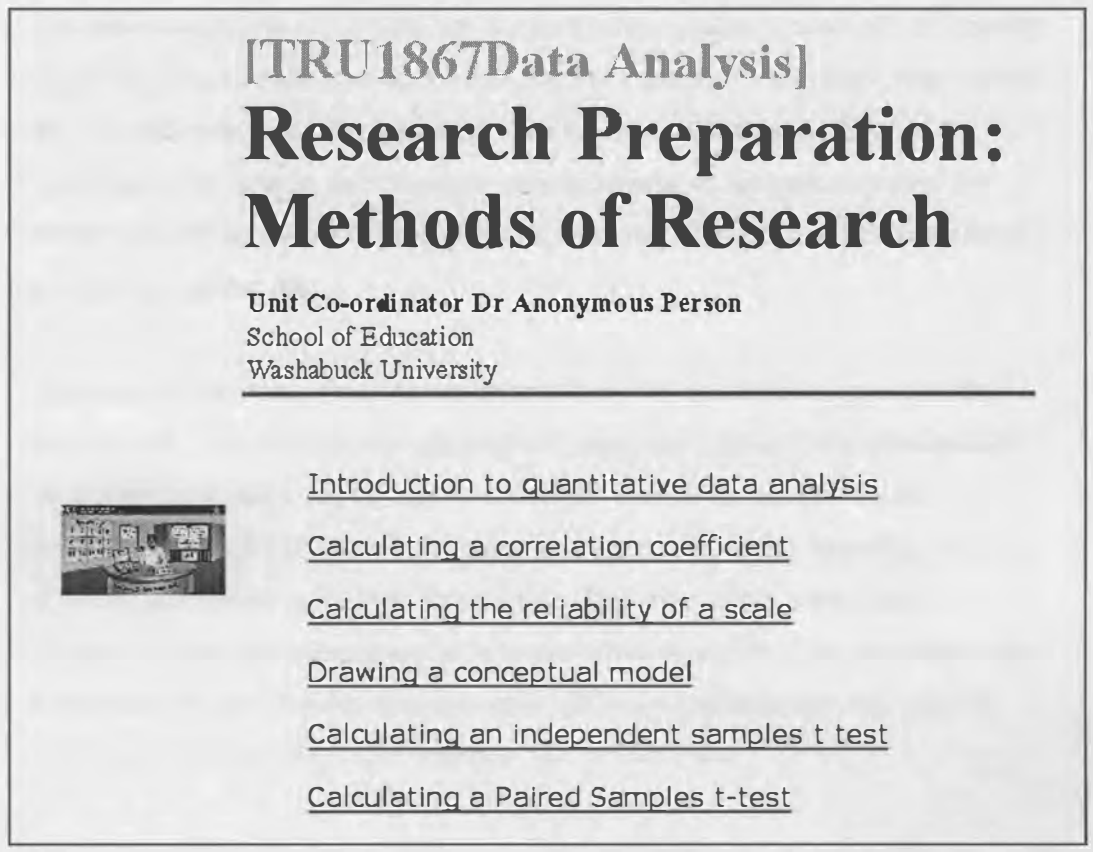


Figure 3.5: Example of a Gauntlet unit information page.

The visual layout of a typical unit information page was consistent regardless of the purpose and content found on the page. The only link out of the content and back to the research portion of the unit was through the small graphic link of the Help Desk page. The research information pages had one difference in look and navigation. Instead of the graphic link to the Help Desk, there was a small back arrow on the right hand side underneath the title of the page.

3.3.3.4 Harambee online learning environment

The online education environment software called Harambee was used by four of the six units in this study namely Catherine's, Lauchlin's, Margaret's and William's. This Harambee environment required specialized software on the school's servers to run and technical staff who knew the software to provide support for the system.

Harambee was an online learning environment where students could get unit content regarding the units they have enrolled in, such as assignment schedules; tutor contact details and access to the unit materials. The content could take the form of hyperlinks to external to the University online content, or documents posted in a variety of forms including Microsoft Word, Microsoft PowerPoint, Microsoft Excel and Adobe Acrobat files.

Harambee is web-based therefore an Internet browser was required to access the environment. The environment was partially password protected and students and tutors were required to log in to get access to all the unit materials. As this environment was HTML based, there was an inherent flexibility regarding the ease of adding and removing content for viewing. This was mainly a text-based environment but there were some links to download video files, but not stream video. There were the typical problems inherent in HTML documents, namely viewing concerns for people using older browsers and broken links.

Within Harambee, there was a gateway to external commercial content from a company called EduLattice. This online content was used in some units as enrichment material which users could access if they wanted. This was an attempt by the school to use pre-existing content without the school having to create material which covered the same material. The attempt to avoid duplication of effort was not required in all the studied units. The EduLattice content was mostly technical and dealt with how to use the computer and certain pieces of software so any units dealing with more theoretical content would not need to access this material. The EduLattice content was bandwidth intensive with large files and a much greater proportion of video than the rest of the content available in the Harambee environment.

The visual layout of a typical Harambee web page was consistent regardless of the purpose and content found on the page. A sample of a unit overview page is presented below in Figure 3.6.

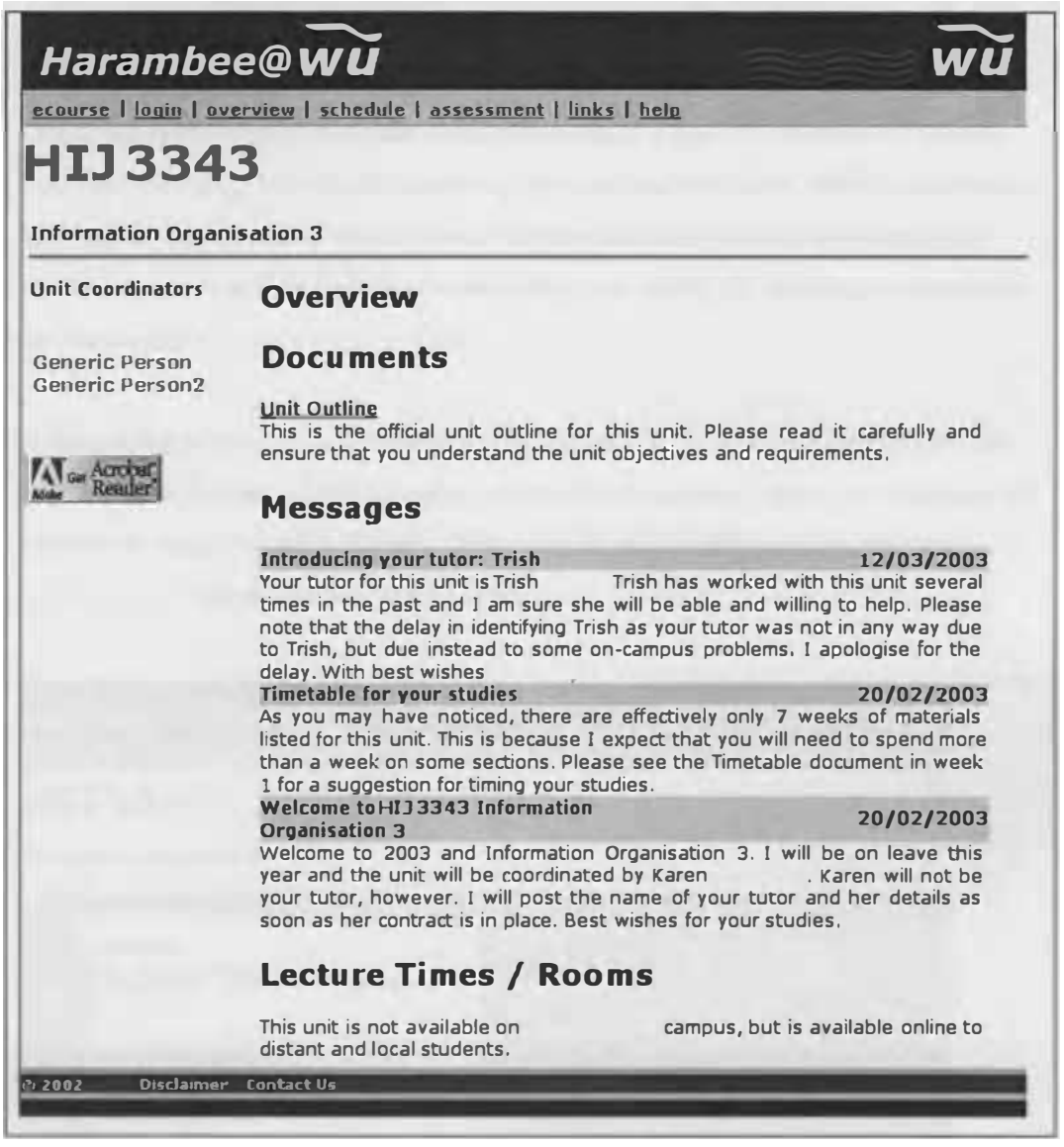


Figure 3.6: Example of a Harambee unit overview page.

Harambee had a simple navigation system as can be seen in Figure 3.6. The horizontal menu bar with a consistent set of links on every page is an example of this. The set of links presented the unit materials in four unit specific categories: overview, schedule, assessment and links. The other three links on this navigation bar are not unit specific and deal with Harambee as a whole rather than being modifiable by the unit coordinator. The Harambee link takes the user to a list of all the Harambee units currently being offered. The login link prompts the user to log in

so they can access all the content available in the unit. The help link has a list of online and offline venues where students can go to get help with situations they might encounter within the Harambee environment. Figure 3.6 presents a typical unit overview page with documents to access, messages from the tutor or coordinator and lecture times / rooms which shows that this Harambee online environment is used to supplement face to face units as well as act as the sole learning environment for online units.

A Harambee schedule page is presented in Figure 3.7. It showed a timeline for the unit and provides hyperlinks to content which students needed to use to complete the appointed assignments for the unit. The content was divided into two categories which were labelled assessment and resource.

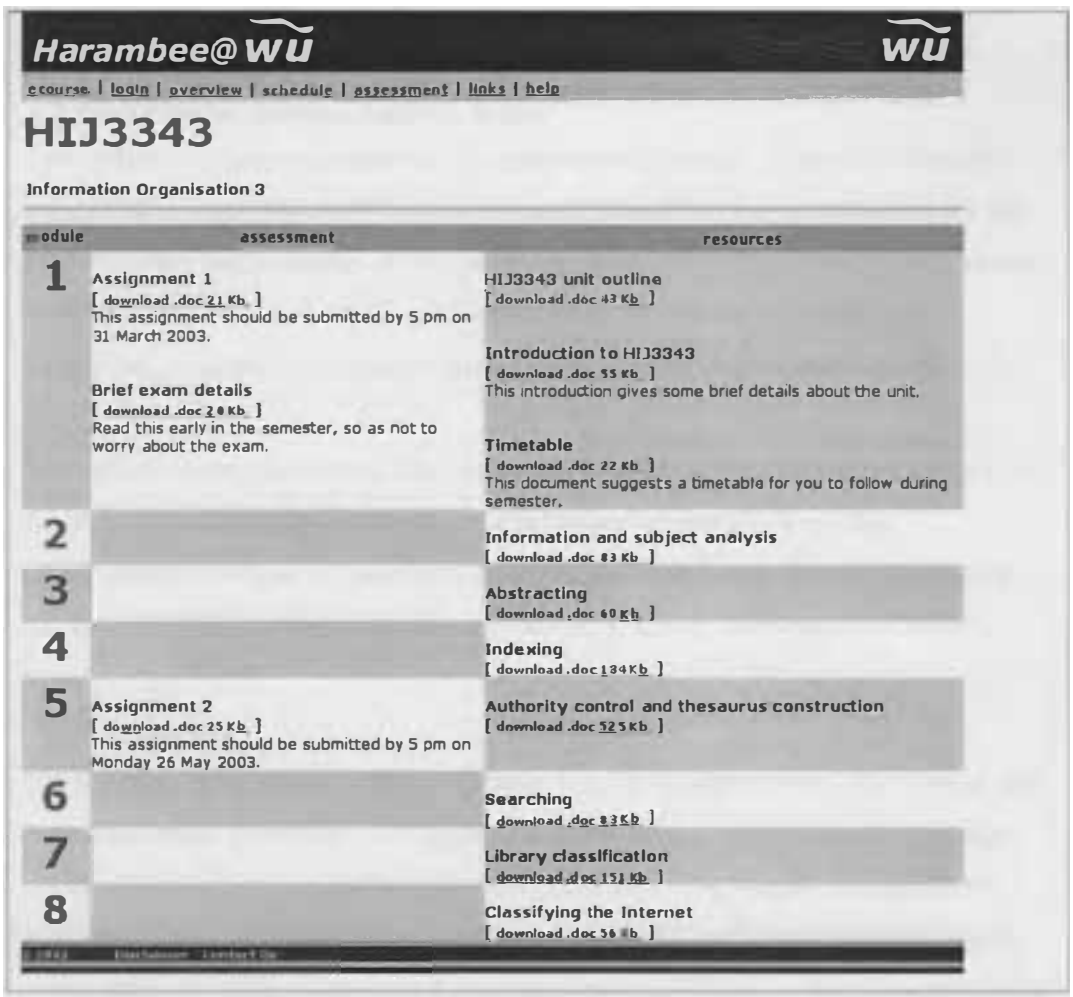


Figure 3.7: Example of a Harambee unit schedule page.

The assessment documents found on the schedule page duplicated the content on the assessment page of the units. The assessment page went into much greater on-page detail but the hyperlinks on both pages aimed at the same documents. The duplication of hyperlinks was constant throughout the navigation of Harambee units. The links page had the same hyperlinks as the schedule page but less on-page detail regarding the content to be found at the hyperlinked site.

There were no interactive communication features built into Harambee. For the students and the tutors to interact privately, email, fax or the telephone was used and on rare occasions, there were face-to-face conversations between individual students and their tutor. For the students and the tutors to interact publicly, the Virtual Campus Bulletin Board was used as a threaded discussion forum.

3.3.3.4.1 Virtual campus bulletin board

Two online learning environments, Harambee and Gauntlet, did not have built-in threaded discussions so the Virtual Campus (VC) bulletin boards were used for this purpose. They had a number of interactive facilities. VC bulletin boards were divided into four sections: Content index, Message index, Post a new message, and Subscribe. A sample of a virtual campus bulletin board page appears in Appendix J.

The content index presented a brief explanation of the appropriate content to post on the bulletin board and was designed as a safeguard against users posting inappropriate messages or posting to the wrong bulletin board. It also contained a number of HTML anchors that allowed the user to link to other parts of the web page.

The message index section of the web page was a basic discussion forum layout with posted messages presented in a left justified manner and responses to the postings being underneath and tabbed over to show propriety. The sample message index presented a great deal of information about who posted each message and when it was posted. The title of the posted message was hyper linked to the message itself so

the user couldn't have a message and the whole message board on the same page at the same time.

The "post a new message" section has text forms for users to enter details about who was doing the posting above the body of the message. There was an option for a URL link to be added in addition to the body of the message. More than one link was not an option with the VC bulletin board. A feature of this section was the preview or post option. Users had the opportunity to preview their message before posting if they chose to.

The final section was the subscribe section. It allowed for the opportunity for students and staff to have all postings automatically converted to email and sent to their email address. An Internet browser was not necessarily required to view these emails as users could use their usual email software to access these messages.

There were design features which threaded discussion boards have which the VC bulletin boards did not have. The bulletin board was unable to have more than one active topic at a time. There was also no facility to have the bulletin board track or collate postings of individuals. It was unable to track postings as read or unread. The message body could not automatically hyperlink more than one URL in a message. The emailed messages did not give any cues to show the threaded nature of the discussion. Due to the design of the message index section, there was a need to scroll to see everything, even on short message indices.

3.4 Conclusion

This chapter presented how the current study proceeded. The design of the study was presented first followed by the method of data collection. A description of the participants was presented next. Finally, the context of the study completed this chapter. The next section of this paper will present the analysis of the collected data.

CHAPTER FOUR

4.0 ANALYSIS

This chapter presents how the data were analysed in the study. Data were drawn from the participants and environments which were described in the previous chapter. There are five sections that in turn present: the data sources; the review of the interviews; the quantitative data; the search for the relationship between the factor categories and the theoretical framework; and the conclusion and summary of the chapter.

4.1 Overview

The research questions focus on the capabilities of online tutors, and therefore the central emphasis of the analysis was on the data drawn from the tutor interviews. The data from the other sources were then analysed in terms of the framework developed from the analysis of the tutor interviews, providing triangulation. Techniques of qualitative analysis (Miles and Huberman, 1984) were used to analyze the data collected from the interviews with the tutors, interviews with students, interviews with unit coordinators, observations of online classrooms and other documentary notes.

4.1.1 Validity and reliability

The issues of validity and reliability were addressed in this study. Throughout the analysis, there were several safeguards in place to ensure the credibility and trustworthiness of the process. The cyclical nature to the analysis was one of these safeguards (Burns, 1994; Gladwin, 1989) with the data being investigated in great detail a number of times. This process included examining all the data sources every time more data were collected from any source (Goetz & LeCompte, 1984). The

process of the pilot study allowed the questionaires to be honed and informed the creation of the interview schedules. The examination of numerous data sources safeguarded this investigation from relying on too narrow a source of data and it allowed for greater triangulation of the findings. Another safeguard to the process included the examination of the current literature which kept the study grounded within a framework of what other researchers had found. Appendices K, L, M and N present examples of the output of the process for others to confirm the findings of this study.

4.2 Sources of data

The sources of data for the study are presented in Table 4.1 were organized into three groups: Primary data source; Secondary data sources; and Supplementary data sources. This section will present the analysis of each of the three groups of data in turn.

Table 4.1

Data source groupings for the study.

Grouping of data source	Data sources
Primary	Tutor interviews
Secondary	Student interviews
	Unit coordinator interviews
Supplemental	Questionnaires
	Observations
	Unit materials

The tutor interviews which were the primary data sources, were examined a number of times. The tutor interviews were reviewed three times, followed by the single review of both the student and unit coordinator interviews. The interviews were thoroughly reviewed but were not wholly transcribed. The analysis of these interviews will follow the chronological order of the three reviews of the tutor interviews, the review of the student interviews, and the review of the unit

coordinator interviews. This section will end with the triangulation analysis of all the interview data which occurred after all the interviews were reviewed.

4.2.1 Primary data source: tutor interviews

The tutor interviews which were the primary data sources, were systematically reviewed three times. The analysis for each review is presented in order followed by a summary of the findings from the analysis of the tutor interviews.

4.2.1.1 First review of tutor interviews

After the data collection was completed, the analysis focussed exclusively on the tutor interviews. This was an attempt to reduce the overlap of information seepage between the sources of information which will be referred to as seepage from now on. To further attempt to reduce the seepage, only one tutor interview was analysed each day.

The initial analysis of each of the tutor interviews followed the same basic format. The recordings of the tutor interviews were listened to while notes were taken. A list was made of the comments each tutors made and the concepts the tutor discussed. From the individual comments, themes became evident in each interview as some comments coincided with others. As the themes emerged, the number of comments the tutor made along the lines of each theme were tallied. The themes were given temporary labels depending on the content areas of the themes. Examples of the temporary labels included: "Facilitate content understanding - Understanding of how learning takes place", "Use Tech to aid content understanding", "Student engagement - motivation - get students active online".

The six or seven most commented on themes in each of the six tutors' interviews were compiled together resulting in thirty-nine total themes on a spreadsheet arranged according to the name of the tutor. The themes were then categorized independent of the tutors, across all the tutor interviews. Based on the content of

each theme and the way the individual tutor presented their thoughts, eleven categories emerged. The categories in alphabetical order were:

1. Communication Milieu - student / tutor;
2. Community;
3. Delivery;
4. Design;
5. Institutional Milieu;
6. Pedagogy;
7. Student Attributes;
8. Student Responsibility;
9. Technical Milieu;
10. Tutor Attributes; and
11. Tutor Experience.

The categories were compiled independent of the online tutor capabilities identified earlier from the literature. This separation between the online tutor capabilities and the categories was done to ensure that any findings evolved mainly from the data, not from the literature. Also, these categories were the precursors of what would later be identified as factors which affect the capabilities of the online tutors, rather than the capabilities themselves.

The initial eleven categories of factors affecting tutor capabilities had varying levels of commonality across the tutor interviews. This ranged from having every tutor mention the category in some major way, such as "Communication Issues - student / tutor" to having only one or two tutors mention the category, like "Delivery" and "Student Responsibility". Appendix K presents this draft of the eleven categories.

During the first round of analysis of the tutor interviews, the process of recording the results was found to need modification. Initially there was no attempt made to keep track of the number of times themes were commented upon and the lists were created as the interviews were reviewed. This provided a list of themes lacking detail to explore and there was no obvious way to determine the importance of the emerging themes. Also at the end of the initial reviewing of the interviews, the list of themes only contained the six or seven most mentioned themes and the less mentioned

themes were removed from the list. This limited what categorization could be done with the data as only major themes could be categorized and there was no way to look at the interview notes to determine what minor themes were present in the interviews.

The weaknesses of this process became apparent as more interviews were reviewed and there was seepage of ideas and comments from previous interviews. With no log of actual comments or any sort of numerical tally, the decision was made after all the tutor interviews were analyzed to review all the tutor interviews a second time and to modify the analysis process.

4.2.1.2 Second review of tutor interviews

The second review of the tutor interviews was made with the conscious decision to explore all the themes emerging from the tutor interviews, not just the major ones. This inclusion of the lesser themes allowed a deeper focus for the analysis, especially for concepts that were basic underlying beliefs in the tutors' practice. These included situations where tutors did not repeatedly mention certain aspects of their capabilities as they were assumed or obvious to the online tutors. The analysis followed the format used in the first analysis of the tutor interviews. The interviews were reviewed one at a time and a detailed, coded list was made of the tutor comments and the concepts they discussed. From the individual comments, themes emerged in each interview. As the themes emerged, the number of comments in each were tallied. The new themes were labelled in an attempt to correspond them to any similar categories from the eleven categories of factors compiled in the first review.

After all the interviews were reviewed, the themes with the most tally marks for a tutor were considered the most important representing how many times the concepts were discussed by the tutor. A benchmark number of tally marks was not required to become most important across the interviews, as the tallying was only considered within each interview, not across the interviews. Therefore in some interviews the lowest number of tallies was more than the most tallies in another interview.

All eleven categories which were created during the first review of the online tutor interviews were retained during the second review of the interviews. Throughout this process, a categorization and labelling system was created to make the finding of the individual comments easier to locate within the interviews. It was at this stage that the individual comments made by tutors in the interviews were labelled as "illustrative examples" of a theme. For example, from AC's interview when she made comments which were sorted into the "interaction student / tutor" category. Her comments included "possibility of misunderstandings due to limits of text, more difficult to do than face to face, not aware of your being misunderstood." Comments such as these focused the analysis much more than dealing only with category labels.

In summary, the second review of each tutor interview built upon all the themes which emerged from the first review of the each interview identifying major themes as well as identifying the less major themes. For example, the themes in William's interview which were seen as major in the first review of the data were:

1. Students responsible for their learning and contact;
2. Institutional management issues complicate things;
3. Communication is key especially student / tutor communication;
4. Students and tutors need to get used to technology in education;
5. Students need to get used to online education culture;
6. Tutors need to be there for the students (& care); and
7. Motivation of students is key

The second review of William's interview built upon the earlier analysis of both William's interview and the initial eleven categories of factors which affect online tutor capabilities from all the tutor interviews. The themes in William's second interview include all the themes in the interview, regardless of the number of tally marks were associated with it in the interview. The themes formulated in the second review of William's interview were renamed to retain his own words in the definition of the themes and to better mesh with the eleven categories of factors and were:

1. Interaction tutor / students;
2. Student expectations;
3. Student responsibility;
4. Care about students as people;

5. Technology usage;
6. Manage Discussion Boards;
7. Marking;
8. Design;
9. Online Presence/charisma?;
10. Institutional issues; and
11. Community

Having clear meanings for the categories was seen as a priority to keep the analysis as effective as possible. There were two groups of definitions required in the second review: the emergent categories from the first review and other themes which emerged from each individual tutor interview.

Eventually, eleven categories of factors were defined which covered the majority of the tutor themes. There were some individual tutor themes which did not fit into the eleven factors. These were examined and the decision was made to recategorize these individual themes into smaller units which fit within the eleven factors. An example of this is Catherine's "Administrative Issues" theme which was split into two smaller themes and categorized into "Management of Teaching Processes" and "Institutional Milieu". In another example, William had two emerging themes, "Students need to get used to online education culture" and "Motivation of students is key" which were finally categorized in the "Student Attributes" category together.

This process ensured that the themes emerging in the tutor interviews during the analysis had similar definitions across the tutors. This was a good check as it indicated that the same concepts were emerging throughout the group of tutors. It must be noted that the eleven categories continued to be in a fluid state in regard to labels and grammatical parts of the definitions. The category "Management of Teacher Processes" first existed as the "Non-Teaching Stuff" category and later in the "Tutor Attributes" and "Delivery" categories.

The generation of meanings of the eleven factors was a necessary step for the organization of the factors which affect online tutor capabilities as there were several interviews which had comments which were seemingly covered by a number of first

review tutor themes. AC's first review had themes which differentiated between "the tutor as guide" and "student motivator" as well as "content facilitator" and "content expert." The process of creating the definitions provided a link between similar concepts.

The second review of the tutor interviews saw the start of the collection of particular quotes which typified the tutors' beliefs on certain matters. Margaret's comment that "seeing student achievement is what tutors are there for" and Benny's "online education is not panacea of everything that ails education," [sic] are telling because they typify beliefs that permeated throughout the respective interviews. In addition, these quotes were typical throughout the majority of the tutor interviews. The collection of quotes such as this aided in the examination of the underlying beliefs which were not overtly mentioned a large number of times.

Next, after all the tutor interviews were reviewed for the second time, the themes presented in each of the interviews were ranked into three groups, which were: *Major Themes*, *Minor Themes*, and *Negligible Themes*. A *Major Theme* was considered an important notion which the tutor presented as a basis of their beliefs regarding online tutoring. A *Minor Theme* was considered a notion which the tutor presented as a noteworthy but not crucial in their beliefs regarding online tutoring. A *Negligible Theme* was considered a notion which the tutor presented as worthy of mention but not worthy of elaboration in their beliefs regarding online tutoring.

The second review of the tutor interviews resulted in refining the method with a movement from the more general to the more specific. The evolution of the definitions for the factor categories was methodical and took a great deal of time. Some of the categorizations in the interviews were more obvious than others, eg. "Technical EduLattice" and "Communication - Student / Tutor." Other categorizations required much more thought as the tutors were vague in their particular application eg. "Design / Pedagogy." Benny's thoughts on the "Design / Pedagogy" are noteworthy as he was the only tutor in the study who tried to implement a pedagogy not used in the design of the unit. All the other tutors used the same pedagogy as the designer planned for the various units. The results of Benny's attempt to follow a different pedagogy led to his numerous comments

regarding online design and pedagogy and the desire to have input into the design of any units he would be involved with in the future.

One methodological concern with the categorization process occurred when grouping different themes from the same tutor and there was a need to resituate them into a bigger category. The example of this is treatment of William's themes of "Care about students as people" and "Online Presence / Charisma" and the hesitation to group them together with other tutors' themes in the "Tutor as a person" category in the second review which eventually formed the basis of the "Tutor Personality" factor which was identified as being a critical factor which affects tutor capabilities.

The area of data which was refined the most during the second analysis of the tutor interviews was the category labelled "Tutor Attributes". This category was found to be far too general, thus it was broken up into a number of different categories including "Subject Epistemology", "Facilitation of Learning", "Management of Teaching Processes", and "Tutor Personality". This is not to say that these four new categories were derived simply from the old "Tutor Attributes." Content items from other categories such as "Delivery" and "Communication Issues - student / tutor" were used to better focus the new categories.

There were a number of categories which were renamed to better encapsulate the definitions the tutors shared these concepts, such as "Communication Issues - student / tutor" being renamed to "Interaction student / tutor". This renaming also enabled a better focus for the concept as it was found that not all the interaction between the tutors and the students was seen to be traditional direct communication, therefore interaction was a more appropriate term. Another example of this is the renaming of "Student Attributes" to "Student Expectations" as a closer examination of the interviews shows this category is about what the students believed and expected rather than any specific attributes of students, like age or ability.

As a result of this reworking, the eleven original categories had evolved to thirteen categories. In alphabetical order, the second review factors and definitions are presented below in Table 4.2.

Table 4.2

Definitions of categories of factors affecting online tutors emerging from the second review.

	Category	Definition
1	Community	The learning community (or lack thereof) created by the design of the unit, the actions of the tutors and the actions of the students.
2	Content Milieu	Issues dealing with the educational material used in the unit; including how the materials were presented, access issues, and how the students interacted with the materials.
3	Design / Pedagogy	How the pedagogy involved with the design and presentation of the unit affects the students and tutors.
4	Facilitation of Learning	How the tutor helped the students interact the content without direct instruction which encompasses the tutors understanding of how learning takes place.
5	Institutional Milieu	How the unit is affected by the policies, procedures and supposed beliefs of the institution that is offering it.
6	Interaction student / tutor	The interaction between the tutor and the student in all situations, at a distance, in person and facilitated by technology.
7	Management of Teaching Processes	The non-instructional teaching processes involved with tutoring, including marking, preparation time and time management.
8	Student Expectations	What students believe as compared to what the tutor believes or what the situation really is.
9	Student Responsibility	What students are responsible for according to the tutor, the unit designer and the university. Not necessarily what the students think they are responsible for.
10	Subject Epistemology	The tutor showing an expertise in the content subject area.
11	Technical Milieu	This was everything regarding technology including learning to use it, potential access problems, and how to use it in a proper pedagogic manner.
12	Tutor Experience	The experience (or lack thereof) the tutor has dealing with aspects of tutoring online and how that affects the unit being tutored.
13	Tutor Personality	The tutor as a person dealing with emotions, behaviours and personality.

The final step of this second review consisted of an examination of the categories of factors as a whole with the aim of developing a hierarchical organization in terms of

importance and priority. It was decided that the categories would be presented according to the number of tutors who advanced the category as a major theme in their interview. This was followed by the number of tutors who advanced the category as minor and finally by the number of tutors who advanced the category as negligible. For example, all six tutors mentioned "Interaction - student / tutor" as a major point in their tutoring but only five of them mention it a great deal as the sixth interview had this as the underlying belief for everything which happened in the online environment. Other categories had fewer tutors describe the categories as major points, and the resulting mix of major, minor and negligible points resulted in the framework of categories of factors which affect online tutor capabilities that can be seen in Table 4.3.

Table 4.3:

Second review hierarchical framework of factors which affect online tutor capabilities

Category	Major Point	Minor Point	Negligible Point
Interaction Student / Tutor	6	3	0
Technical Milieu	4	2	0
Tutor Personality	4	1	0
Design / Pedagogy	3	4	0
Student Expectations	3	3	0
Student Responsibility	3	1	0
Community	2	4	0
Institutional Milieu	2	4	0
Facilitation of learning	2	2	1
Tutor Experience	2	1	1
Teaching Processes	0	6	1
Content Milieu	0	4	0
Subject Epistemology	0	3	0

4.2.1.3 Third review of tutor interviews

The third review of the online tutor interviews was more focused upon all the tutor interview data as a whole than either of the previous two major examinations of the data. This review was characterized by the imposition of the thirteen factor categories upon all the tutor interviews. There had been no previous attempt to connect the information within each interview directly to a common framework and to look for illustrative examples of comments made by tutors to fit in the common framework. The focal point of this examination of the interviews was all the categories in the framework, not just on the categories which were seen as major points in each individual tutors' interview. This was done by reorganizing the text of the interview summaries to coincide with the thirteen common categories, rather than the individual tutor categories which had been created and recorded in the first two reviews of the interviews. Additional illustrative examples were added to the definitions of the categories as the process of creating more focused category definitions had also created more clarity for what was being said by the tutors.

The process of preparing the documents for the third review was done using a combination of paper and pencil, spreadsheet and word processor. The tutor interview comment files ranged from five to twelve pages so a number of strategies were used to aid this step of the analysis. The reading of the text on paper and the ability to lay all the transcribed comments out next to each other allowed for a more seamless recategorization.

As the third review of the interviews took place, it was evident that what had previously been labelled as negligible points in interviews were at times, in fact, the major underlying beliefs of some tutors. An example of this is Lauchlin's "Teaching Processes" theme which became very prominent when it was specifically examined. This was the category which connected together everything else that was said, but it was done so very subtly and during the first two reviews did not emerge as being of much importance. In the two previous reviews it existed as three individual themes; "Teaching processes", "Marking", and "Preparation" and were all labelled as negligible in the interview. However, when the three were grouped together, it became obvious that "Management of Teaching Processes" category was the major theme in the interview.

Throughout the third review, a few grammatical changes were made to the factor definitions for the sake of consistency. As this review finished and in order to triangulate the findings, the process moved onto examining the other sources of data. These other sources of data included the secondary sources, namely student and unit coordinator interviews as well as the supplementary sources of data, the observations, unit materials and questionnaires.

4.2.1.4 Summary of tutor interviews

The primary data source for this study was the online tutor interviews. The decision to use this as the primary data source was made for a number of reasons. First, the data collection schedule had all the other data collected before the online tutors were interviewed. This allowed an opportunity for the tutor interviews to be informed by all the other data collected in this study. Also, people are likely to know their own jobs best. This argument was supported by the data collected in the student interviews as the students' expectations and their views of the roles of the online tutors' did not reflect the reality of the current online educational systems. Several students put forth the belief that online tutors were quite well off financially compared to the small amount of work that was required of them. This was surprising since some of these comments came from online students who happened to be professional teachers who deal with the concepts involved with planning, assessment and classroom management realities in classrooms. The students could not transfer the realities of their work environment to the online education environment. They did not believe the online tutors were doing much work out of their sight, let alone the vast amount of work which was in evidence as the observations and interviews took place.

The data collected from the unit coordinators also supported the argument regarding online tutors' knowing their jobs best. The unit coordinators had a more realistic view of the work online tutors' do compared to students because the unit coordinators had experience as online lecturers in the units they coordinated. However, there were several major points in unit coordinators' views which they seemed unable to transfer to a tutors' perspective. All the unit coordinators had an ownership of the

unit which online tutors' did not have. Throughout the interviews, the majority of the tutors referred to the units as the coordinator's unit, while the coordinators referred to the unit as both belonging to the tutors and the coordinators. The coordinators created and designed the units and they had the ability to change the units whenever and where ever they saw fit. The tutors were only in a position to offer feedback regarding the unit for the unit coordinators to consider. Throughout the interviews, both the tutors and the unit coordinators expressed comments which led to the belief that the unit coordinators were open to suggestions from the tutors about how to improve the unit. It was clear in most cases that the final decision rested with the unit coordinator since both sets of stakeholders saw the unit as belonging to the unit coordinators.

The tutors were aware of their roles and responsibilities due to the timing of the interviews. The interview process occurred just at the end of the semester so the tutoring experience was still fresh in their minds. The experiences the tutors had were quite different across the range of the six units in this study. However, the tutors did have experiences in common, such as all tutoring at the same institution. The dealing with the same institution led to common situations such as the working within the bureaucracy and support networks. Also, all the tutors appeared to be confident with their knowledge of the content in the unit. This might be due to the fact that all the tutors were hand picked for their tutoring position. This was done both for their content knowledge and their pre-existing relationship with the unit coordinator. The emergence of similar themes throughout all the tutor interviews especially with the strength of the continuity of the "Interaction Student / Tutor", "Technical EduLattice", and "Tutor Personality" show that there were similarities in the situations which the tutors experienced.

4.2.2 Secondary data sources: unit coordinator and student interviews

There were two secondary data sources in the study, the student interviews and the unit coordinator interviews. These were used to triangulate the findings from the primary source of data. No new themes were sought from these sources of data. The

analysis of the student interviews are described below followed by the analysis of the unit coordinator interviews.

4.2.2.1 Review of student interviews

The first source of information to be analysed after the tutor interviews were the student interviews. The review of the student interviews was based on the same process as the third review of the tutor interviews since that process had been through a number of evolutionary levels of refinement. The review of the student interviews was characterized by the imposition of the thirteen categories that had evolved from the analysis of the tutor interviews. This was an attempt to connect the information within each interview directly to a common framework and to look for illustrative examples of comments made by students. This examination of the interviews included the imposition of all the categories in the framework, not just those which were seen as major points in each individual students' interview.

To organize the student data, according to the thirteen categories new spreadsheets were created. This was a conscious attempt to reduce the amount of overlapping information from the tutor interviews, especially in regard to specific incidents in units that both tutors and students were involved in.

It must be acknowledged that the process used to recruit student participants may have led to biased data. One student in particular used the interview to vent her negative feelings regarding all aspects of her online unit. No matter what approach the interviewer took with her, answers to questions were always negative. It was so negative that at one point, the researcher had to stop reviewing the data for fear that he no longer maintained his objectivity. After a break from the interview, it was possible to complete the review of the interview with minimal emotional feelings for the interviewee. In fact, the continuance of the review shows the incredible power of "Student Expectations". Regardless of the number of times the tutor repeatedly told the student they were not a burden or a nuisance, the student refused to believe this. It was this lack of belief that was at the centre of the negativity the student felt towards the online unit.

Another issue with interviewing the students was the fact that they were indeed online and usually at a distance. This forced the use of distance communication technology to conduct half the student interviews. One student was telephoned at home and had a difficult time keeping focussed on the interview questions as family members kept interrupting and talking about what was happening in their home.

One interview was structured quite differently from the majority of the student interviews. One student wanted to take part in the study but did not want to do the interview by herself. She was nervous because English was her second language. The student requested that another student from the class also be interviewed at the same time as this would make her feel more comfortable. Therefore, the decision was made to interview two students from the same unit at the same time. Both students knew each other and both had languages other than English as their mother tongue. The rest of the interview process was the same as all the other interviews, namely the asking of questions from the interview schedule and responding to the answers the two students gave. There was a synergy in the interview as the students built upon each others answers to flesh out their beliefs. They did not agree with each other for all the questions that were asked of them and this also added to the richness of the data which was collected as they had mini-debates about their answers to try to better explain themselves.

Unfortunately, during the data collection process, data were lost due to equipment failure. The interview with the student with the strong negative opinions was ninety minutes but microphone misuse resulted in only static being recorded on the audiotape. This student interview was handwritten by the researcher while the interview took place into a document labelled the interview summary, but not to the extent that the audiotape would have captured. The notes taken during the interview covered main points and some anecdotal comments made by the interviewee as well as thoughts the researcher had during the interview. The interview summary was used later as part of the secondary sources of data which aided in the provision of examples for the discussion.

4.2.2.2 Summary of student interviews

In general the student interviews supported the themes which were evident in the tutor interviews. There were a number of notable areas of focus in the student interviews, namely student issues, technical issues and institutional issues. The units were designed to have the students take responsibility for their learning but the students felt not enough was being done for them, especially in regard to the use of computer-based technology. The access and support issues in some units were key points of concern for the students.

In this study, the students in this study exhibited signs of acting as clients. They wanted good value for the money they were paying and a number of them were not happy with the level of service they were receiving. The students were very clear that they expected quality from the unit and the tutor. The tutors were seen as reactive and only had work to do when students initiated contact regarding the dealing or content of the unit. A drawback with the students being viewed as clients is the old business adage "The customer is always right". In this case, the students were not seen as always right as a number of tutors expressed a concern with the students wanting to be 'spoonfed' throughout the unit. This difference of opinion regarding what is appropriate quality for the unit led to some frustrations on the parts of both the students and the tutors.

The level of student responsibilities was very different from the viewpoints of the students and the tutors. The students had an awareness of their responsibilities within the unit and toward their learning, but these were not focused upon in the student interviews to any major degree. The student interviews placed much more emphasis on the roles of tutors. On occasions, the tutor or unit coordinator defined the students' responsibilities. There was also the opposite situation where the unit coordinators and tutors spent a great deal of time trying to negotiate what the students were responsible for.

4.2.2.3 Review of unit coordinator interviews

The second set of information to be analysed after the tutor interviews were the unit coordinator interviews. The review of the unit coordinator interviews was based on

the same process as the review of the student interviews. This review was characterized by the initial imposition of the thirteen categories that had emerged from the analysis of the tutor interviews. This was an attempt to connect the information within each interview directly to a common framework and also provided the opportunity to look for illustrative examples of comments made by unit coordinators to fit in this framework. New spreadsheets were created to allow the unit coordinator data to be organized using the thirteen categories.

As the review of the unit coordinator interviews progressed, it became apparent that the process used to work through the student interviews would need to be followed very closely. Before the review of the unit coordinator interviews, it was expected that the data from these would be used to find examples to support or counter the findings from the tutor interviews. Once more during the review process, there was a temptation to modify categories to reflect upon their relative importance as presented in the coordinator's responses. However, this potential change went against the purpose of the study and therefore, illustrated examples were collected without any further attempts to directly modify the factor categories created from the tutor interviews.

One of the major difficulties in reviewing the coordinator interviews were the various roles the unit coordinators undertook in the units. This study focused on the role of online tutors who did not have a role in the design of the units. The unit coordinators all designed their units but they were also lecturers and tutors in the online units. Several unit coordinators had the roles of tutor and lecturer intertwined in their interviews and the tutor information had to be separated. Perhaps due to the nature of how the online tutors were sought out to work in these units, there was a strong feeling of team and collegiality in the relationship between the people working within a unit. In fact, a great deal of what the unit coordinators commented on in their interviews regarding online education, although interesting was not specifically related to the concept of online tutors, even though they were asked about their beliefs about online education general and online tutors specifically. In the tutor and student interviews, specific situations from the unit were discussed but this approach was not possible with the unit coordinators as they were interviewed in phase two of the data collection process which occurred during the unit, rather than

after the unit finished. It was seen to be inappropriate to put the unit coordinators into a situation where they might have to criticize or be evaluative of the tutors.

As the unit coordinator interviews were conducted during phase two of the data collection process, they were the first interviews to occur. During the first two interviews there were equipment problems which led to the loss of data. The researcher took notes of the interviews in summary form but they were not nearly the same depth or breadth as the audiotape would have been. One of the two coordinators volunteered to be interviewed a second time which minimized the potential data loss.

4.2.3.4 Summary of unit coordinator interviews

As might be expected, the unit coordinator interviews had a great deal more emphasis on the design and administration of online units than the tutor interviews. The unit coordinators were the individuals who had the responsibility to set up the units and make sure all the material was ready for the students. They also appeared to view the units as more fluid and changeable than the online tutors. In the interviews, the unit coordinators often discussed how things would be changed "for next time" as well as providing explanations for why things were currently done a certain way. The tutors did not articulate a similar long term, flexible view of the unit.

The unit coordinators also had more of an emphasis on institutional issues than the online tutors did. The unit coordinators had all coordinated units at this institution previously so they had an awareness of the bureaucracy of the institution, as well as its policies, procedures and history. Arranging contracts, student access to the units and the like were all responsibilities of the unit coordinators.

4.2.3 Supplemental data sources

There were three supplementary data sources in the study, the questionnaires, the observations and the unit materials. These were used to triangulate the findings from the primary and secondary sources of data. As with the secondary data sources, no

new themes were sought after using just these sources of data. The questionnaires will be described first, followed by the observations. The description of the unit materials will complete this section.

4.2.3.1 Questionnaires

The data from the pre and post-semester questionnaires was supplemental to the interview data and were analyzed following the primary and secondary sources of data. A brief description of the questionnaires, time lines for the analysis and an explanation of the analysis including how it supported the other data will be presented.

4.2.3.1.1 Description of the questionnaires

The two online questionnaires had twenty questions concerning the tutors' and students' beliefs about the capabilities of online tutors. These questionnaires were designed to collect quantitative data. The Pre-unit questionnaire collected demographic data including the students' experience with online courses, technical skills, education, and background in addition to participant attitudes about capabilities. The Post- Unit questionnaire was shorter as it did not duplicate the previously asked demographic questions.

The decision was made to have students rank twenty items into four groups so that there were five items per category. This forced the participants to compare items against each other rather than to simply take each item and rank it on a more traditional Likert scale. There were drawbacks associated with this type of design as there were very few standard statistical tests which could be used with this data. The four responses provided were: Most Important, Important, Less Important, and Least Important.

This sort of questionnaire was adopted for a number of reasons. The main one being that during piloting a Likert scale was used and most respondents selected all items to be equally important. This was viewed as a way to discriminate between the levels of importance for each item. It was grouped to reduce the cognitive load on

participants when the study expected to use the questionnaires to inform other data collection. The grouping was viewed as appropriate to examine trends in the responses.

The pre and post questionnaires were designed to have the same twenty questions as originally there was the intention of comparing the pre and post semester results of the surveys. This did not happen however due to the small numbers of surveys completed. Table 4.4 presents the twenty questions participants ranked for this study.

Table 4.4:

Questionnaire questions

#	Question
1	Able to trigger intellectually challenging debates by posing intriguing questions
2	Assess the effectiveness of online programs & materials.
3	Be confident in the operational understanding of software they use.
4	Be warm and caring.
5	Communicate at the level of the student.
6	Create a positive learning environment.
7	Effectively communicate their expectations to students.
8	Employ effective time management strategies when dealing with the unit.
9	Evaluate the students' experiences throughout the course.
10	Familiarize learners with the online learning environment, including protocols for communication and interaction.
11	Have a thorough knowledge of the online process.
12	Have thorough knowledge of the content.
13	Know how to troubleshoot technical problems.
14	Maintain group harmony.
15	Model appropriate online social behaviour.
16	Modify the learning process to suit the student's needs.
17	Provides help in dealing with the services of the institution.
18	Provide prompt feedback to students.
19	Refer students to valuable resources.
20	Use a variety of methods to stimulate online discussions.

4.2.3.1.2 Timeline of the quantitative analysis

The questionnaires were examined during the collection of data. This was done to inform the latter data collection which took place. The formal charting of the questionnaire data did not occur until after all the other data had been analysed and decisions drawn from the qualitative data.

4.2.3.1.3 Description of the quantitative analysis

The quantitative data was initially analysed using a simple tally of results involving ranking scores. At the end of the analysis, this data were analysed using a statistical

software package as part of MicroSoft Excel (MicroSoft, 2003a). Measures of central tendency and distribution were calculated for each item. This quantitative data was then used to triangulate the findings of the primary and secondary sources of data.

4.2.3.1.3.1 Weighting ranks

The creation of a weighting scale was the first step in the statistical analysis of the questionnaires. In total, twenty-eight surveys were submitted in the pre and post surveys so the ranking scale was based on twenty-eight responses. Each response on the survey was assigned a point total. A response of *Most Important* was scored as four points, a response of *Important* was scored as three points, *Less Important* was scored as two points and *Least Important* was scored as a single point. Each of the twenty questions were then ranked according to how many points they received. Table 4.5 presents the question rankings based on the scoring system.

Table 4.5:

Ranking of pre and post questionnaire items.

#	Question	Rank	Total
Q06	Create a positive learning environment.	1	96
Q07	Effectively communicate their expectations to students.	2	95
Q12	Have thorough knowledge of the content.	3	92
Q18	Provide prompt feedback to students.	4	89
Q05	Communicate at the level of the student.	5	86
Q02	Assess the effectiveness of online programs & materials.	6	83
Q04	Be warm and caring.	6	83
Q10	Familiarize learners with the online learning environment, including protocols for communication and interaction.	8	83
Q11	Have a thorough knowledge of the online process.	9	82
Q03	Be confident in the operational understanding of software they use.	10	80
Q08	Employ effective time management strategies when dealing with the unit.	11	77
Q01	Able to trigger intellectually challenging debates by posing intriguing questions	12	75
Q16	Modify the learning process to suit the student's needs.	13	72
Q09	Evaluate the students' experiences throughout the course.	14	70
Q19	Refer students to valuable resources.	15	64
Q20	Use a variety of methods to stimulate online discussions.	16	57
Q13	Know how to troubleshoot technical problems.	17	54
Q15	Model appropriate online social behaviour.	18	53
Q17	Provides help in dealing with the services of the institution.	19	48
Q14	Maintain group harmony.	20	43

Figure 4.6 shows Q06 "create a positive learning environment" and Q07 "effectively communicate their expectations to students" as the two highest ranked items in total. In addition, they were the two items which the most respondents scored as most important out of the twenty survey items with seventeen and sixteen respondents out of twenty-eight, respectively chosing that ranking. Also, very few respondents choose the least important score for these two survey items with only one participant selecting Q06 and only two selecting Q07. Table 4.6 presents the number of respondents who selected each category for each item.

Table 4.6

Number of respondents who selected each category for each item

#	Most Important	Important	Less Important	Least Important
Q06	17	7	3	1
Q07	16	9	1	2
Q12	15	8	3	2
Q18	14	7	5	2
Q05	12	10	2	4
Q02	11	7	8	2
Q04	11	7	8	2
Q10	10	9	7	2
Q11	13	5	5	5
Q03	10	7	8	3
Q08	6	10	11	1
Q01	6	13	3	6
Q16	5	7	15	1
Q09	7	7	7	7
Q19	2	9	12	5
Q20	3	6	8	11
Q13	2	6	8	12
Q15	2	7	5	14
Q17	2	6	2	18
Q14	0	5	5	18

Inversely, shows Q14 "maintain group harmony" and Q17 "provides help in dealing with the services of the institution" as the two lowest weighted questions in total as well as the two questions who the most respondents scored as least important out of the twenty survey items with 18 respondents choosing that ranking. Also, very few respondents choose the most important score for these two survey items with no participants selecting Q06 and only two selecting Q18. The rankings of each item is presented in Table 4.7 below.

Table 4.7

Ranking of the questionnaire items through all four response categories.

Question	Rank	Points	Ranked Most Important	Ranked Important	Ranked Less Important	Ranked Least Important
Q06	1	96	1	8	17	20
Q07	2	95	2	4	20	17
Q12	3	92	3	7	16	16
Q18	4	89	4	9	11	15
Q05	5	86	6	2	18	10
Q02	6	83	7	10	4	12
Q04	6	83	7	10	4	12
Q10	8	83	10	5	9	14
Q11	9	82	5	19	13	9
Q03	10	80	9	12	6	11
Q08	11	77	13	3	3	19
Q01	12	75	12	1	15	7
Q16	13	72	14	14	1	18
Q09	14	70	11	13	10	6
Q19	15	64	19	6	2	8
Q20	16	57	15	16	7	5
Q13	17	54	18	18	8	4
Q15	18	53	17	15	12	3
Q17	19	48	16	17	19	2
Q14	20	43	20	20	14	1

An interesting situation occurred with Q02 "assess the effectiveness of online programs and materials" and Q04 "be warm and caring", as both survey items received the exact same number of respondents' scores for each of the four groupings as they both scored eleven "most importants", seven "importants", eight "less importants" and two "least importants" while ending with a weighted score of 83 points.

There appears to be a direct relationship between the number of participants who selected "Most Important" for an item and the number of respondents who selected "Least Important." There is an inverse relationship between the two selections for the five highest and five lowest ranked items. The more respondents who selected

"Most Importants" for an item, the fewer "Least Importants" it received. The four survey items which received the largest number of "Most Important" rankings were the four items which had the highest totals as well. In fact, six of the top seven total highest scoring items were selected in order of their total ranking.

The analysis of the questionnaires was used to triangulate the findings from the interviews. The will be presented later in this chapter.

4.2.3.2 Observations

The observations in this study took two forms, electronic and face-to-face. The face-to-face observations were very different than originally planned as there was not expected to be any formal face-to-face interaction between the students and the tutors. The face-to-face observations were planned to be with the researcher and the tutor in the same room and having the tutor think out loud as they dealt with the online students. As the study progressed, watching tutors answer email, posting to discussion boards, and the like was not seen as an efficient use of time for either the tutor or the researcher. The original research design did not include having students meet the tutors in a face-to-face environment, however one unit, AC's, did meet face-to-face every second weekend for those who wanted to meet. It was an optional session but a large number of students took advantage of the opportunity to meet their class and group mates as well as the tutor and unit coordinator. The observation of the face-to-face class was very informative as it was a more traditional educational environment and everyone had experience in this type of setting before the unit began. There was also a very good working relationship between the unit coordinator and the tutor, AC, as they acted and were mostly perceived as equals during the unit.

The electronic observations during the unit also presented a great deal of information in a different format. The restriction to public, as opposed to private, communications limited potential observation opportunities as the discussion boards ranged from barely used to used extensively depending on the degree of compulsion. Benny's unit had four posts altogether throughout the entire unit and AC's had several thousand posts. This influences the degree to which these observations can

inform the study. AC's unit had a large number of students and the students were required to work in groups and post all communications online for review by the tutor while Benny's unit had a very small number of students who were working individually most of the time and Benny's students already knew each other before the unit began so they already had preferred ways to communicate with each other that did not include the discussion boards. This use of the discussion boards reflects more on the design of the student population and demographics of the unit rather than the capabilities exhibited by the online tutor. One unit coordinator mentioned that the number and quality of posts on the discussion board was one way to help determine the effectiveness of the tutor in the unit. In this case, the unit was neither Benny's or AC's and had several hundred posts midway through the unit. The posts in this unit were reactive ones for the most part as students were expected to work through content at a speed conducive to finishing everything according to the schedule of assignments laid out in the unit outline. No attempt was made in the design of the unit for the creation of an online community other than to allow students access to public online discussion boards. The structure of the use of the discussion boards was left to the students and the tutor.

4.2.3.3 Unit materials

The unit materials which were collected throughout the study from the unit websites offered a great deal of insight into the design and content of the units. These were particularly helpful in interpreting the discussion board postings as several units dealt with a variety of different academic areas in which the researcher had no formal training. The content from the websites allowed for the familiarization of the terms used in each academic environment. In the undergraduate units it was initially easier to understand the content as it was at a more basic level of knowledge compared to the post-graduate units, which had high level conversations taking place with terminology not familiar to the researcher. An aid to understanding some of the postings is that Catherine and William both tutored units which had both undergraduates and post-graduates working with the same content. The assessments and activities were different at each level but the two groups of students in each unit respectively both used the same discussion board.

The examination of the design of the units came primarily from the content of the website with the materials presented to the online students and the assessment activities the students needed to complete. The interviews with the unit coordinators also informed the study as to the design of the unit but there were a few differences between what was expressed in the unit coordinator interview and what seemed to be happening with the unit. There were a few assumptions made as to how the opportunities presented to the students would be used, and how the students actually used them.

4.3 Triangulation of the data

The triangulation of the data analysed in this study had two distinct stages: the triangulation of the interview data and the triangulation of the data including the questionnaires. These will be presented in chronological order with the triangulation of the interview data being first. The triangulation support from questionnaire data will follow.

4.3.1 Triangulation of the interview data

At the completion of the review of all the interviews, namely the online tutors, online students and online unit coordinators all three sources of information were examined to determine whether the findings were consistent throughout. This examination was based on the thirteen categories of factors which emerged during the reviews of the tutor interviews. The illustrative examples collected from the tutor interviews were examined in comparison to the comments made by the student and unit coordinators during the interviews. Therefore the end result was thirteen different documents each with sections for the illustrative examples from each of the three groups of interviews, as well as a section for the definition of the category and the importance placed on the category by each of the tutors in the interview process. An example of the *Student Responsibility* document is included as Appendix L.

The triangulation of the data from the secondary sources was completed before any supplementary source information was examined. Supplementary sources included observation, pre and post questionnaires and the material from the online units and they were used to provide further illustrative examples of the categories that had emerged during the review of the interviews.

This examination of the supplementary sources used all the categories in the framework. There was no attempt to create new categories out of the information provided from the secondary sources of information. It must be noted that much of the information provided from the secondary sources were of limited value due to the nature of the collection process. For example, the electronic observations were only of the public discussion boards and did not include email or the telephone communication between the tutors and the students. Several units with Benny's in particular had a paucity of posted comments on the discussion boards which led to little data being able to be collected from this source.

4.3.2 Triangulation support from questionnaire data

Of interest is the manner in which the questionnaire data coincides with the conclusions reached independently with the qualitative data specifically through the three reviews of the tutor interviews. The five highest ranked items will be presented with a brief description of how they support the findings of the other data analysis. The five items in ranked order were:

1. Q06 "create a positive learning environment"
2. Q07 "effectively communicate their expectations to students"
3. Q12 "have thorough knowledge of the content"
4. Q18 "provide prompt feedback to students"
5. Q05 "communicate at the level of the student"

The highest ranked item was Q06 "create a positive learning environment". There are a number of critical sub-capabilities which this item relates to. These include: "Content Expertise – Enriching interactions", "Course Management – Management" "Process Facilitation – Values", and "Technical Knowledge – Attitude".

Very closely ranked behind the first item was Q07 "effectively communicate their expectations to students". It was related to: "Evaluation – Assessment", Evaluation – Feedback", "Process Facilitation – Communication" and "Process Facilitation – Values".

The third highest ranked item was Q12 "have thorough knowledge of the content". This was related to: "Content Expertise – Knowledge and skills", "Content Expertise – Enriching interactions", "Evaluation – Assessment", "Process Facilitation – Disposition" and "Technical Knowledge – Technical pedagogy".

The fourth highest ranked item was Q18 "provide prompt feedback to students". It was related to: "Course Management – Management", "Evaluation – Assessment", Evaluation – Feedback", and "Process Facilitation – Communication".

The final of the five highest ranked items was Q05 "communicate at the level of the student". This was related to: "Content Expertise – Enriching interactions", Evaluation – Feedback", "Process Facilitation – Communication" and "Process Facilitation – Disposition".

4.4 Examining the relationship between the factors and the framework

The interviews provided much information that enabled the creation of the thirteen categories of factors which affect the online learning environment. However, there was a difficulty encountered when the categories were incorrectly thought to be capabilities of online tutors. This difficulty became apparent early in the analysis process whenever the emerging categories were examined in relation to the theoretical framework. Some categories just did not fit into the framework as capabilities which an online tutor could possibly possess. An example of this were the student focused categories of "Student Expectation" and "Student Responsibilities." It was unrealistic to believe that tutors could have a capability which affected the demographic situations, life experiences and backgrounds of students. This difficulty necessitated a determination of what the emerging categories were, as they were not online tutor capabilities.

There were similarities between the emerging categories and what was presented in the literature as factors which affect online tutor capabilities (Phipps & Merisotis, 1999). Throughout the literature, student factors are presented as factors which affect the capabilities of online tutors (Beaubien, 2002; L. Cooper, 2001; Darmawan, 2000; Dominguez & Ridley, 1999; Kroder et al., 1998; R. Oliver & McLoughlin, 2001; Phipps & Merisotis, 1999). The emerging categories were more specifically defined than much of the literature but there was a definite connection between the online student factors in the literature and the emerging categories. In addition to the student factors, factors that affect online tutor capabilities such as design (Bronack & Thornton, 1999; Carr-Chellman & Duchastel, 2000; Eastmond, 2000; Gibbons & Brenowitz, 2002; Goodyear et al., 2001; Levin et al., 1999; Mann, 1998; McDonald & Postle, 1999; Peregoy, 2000; Schoenfeld-Tacher & Persichette, 2000) and technical milieu (Behncke & McNaught, 2001; Benson et al., 2001; Burnett, 1999; Farrington & Bronack, 2001; Hodges & Saba, 2002; Kroder et al., 1998; Matuga, 2001) were unearthed.

The factors in the literature coincided with a number of the emerging categories so the categories were re-examined to discover if they were factors which affect the online tutor capabilities. They were found to be factors which affect the quality of the online learning environment. It is through the learning environment that the factors affect the capabilities of online tutors. The re-examination strengthened the argument that the emerging categories were not capabilities. They were actually factors which affect the quality of the online learning environment.

As the next step, it was necessary to determine the mediated relationship between these factors and the tutor capabilities. There was no direct link between the factors and the categories, as the learning environment mediated the relationships between the factors and the capabilities. It is this mediated relationship that is at the centre of the entire study. This process was achieved by a comparison of the thirteen emerging categories from this study and the five main areas of capabilities identified in the theoretical framework from the literature. Five areas of capability were identified in the framework of this study. These were: Content Expertise, Course

Management, Evaluation, Process Facilitation, and Technical Knowledge (Figure 2.2).

The comparison and mediation of the thirteen factors and the five areas of capability was conducted in a number of steps. First, the five capabilities and their definitions were arranged into a chart. This allowed for individual viewing so each could be concentrated on without the distraction of the other four capabilities. Second, each of the thirteen factors was then examined in turn to determine whether a factor had an effect on the capability in question. If some effect was identified, the factor was put on the chart next to the capability. An explanation of the effect the factor had on the capability was recorded on the chart. An example of the resulting chart for the explanation of the relationship between the factors and the Evaluation capability is presented below as Table 4.8. Appendix M presents the chart of the explanation of the relationship between the factors and five capabilities.

Table 4.8

Explanation of the relationship between factors and the Evaluation capability

Capability	Factor	Explanation of relationship
Evaluation	Design / Pedagogy	Course evaluation provides feedback to the unit coordinator on how things may be improved or changed and what situations were encountered during the unit.
	Tutor Experience	It is the self assessment of the tutor to reflect on the situations which arose during the unit and how the positives may occur more often next time and how to proactively reduce the negatives. It is the learning the tutor did during the unit and how they will improve next time.
	Interaction student / tutor	This is the feedback the students receive during the unit in regard to assessments, either formal or informal. This feedback is meant to help the students achieve success in their learning and the way the message is interpreted by the student can be greatly affected by how the feedback is presented to the student.
	Management of Teaching Processes	The assessment, monitoring and feedback portions are related to teaching processes like marking and time management. Getting feedback to the students and monitoring progress need time management and the marking to be done.

4.4.1 Relationship between Technical Knowledge and the factor categories

The capability "Technical Knowledge" was examined first as it appeared at initial glance to have obvious connections with the factor category "Technical Milieu". Four of the thirteen factor categories affected the capability "Technical Knowledge". The categories included: "Technical Milieu", "Institutional Milieu", "Design / Pedagogy", and "Tutor Experience". Examples of the mediated relationships uncovered between the capability "Technical Knowledge" and the thirteen factor categories are presented below.

4.4.1.1 Relationship between Technical Knowledge and Technical Milieu

The relationship between the capability "Technical Knowledge" and the factor "Technical Milieu" is straightforward. Both focus on the use of technology in the unit. This use includes both the tutor and student use of technology in technical support and access situations. In order to prevail over the technical milieu of their unit, tutors needed to exhibit different levels of technical ability. Some tutors had a great deal of technical ability which they did not exhibit because it was not necessary in their unit. Other tutors were constantly exhibiting technical ability because of the circumstances in their unit. The very nature of an online learning environment has technology as an element running throughout the foundations of the unit. The tutors in a technology-based learning environment need some knowledge of this technology in case it is required during the unit.

There are a number of examples of tutor's technical knowledge affecting how they tutored their unit within the technical milieu of their unit. William had little need to demonstrate his technical skills as there were few technical challenges in his unit. The technology worked and the students managed successfully. At the other extreme, Lauchlin constantly displayed excellent technical knowledge as students needed his help often. Lauchlin tutored a unit which was a technical unit and accessed the EduLattice content materials. He had to help students with understanding the technical content while also assisting them to gain access to the EduLattice materials.

4.4.1.2 Relationship between Technical Knowledge and Institutional Milieu

The next relationship is between the capability "Technical Knowledge" and the factor "Institutional Milieu". This relationship focuses specifically on the use of technology by the institution offering the unit. This use includes both the tutor and student use of technology in technical support, communication and access situations. Some units had specific technical support provided by the schools for certain aspects of the unit. The tutors in these units needed to be aware of this and to know which support to direct the students to if help was required. Other units had all email interaction controlled by a separate administrative centre within the institution. Therefore the tutors in these units needed to learn how to effectively communicate with the students by going through the administrative centre rather than communicating directly with the students. Some units had content available for students to access based on institutional limitations which tutors needed to be able to explain to students if the need arose. This included situations where students wanted to know why some required readings were not downloadable from the unit website and others were. In this study, the tutors were the employees of the institution and were the first people the students asked for help. Given that these units had a technology component in their delivery, there were always technical questions for tutors to deal with.

There are a number of examples of tutor's technical knowledge affecting how they tutored their unit within the structure of the institution. For example, Catherine knew that she was the institutional contact for the students, not just for matters connected to the unit. She stated that she "needed to know the system to use the facilities available to students such as counselling stuff." There was a situation in Catherine's unit where she spent a great deal of time interacting with a student who needed counselling. She tried to get the student to contact a university counsellor but the student wanted to be counselled by Catherine. Since Catherine knew the institution procedures and policies, it aided in her successful attempt to connect this student with appropriate university support services.

4.4.1.3 Relationship between Technical Knowledge and Design / Pedagogy

The next relationship is between the capability "Technical Knowledge" and the factor "Design / Pedagogy". This relationship focuses on the pedagogical design of the unit and how the tutor used technology. The technological pedagogy underscores all the technology decisions made in the teaching of the unit online. This includes the decision to have units be self-study units, lecture-based or orientated toward group-work. Tutors achieved success when their level of technical knowledge enabled them to run the unit the way it was designed. If the design required more technical knowledge than the tutor possessed, there was the potential for frustration from students, such as with Margaret's unit.

There are a number of examples of tutor's technical knowledge affecting how they tutored their unit. Margaret was expected to provide support to students creating html when she did not have a great deal of experience with web page design. Margaret's unit did not have a prescribed application for web page creation as this was designed to give students more freedom to use what suited them best. This resulted in students requiring support in a variety of applications rather than just one. Which in turn caused Margaret to adjust the support she gave to the students.

4.4.1.4 Relationship between Technical Knowledge and Tutor Experience

The final relationship is between the capability "Technical Knowledge" and the factor "Tutor Experience". The focal point of this relationship is the technical abilities the tutor possesses which are directly related to the unit. Several tutors were experts in their fields and could do many things with technology. However, tutors achieved success when they knew both where students were going to have problems and were able to alleviate these before the problems became a negative experience. This was evident when one student had a technical challenge and the rest of the students were informed. It is often the case that if one student has a problem, others will encounter this same problem as well. In order to ascertain what exactly a technical problem is, the tutor needed to have a level of technical knowledge.

There are a number of examples of tutor's technical knowledge and experience affecting how they tutored their unit. For example, one student told Lauchlin that the

online material was inaccessible and it was the fault of the institution. After a telephone conversation, Lauchlin discovered that the student had three virus checkers and two firewalls running on his home computer. Apparently, the two firewalls were not allowing anything to be downloaded and once they were turned off, the student was able to access the online material. Another example of tutor experience and technical knowledge was AC's experience at the beginning of the semester. She created detailed explanations of potential technical challenges which students had confronted the previous year. These explanations helped to alleviate student concerns as there was immediate effective support available for the students if they had problems.

4.4.2 The process of examining the mediated relationships between factors and sub-capabilities

This process involving the "Technical Knowledge" capability was completed with similar results for each capability, as several factor categories affected each capability. This ranged from having two factors affecting the capability in the case of "Course Management" to seven factors affecting the capability in the case of "Process Facilitation". Table 4.8 shows the results of the first attempt to explore the mediated relationship between the capabilities and the factors which affect the capabilities.

This process laid the groundwork for the more detailed exploration which was to follow regarding the mediated relationship between the capabilities and the factors. The relationships which seemed obvious ended up having shorter definitions and explanations than the relationships which did not seem as obvious. Also, the more the mediated relationships between the capability "Process Facilitation" and the factors which affect the learning environment was explored, the more it seemed that more and more factors affected "Process Facilitation". This revelation indicated that the initial process of exploring the mediated relationships was too general for the purposes of this study. Therefore the decision was made to be more specific in the analysis of the theoretical framework.

The more detailed analysis of the relationship between the online tutor capabilities and the factors which affect the learning environment involved the examination of the relationship between the original 24 sub-capabilities and the 13 factor categories. The organizational structure of the five capabilities and the 24 sub-capabilities was presented earlier in Table 2.1. The more focused examination followed the same basic process as the earlier process that was limited to the capabilities. This more refined approach presented the sub-categories individually and the factors which affected each sub-category.

The 13 factor categories were then examined individually to determine whether each factor had an affect on the sub-capability in question. If there was seen to be some affect from the factor on the sub-capability, the factor was put on the chart next to the sub-capability and a very brief explanation of the affect the factor had on the sub-capability was recorded in the third box of the chart. This brief explanation is a smaller version of the descriptions created in section 4.4.1 that examined the factors and the capabilities. An example of this process can be seen in Table 4.9. The sub-categories within the capability "Technical Knowledge" were examined first as it was found to have obvious connections with the factor category "Technical Milieu" as was determined by earlier analysis of these relationships. The result of the continuing attempt at uncovering the relationship between the sub-capabilities within the capability "Technical Knowledge" (TK) and the 13 factor categories is presented in the table below.

Table 4.9

Relationship between Technical Knowledge and the thirteen factors that affect online tutor capabilities

Sub-capability	Factor	Explanation of relationship
TK – Attitude	Tutor Personality	The tutors emotions and behaviour towards technology affects how the technology is presented in the unit
TK – Attitude	Tutor Experience	The experience the tutor has with using technology in online tutoring gives a knowledge of the types of situations they can expect to deal with
TK – Choice of resources	Design / Pedagogy	The design and pedagogy underlying the unit affects what technology is appropriate to use for what in the unit
TK – Choice of resources	Technical Milieu	The assessment of the tools to use in the unit for selected learning tasks and the abilities of the students
TK – Choice of resources	Technical Milieu	Solving technical problems by solving the tech problem or making connections to where the problem can be solved
TK – Choice of resources	Subject Epistemology	Finding and using rich media content and appropriate content can be done by demonstrating content expertise
TK – Technical Pedagogy	Design / Pedagogy	The theory of learning underlying the unit design is affected by the (tech) pedagogy of the people involved in its creation
TK – Technical Pedagogy	Community	Using the technology to create and manage an online learning community
TK – Technical Pedagogy	Technical Milieu	Understanding the technology to know what the technology can and cannot do in the delivery of the unit
TK – Technical Support	Technical Milieu	Helping to solve tech problems and making sure the students have the skills to troubleshoot their own problems

As this focused analysis of the relationships took place, there were items which did not fit into the proposed structure of the analysis. For example, the factor "Tutor Experience" was found to have strong relationships with all the sub-capabilities within the category "Process Facilitation". Therefore the decision was made to define the relationship between "Tutor Experience" and the capability "Process Facilitation" directly, without expanding it to all of the sub-capabilities within

"Process Facilitation" especially since all the sub-capability relationships had practically the same definitions.

The process of analysing the relationships in such a detailed manner allowed for a framework of data which decisions could be made on and judgements to be presented with regard to several of the research questions.

4.5 The criticality of the online tutor capabilities

After the initial analysis of the relationship between the online tutor sub-capabilities and the factors which affect the sub-capabilities, a secondary research question regarding which capabilities were most critical was to be answered.

Two things were vital to the determination of criticality of the tutor capabilities, one was the chart representing the relationship between the sub-capabilities and the factors while the other was categorized illustrative examples of factors from the tutor interviews. The chart was an expansion of Table 4.6 and showed the relationship between the 24 sub-capabilities and the 13 factors. The illustrative examples included a sorted listing of major, minor and negligible points which arranged the factors according to the emphasis placed on them by the tutors during the interviews. As the illustrative examples were examined, trends emerged regarding the emphasis placed on the thirteen individual factors. It became apparent that there was a distinct difference in the level of emphasis between the five most emphasized factors and the eight less emphasized factors. Therefore the decision was made to sort the sub-capabilities according to only the five most emphasized factors.

The sorting was colour coded according to the factor so there were six colours used in this coding, one for each of the five most emphasized factors and white for the eight less emphasized factors. The five factors which affect online tutor capabilities that were emphasized the most in the tutor interviews in order were:

1. Interaction Student / Tutor
2. Technical Milieu
3. Tutor Personality

4. Design / Pedagogy
5. Student Expectations

The result of this process of sorting the sub-capabilities according to the factors which affect them can be seen in Appendix N.

In exploring the criticality of the sub-capabilities, the information from the eight less emphasized factors was disregarded and information from each of the five most emphasized factors was listed separate from the others. The five lists of factors and the sub-capabilities they were related to were then brought together in one list and organized by capability and then sub-capability.

This process listed only the sub-capabilities which were affected by the most emphasized factors. From this list, there were a number of sub-capabilities which were affected by numerous factors. The duplicate listings were removed as the sub-capabilities only had to be on the list once in order to be counted. For example, the "Content Expertise" sub-capability of "Enriching Interactions" (labelled CE - Enriching Interactions) was listed as being affected by two factors, "Interaction - Student / Tutor" and "Technical Milieu" but either of the listings was sufficient to be included in this list of critical sub-competencies.

The result of this sorting process was originally intended to highlight the listed sub-capabilities as critical and all the unlisted sub-capabilities would be considered less than critical. However, this process left 23 of the 24 sub-capabilities still being listed. The only sub-capabilities which were not listed were "Course Management - Institution Contact" (CM - Institution Contact), "Evaluation - Monitoring" (E - Monitoring), and "Process Facilitation - Facilitating" (PF - Facilitating).

With so few sub-capabilities filtered out, the process to establish the criticality of the sub-capabilities needed to be revised. Therefore, the illustrative examples which included a listing of major, minor and negligible points which sorted the factors according to the emphasis placed on them by the tutors during the interviews was re-examined in a more focused way than the previous examinations. As the illustrative examples were re-explored, further trends emerged in the emphasis placed on the individual factors. It became apparent that there was two levels of distinction within

the factors. There was a distinct difference in the level of emphasis between the five most emphasized factors and the eight less emphasized factors. There was also a different level of emphasis placed on the first three factors which separated them from the remaining ten factors. Therefore the decision was made to use only the three most emphasized factors to determine which sub-capabilities were affected by the emphasized factors. Other than using three factors rather than the original five, the procedure for doing this was identical to the original sorting process.

This new sorting process was much more effective at filtering out sub-capabilities than the previous attempts as the list of critical sub-capabilities was much smaller. This process left sixteen sub-capabilities and of the fifteen, the groupings the remaining sub-capabilities were interesting at a capability level. The "Technical Knowledge" capability had all its sub-capabilities being critical and the other four capabilities had at least two sub-capabilities each. Table 4.10 presents the sub-capabilities identified as critical for online tutors.

Table 4.10

Critical online tutor sub-capabilities

Capabilities	Sub-capabilities
Content Expertise	CE - Knowledge and skills
	CE - Enriching interactions
Course Management	CM – Management
	CM – Admin
Evaluation	E – Assessment
	E – Feedback
Process Facilitation	PF – Communication
	PF – Confidence
	PF – Disposition
	PF – Values
Technical Knowledge	TK- Attitude
	TK- Choice of resources
	TK- Technical pedagogy
	TK- Technical support

In addition to identifying the online tutor critical sub-capabilities, this process also identified the less than critical sub-capabilities. Using the phrase 'less than critical' is not meant to suggest that the remaining sub-capabilities are not important. All the sub-capabilities used in the study are important, yet the 'less than critical' list are not as critical as the previously presented sub-capabilities. Only the "Technical Knowledge" capability does not have at least two sub-capabilities on the 'less than critical' list. The remainder of the five capabilities have two or three sub-capabilities represented as important, but not critical for online tutors. Table 4.11 presents the sub-capabilities identified as less than critical for online tutors.

Table 4.11

Less than critical online tutor sub-capabilities

Capability	Sub-capability
Content Expertise	CE - Finding & providing resources
	CE - Question analysis
	CE - Relevant tasks
Course Management	CM - Institution contact
	CM – Pedagogy
Evaluation	E - Unit evolution
	E – Monitoring
Process Facilitation	PF - Environment creation & maintenance
	PF – Facilitating
	PF – Pedagogical

At the end of the analysis process, a number of sub-capabilities were shown to be critical by the educational stakeholders. The capabilities were based on the study's theoretical framework which was created from a review of the current literature. There were five capabilities in the framework, which are: Content Expertise, Course Management, Evaluation, Process Facilitation, and Technical Knowledge. From the five capabilities, there were twenty-four sub-capabilities which were grouped to make up the five capabilities. A diagram of the capabilities and the corresponding sub-capabilities can be seen in Table 4.10.

The process to determine critical sub-capabilities involved determining what the interview subjects expressed as the major factors which affected the capabilities. An attempt to ask subjects directly about the capabilities provided some useful data but not enough to make any firm judgements. They made comments regarding communication skills, content knowledge and ability to use technology, however there was not enough detail available in a general sense to expand upon these answers and come up with any firm conclusions. Much more useful data was obtained by asking interview subjects to discuss their roles and specific situations which arose during the unit they had been involved in.

The tutor interviews were analysed to determine what they believed affected their capabilities. These illustrative examples of factors which affect online tutor capabilities were sorted based on whether it was a major, minor or negligible point in each interview. These factors were then examined in relation to the five capabilities and later the twenty-four sub-capabilities presented in Figure 4.10. This examination resulted in a valuation of each sub-capability according to how critical it was to the tutors.

From the five capabilities, all were found to have at least two sub-capabilities which were considered critical. Figure 4.10 presents the fourteen critical sub-capabilities of online tutors. These findings were supported by the successful triangulation of data from the primary, secondary and supplementary data sources.

This chapter presented the analysis of the data collected in the study. The data sources were presented first. The review of the interviews was second. The quantitative data analysis followed next. The search for the relationship between the factors which affect online tutor capabilities and the online tutor capabilities then preceded the conclusion and summary of the analysis. The next chapter will present detailed case studies of the participants in the study.

5.0 CHAPTER FIVE

5.01 CASE STUDIES

As this is an ethnographic study, there is an interpretivist nature to the inquiry as reflected in the structure of the thesis. The six studied units and the participants will be divided into individual case studies to make the structure of the report more closely mirror the structure of the study itself. The case studies will also illustrate the application of the findings from the previous chapter.

The case studies will be labelled according to the pseudonym of the tutor, for example, "Benny's Unit." This labelling is for convenience sake only as it was obvious throughout the study that it was the unit Benny tutored but it was not a possession of Benny's. The case studies will be presented according to the pseudonym of the tutor and there has been no attempt made to place the units in any sort of order of supposed importance.

Of the six units examined in this study, only four have been written up as case studies. Two of the units in the study, Margaret's unit and Lauchlin's unit were created and coordinated by the same person. As the study progressed, the experiences and situations in both units were very similar which led to the decision not to produce two case studies producing identical findings. The final unit, Catherine's, was not used because Catherine served as the tutor and the unit coordinator. The decision was made to include Catherine's comments from the interview for analysis purposes but the underlying lack of control of the design of the unit was missing in this situation so the case study was not written up.

5.1 Case Study #1: Benny's unit

5.1.1 Unit overview

The overview of the online unit will be undertaken in three sub-sections. First, a description of the unit will be presented. Then there will be the design of the unit which will be followed by the notional role of the tutor in this unit. This will lead to the next section of the case study which is the overview of the tutor in this unit.

5.1.1.1 Description of the unit

The unit which Benny tutored was a postgraduate unit and therefore all the students who studied the unit had previous degrees. Benny's online unit was available within the Athenæum educational environment. (The description of the Athenæum educational environment was presented in the data collection method section 3.3.3.2 Athenæum). It was one of four wholly online units which made up a program of studies. The online students needed to successfully finish all four units to complete the program or students could choose to take units which suited specific needs they might have without completing the entire program of studies.

According to the unit coordinator who designed this unit, the unit was designed based on social constructivist principles of teaching and learning. The factor, *Design / Pedagogy* was manifested through materials and resources that were presented for students to interact with in order for students to construct knowledge for themselves with the assistance and guidance of the tutor of the unit. The students were required to create a project in the learning area which was intimately connected to their work environment. This created an authentic learning situation for the students as their learning was pertinent and relevant to their life situation rather than being a school assignment which was separated from the rest of their life. The Australian Universities Teaching Committee identified this unit as an exemplar of online units which were designed to have an emphasis on the process of students solving real

world problems which have been presented to them (Ron Oliver & Herrington, 2002).

The unit was also designed on the premise that the students were responsible for their own learning which is an aspect of the *Student Responsibility* factor. This included their need to engage with the content material in order to achieve success in the unit. The unit coordinator stated that the unit was "Built around learners exhibiting competencies rather then content" and "Content was not seen as an end in itself, but a means to an end." Also stated was that the learning outcome for this unit was "To have the students become more knowledgeable in a certain field." On the Technology Generations in Distance Education and Open Learning scale (based on Oliver and Grant, 1994, p. 1), this unit had a high level of learner independence and a high level of instructor and learner interactivity, and would fit between email and a computer mediated communications unit.

A facet of the *Technical Milieu* factor was that the online environment was designed to utilize asynchronous communications and to be flexible for the students. Students were required to use their time management skills as they could study when they had time to, regardless of the time of day or the day of the week. The asynchronous nature of the unit demonstrates one of the strengths of this online educational environment, namely the flexibility of studying. It was possible to study when it was convenient, rather than being tied to a specific lecture schedule as is the case in traditional face to face classes. The flexibility included allowing the students to choose how much they interacted with the other students. This asynchronous and flexible nature did not necessarily lead as far as the creation of an online learning environment. This is evident in the students choosing to have the online tutor be a person who answered individual student questions as a content expert, rather than the facilitator of an online learning community.

An aspect of the *Institutional Milieu* is since its inception, the unit had been carefully sheltered from much of the bureaucracy of the university. The Flexible Delivery Centre (FDC) had negligible levels of contact with the unit. As a resulted the formal feedback mechanisms including quality assurance did not apply. This was measured through a variety of informal ways, including monitoring the satisfaction levels of

student postings on the discussion boards and online forums, examining the quality of student work, and simply having individual conversations with the students regarding the unit. In addition to the lack of formal feedback systems, there was also no formal system in place for the evaluation of online tutors. This unit never had a sessional tutor previous to Benny as the other creator of the unit and the program of studies was away for the semester.

The *Technical Milieu* included infrequent challenges such as when the server went down. The tutor stated, "early on couldn't log students or myself in so that was a frustrating experience." The students accepted these situations as they happened infrequently because of the efforts of both the tutor and unit coordinator. This meant that students had as comfortable a learning experience as possible with little disruption to their learning as a result of the delivery method. Therefore students spent a trifling amount of time dealing with technical problems associated with the delivery of distance education. This unit was considered a success in the opinion of Benny and the unit coordinator regardless of the mode of delivery because the final pieces of student work showed quality and learning outcomes were achieved.

The small number of students in the unit led both Benny and the unit coordinator to describe the class as a "boutique" offering. Benny stated that with a class of twenty or more students, he would not have been able to handle the vast amount of private interaction which occurred. He commented that he had time constraints from the other commitments in his life and he was being paid to work a certain amount of time to tutor this unit. If the unit had not been a boutique offering, the interaction and behaviour of the students and tutor would have been much different.

5.1.1.2 Unit design

According to the designer, this unit was designed to maximize the potential for student success based on the social constructivist principles of teaching and learning. An aspect of this design was the balance which was found between flexibility and consistency throughout the unit. The unit coordinator said "the unit is run by providing tasks or activities that anchor the learning and those elements determine the learning and actions of the students with how they are going to do it." For

example, the decision was made not to mandate what specific piece of software the students were required to use in their studies and in the creation of their projects. The lack of consistency in software usage was an issue for some students as an aspect of *Student Expectations*. Benny did not necessarily have expertise in or access to the software the students chose to use. Therefore, there was little opportunity for the tutor to have intimate technical knowledge of all the software being used by the students. The student belief that the tutor would be able to troubleshoot all possible software is unrealistic but it was a concern worthy of noting by the interviewed student. He stated that "having everyone use the same software would make things much easier."

The decision to allow students to choose their specific software was a facet of both *Design / Pedagogy* and *Technical Milieu*. The unit coordinator explained this as not wanting to limit the students to a specific application or force them to gain expertise in one piece of software if they already had expertise in a different application. The financial costs involved with imposing specific software were also a concern as some students might not have had access to the prescribed software while having access to another application which was suitable for the same purpose. Therefore specific technical knowledge was sacrificed for flexibility as flexibility was seen as a more important requirement by the creators of the unit for the students to achieve success.

The pedagogical structure of the unit was student centred and this required the unit to be tutored in a learner centred way which had aspects of *Design / Pedagogy* and *Interaction student / tutor*. According to Benny, part of this tutoring process included getting the students to engage with the structure of the unit since "just because the structure is there doesn't mean will engage with the process [sic]." Benny expected that the students would interact with the unit materials a great deal more than they would have in a traditional teacher centred environment. This student centred learning design allowed for flexibility but did not allow for the students doing assignments at the last minute. Benny remarked "student centred learning doesn't allow for doing assignments at the last minute which involve reflection." The assignments were designed to involve reflection on the students' part regarding their work and their learning.

According to the unit coordinator, this unit was designed for motivated students who want to learn and the students need "a good degree of self discipline." It is critical for students to have many supports in their lives to foster success as "the work of the unit becomes part and parcel of their lifework." This grounding of the unit's work in this context for the students is designed to make the learning relevant. The unit coordinator also said "students have practical places to ground learning and you get a lot of advantages from it."

According to Benny, the structure of this online unit was different from the traditional mode of external delivery as there was no lockstep approach "500 page guides with 'read this now' sort of messages and everything is step by step." This change from external mode to online mode was difficult for some students as it led to "no more spoonfeeding" from Benny. The students needed to discover how to learn in this new environment, as they were the ones who needed to "decide what they would do and not do." Having the students take control of their learning was a positive learning outcome in the opinion of both the tutor and unit coordinator.

5.1.1.3 Notional role of the tutor

From the unit coordinator's perspective, the tutor's role was to support the students' learning. Practical examples of this included "don't create uncertainty because the system isn't perfect and uncertainty causes students alarm and the first response they will have is to get back to the tutor and expect a very rapid fix and we aim to please." In the words of the unit coordinator, the tutor's job was to "facilitate not impede." The tutor was expected to keep the students engaged, keep the lines of communication open and to provide formative feedback for students as they progress through the unit.

From the student perspective through *Student Expectations*, the tutor 's role was to "provide a toolbox rather than be a fountain of knowledge". Tutors were seen to be part of the teaching and learning team rather than the leader of the team. The online education environment is "more a meeting of equals than that of a performer and an audience." Online tutors need to participate more as partners rather than leaders in order to live up to student expectations. There were facilitation and guidance roles in

what the students expected in a tutor whereby "the students provided the power but the tutor provided the steering for what direction things were headed." Motivation and mentoring were seen as important things for the tutor to be proficient in as it was felt by the students that the more motivated they were, the better work they accomplished.

5.1.2 Tutor overview

The overview of the tutor, Benny, will be presented in three parts. A description of the tutor will be presented first. A presentation of the beliefs held by Benny is presented next. Finally, an account of Benny's personality completes this section.

5.1.2.1 Description of the tutor

Like all the online tutors in this study, Benny was handpicked to tutor this online unit. He was a tutor who had an education background including previous formal training as an educator. Benny also exhibited expertise in the content area and one of the reasons Benny was chosen to tutor this unit was for his knowledge in this area.

There were a number of reasons why Benny chose to tutor this online unit. As an example of *Tutor Personality,* Benny remarked, "I really wanted to become actively involved in teaching online." Being a career educator, Benny said in the interview that he thinks online education will change the roles of educators in the future and he wanted to know more about where education was headed. The unit was a good fit for Benny as he said "I wanted experience and they became available at the right time for me." Benny also had beliefs regarding the concepts involved with tutoring online and wanted to use a more "hands on" approach than what he had experienced when he was involved with other online units. Another determinant for Benny in his decision to tutor this online unit was the financial renumeration which was being offered to do the tutoring. The money was an 'of course' reason because he mentioned that the money was a definite influence given his current financial situation. The final reason Benny mentioned that he decided to tutor this online unit is that the unit coordinator personally asked him if he would. This request by the unit coordinator was important to Benny in his decision making process.

5.1.2.2 Tutor beliefs

When Benny started in his role as an online tutor, he stated the belief that his main role was to be "a facilitator of an online learning community." This is different than the role he ended up playing as he "adjusted his role to suit them rather than forcing his beliefs on them." Benny made an adjustment to fit the role the students wanted him to play.

The *Community* factor was consistent throughout the semester. A strong conviction which Benny had prior to his involvement in this unit as tutor was that online collaborative communities were very important to the success online students have in their studies. In Benny's own words during the interview, "a tutor should be good at creating a social environment, communication and developing a social environment which encourages learning." This belief was challenged by the students' decision through *Student Expectations* not to interact in a way Benny decided was appropriate for an online learning community. An aspect of *Tutor Experience* was apparent with Benny's reaction to the lack of student interaction on the public discussion boards. Benny initially felt that he did not act as a good online tutor because there no students actively took advantage of the public social environment he had attempted to create. This led to his redefinition of what he felt an online tutor had to do in order to aid his students to achieve success. This redefinition included Benny "stopped pushing the creation of a learning community."

Benny
Facilitating Reflection
Posted:12/8/2002 @ 11:11:46

Hi ***** *****and *****, (student names)

I appear to have confused the issue - I apologize for that.

The BLOGGER or Chat (MSN ...) would be an additional recourse to the reflective journal.

The reflective journal is a unit requirement and at this stage can't be changed.

I know that journals can be painful but I believe in there value as learning tools. Please use the 'diary tool' (it is active) to post your journal entries. It is probably easier to write these in word first and then copy and paste them - this is up to you.

I will discuss the points you raise with **** (unit creator) when she returns.

Benny was the only tutor in this study who attempted to impose his beliefs regarding online communities onto a unit whose design did not allow for this thereby emphasizing the factor, *Community*. Every other tutor in this study followed the design of their units without attempting to change the basic structures of the unit. Benny's belief led him to a great deal of thought and frustration about both his role in the unit and the design of online communities. No other online tutor in this study expressed any sort of feelings similar to Benny's in regard to having firm beliefs regarding online education tested by the students. After much reflection and with the mostly unvoiced support of the students, Benny said he was "forced to redefine role into one that was about answering questions." He changed his role from a facilitator of an online community to a support person for students on an individual basis. This decision was very fruitful for both students and Benny as a great deal of the tension associated with the personal interactions in the unit was alleviated.

Benny initially attempted act as a facilitator of an online learning community. He attempted to create a positive social environment which would aid students throughout the unit. This role of facilitator caused much dissonance in the unit as the students' did not want to proceed to where Benny attempted to guide the unit. When Benny redefined his role and became a support person for the unit, he saw himself as changing his role to one of "answering individual student questions." *Tutor Personality* was obvious when Benny said "It was the only decision to make but it dampened his enthusiasm about the unit and process." This new role was supported by the students as answering questions is what they wanted from the tutor.

Benny
Getting started
Posted:9/8/2002 @ 14:48:11

There are so many interesting issues to consider when developing an online community. In summary;

- There needs to be some form of motivation
- Extrinsic motivation may be useful initially
- Intrinsic motivation is required to sustain meaningful communication
- Post graduate versus undergraduate groups may also be an issue

Currently I am warming to the notion of a short socializing period followed by a disorientating situation to stimulate a need for students to access the conference boards.

Would this work for you?

Student
Getting started
Posted:10/8/2002 @ 08:47:28

Benny,

This is kind of what we did in the ***** unit... most students really found that it was very challenging and the time they spent in the forums helped their sanity - not vice versa ;-)

IT may have been that those who really participated well were highly motivated in the subject matter and would have done well/ found other means of support (probably via lots of phone calls to me) ... however as they were all struggling as mentors and coming up against real issues - in a sense they mentored each other - it was very interesting dialogue.

I'm interested in how an email group compares.... you obviously cannot look back over the conversation as easily but it does save the time in going into the site and fighting your way through lots of layers... with bigger groups a listserv might be good? Has anyone tried these or compared them to a forum?

5.1.2.3 Tutor personality

After the examination of the discussion board and interviews, Benny was portrayed to be very hardworking and supportive in his role as tutor. Benny found the unit's public interaction disappointing at times but he managed to change his role and he enjoyed the positives in the change. His adaptability allowed these positives to outweigh any frustration he encountered. These positives included a number of factors like *Interaction student / tutor* and *Subject Epistemology*. Examples of these were privately interacting with the students, sharing his expertise with others, assisting students to engage with the content of the unit, and observing the students grow from their experience with the unit.

Benny had excellent electronic communication skills which he ended up using in a mainly email format. He had a relaxed confidence with his abilities and he was able to project this in his communication. Benny was also extremely organized and was able to direct students to resources within the content area.

5.1.3 Student overview

The overview of the students in Benny's unit will be presented in three facets. A description of the students will be presented first. A presentation of the behaviours of the students is presented next. Finally, an account of the experiences of students completes this section.

5.1.3.1 Description of students

As in any educational setting, the students make up an integral part of the learning environment. There were three students in Benny's online unit and it is doubtful that the institution would have allowed the unit to be offered with the low number of enrolments if it had been offered in a traditional face to face environment. The students were all working professionals. An aspect of the *Community* factor was the students knew each other because they had been previously enrolled together in other units. This association affected the level of social non-academic interaction throughout the unit.

Student
Welcome
Posted: 1/8/2002 @ 09:36:24

Hi Everyone,

I'm *****. I live on the Nth Coast of **** in the **** (place name) area. I wear many hats and my study supports all of them!

I have a contract to provide support to the English lnaguage, literacy and numeracy teachers and programs for **** (work place). **** in *****(place name) is quite different to other states. Over half our provision is VET however we still retain a very flexible, informal, community based approach.

With another hat I teach casually at ***** (work place) both in the undegrad HRD units in the Social Science degree and also in the Post-grad VET units. Last semester I redesign one of these units for online delivery and this semester have a few students studying in online mode and other distance (text based) students accessing parts of the online materials as they choose. We use BlackBoard as a platform - its a challenge making something as dry and admin based learner friendly - wouldn't it be great to have a platform that actually helped teachers teach well!!

Finally I'm on the Executive of the Australian ***** (organization) and my job there is to support the exec with IT type stuff including managing the website - check it out at http://www.***.edu.au

During the interview process, the interviewed student in this unit made note of the fact that he was provided with a great deal of support and encouragement by his employer. He stated that an "Employer funded scholarship bought one study day a week." An offshoot of this support from the employer is the motivation in the student to not "let the side down" by not doing well in the unit after all the effort put in by others to support him in this endeavour.

The interviewed student originally saw himself as "a loner before working in an online learning community." This experience of studying online was a positive one for the students involved. Before studying online, this student "thought online education was more of a textbook online rather than a learning environment" structured as this unit was.

5.1.3.2 Student behaviours

The students in this unit chose not to interact in a public manner any more than was absolutely necessary. Privately, the students interacted with each other and Benny a great deal which were evidence of the factors *Community* and *Interaction student /*

tutor. This private communication did not constitute an online learning community in Benny's opinion and this led to actions which both Benny and the students found frustrating.

The students choose to limit the learning environment communication to mainly private modes, mostly email and synchronous chats or telephone calls. The public discussion boards which were created were basically ignored. However the community and collaborative study involved in the unit was seen as a strength by the students and initially as a failure by the tutor. In fact, another aspect of *Student Expectations* was the interviewed student who saw the "need for more creation of class identity and collaborative study online." However, he did not use the available, identified tool to make this happen. There were strong interpersonal ties which were created in a previous unit and continued through this unit and were facets of the factor *Community* which affected Benny's tutoring capabilities.

Yet another aspect of *Student Expectations* was the call by the students to be provided with more avenues of interaction so that they could learn from the experience of interacting with others in an online educational environment. There were no specific examples of how these avenues would be laid out as the students chose not to interact in non-private venues. The students did not use the public discussion boards nor the group email functions available to them.

Student
Facilitating Reflection
Posted:11/8/2002 @ 13:46:59

I am pleased to see that I am not the only one who thinks it is a waste of time writing to oneself! That doesn't meant that I don't reflect. I agree that reflection is a very important part of learning and I am forever, thinking, reflecting and jotting down 'dot' points so I don't forget - but I have never been a journal writer.

From what I read of assignment requirements, it may be part of the assessment process -'an edited journal'. Benny- is it necessary to use the journal tool, then edit this or would an edited version of my 'dot' points written up suffice?

5.1.3.3 Student experience

Communication was central to the student experience in this unit. The communication between the tutor and the students was a frustration at times because it was mostly email which was a facet of the factor, *Interaction student / tutor*. Email interaction is asynchronous and delays often occur in this form of communication. The strength of the asynchronous nature of email was also a weakness which needed to be accepted by the students. An example of *Student Expectations* is the student who stated it was "Frustrating that content forced him to send email off to answer one question and then he had to wait for the answer which led to another question immediately after that." He did not enjoy the asynchronous waits for replies from Benny.

The lack of a known response time for asynchronous communication was addressed by the decision to use live chat sessions with a self selected "study buddy." This would partially remove any asynchronous communication, as there was the ability to plan when communication would take place. The two students planned this live chat so the flexibility remained as they could decide amongst themselves when the chat session would take place. He said they "used live chats where they could both see the same screen." This synchronous communication was fruitful as both students could communicate with each other at the same time, without the asynchronous wait. This allowed the students to ask questions which they did not necessarily need the tutor to answer. The interviewed student remarked "this was a quantum leap because they could help each other." It also allowed the students to get nearly immediate feedback from other students who were in similar situations. This reduced the sense of isolation as they would know that they were not alone in thinking something or not understanding something.

A point of frustration for the students was the time commitment required to study in this unit. This was part of the unit which included both *Student Responsibility* and *Student Expectations*. The students said the time required to complete tasks was understated as it regularly took much more time to complete tasks then Benny and unit coordinator intended. The student said he "Laughed at Benny when they heard how long he expected them to take to finish certain tasks." This resulted from a number of issues such as student ability, student familiarity with the content, student

expectations for the quality of the product, tutor expectations, and time management. The interviewed student mentioned that it was an "ego thing to make a good product" and this might have resulted in far more work being invested into tasks then the tutor expected. There were situations where the tutor explained exactly what was required but students chose not to listen to the tutor and did what they felt was appropriate. The student said they often put in more time "to make the product pretty." This taking control of their learning was a positive learning outcome but the added stress and workload from the student expectations took its toll on the students and Benny.

Student
This topic really helped me ...
Posted:7/8/2002 @ 08:23:00

Hi all
You know,...We all try really hard to be independent, self sufficient and grown up, don't we?
In the Online learning environment we are forced to be resilient, self-sufficient and to develop critical thinking, often in isolation.
Here I was, sitting at my desk in ***** (place name), wondering how the hell to interpret the brief for this unit, and how to reconcile the task with **** (unit name) which I am studying concurrently, and quietly going barking mad. There were elements in all the tasks that I could address, but what I really needed was to sort it all out in my head so I had some clear, or at very least clearer idea in my head before I started either barking up the wrong tree or simply barking.
Eventually, I swallowed my pride, admitted defeat and phoned 'Teacher'. The next 15 minutes was enlightening, encouraging and reassurring. Yes, Benny does actually exist. We explored options that fit my own working reality. We discussed alternatives and weighed pros and cons.
This process answered huge numbers of questions for me.
Of course, following reflection on this conversation, I now have several hundred NEW questions to address, but I consider this a great leap forward.
Why do we punish ourselves this way? Am I the only one to subconsciously think that just because we are supposed to do this online, to use the telephone is cheating? OK I am an idiot. I should have done this at least a week earlier, and readily admitted this.
If your brain has also turned to porridge, and someone has extinguished the light at the end of the tunnel, I heartily recommend this strategy.
I'm sure Benny won't mind me giving you his number - (xx) xxxx xxxx xxxx-xxxx [this state] time.
Please consider!
***** (student name)

Even though the interviewed student described himself as a constructivist, he expected Benny to act as an instructivist at times. As an example of *Student Expectations*, Benny was expected to manage the class and distribute knowledge in a role which contradicted the partnership of knowledge construction. For example, it was felt by the student that the online tutors "need to be disciplined with email and troubleshooting by checking email at least three times a day." This was because in the student's view, his time had been wasted because of that there was not enough contact early in the semester. The student did not believe that his lack of participation and decision not to use the interaction opportunities presented to him affected the amount of interaction between the student and Benny. This decision to privately email Benny also potentially strengthened the isolated feelings among the students.

5.1.4 Tutor capabilities

This section involving tutor capabilities is divided into three sections: a description of the actual role Benny played as the tutor, a description of the situations encountered in the unit with a focus on the community interaction and discussion board, and finally a connection of Benny's capabilities to the capabilities and factors presented earlier in this paper.

5.1.4.1 Actual role of the tutor

One of the ways in which Benny explained his role in this unit was to examine the challenges and limitations he was faced with. According to Benny, "A tutor has to fit into the structure of a unit." While this sounds very Fordian and one can imagine a factory of partially assembled Model "A's" being put together by workers who are fitting into the structure of working on an assembly line, Benny's ideas regarding online education and online tutoring are much more evolved than that. Using his *Process Facilitation* capability, Benny had to "facilitate pre-created content" and he stated that he had a "limited role due to the materials provided". Benny said that "tutors do not have the power to change some things" and he definitely wanted more control over any future units he would be involved with.

Benny also had to determine who was leading the online environment through *Tutor Experience*. This eventually led to his redefinition of his initial role as tutor. There was a firm understanding on Benny's part of the role of a social facilitator but the role which the students decided upon was quite different. Benny ended up adapting his role to be more of a focus on his capabilityof *Content Expertise* and answering individual students' questions. This redefinition was explained by Benny to be a "facilitator of the learning experience" rather than a "social facilitator" which is what he had originally envisioned his role to be.

Benny
Facilitating Reflection
Posted:7/8/2002 @ 08:27:11

*****
The journal is a very important part of the learning process and will be a reflection of the individualized learning experience. I am very happy to act as a reflective learning 'buddy' if you believe this will be helpful.
I have access to all journals - although other students do not. It may be wise to use the conference boards to share the learning experience or we could set up a "BLOGGER" (I heard about this facility from **** [unit coordinator] yesterday. A BLOGGER is a private discussion board where students can meet to discuss and share ideas - a fantastic facility for group work). The BLOGGER URL is http://www.blogger.com/
Benny

Benny was required to use his *Process Facilitation* capabilites in a learner-centred way, as this was how the unit was structured. This included getting the students to engage with the content of the unit because "just because the structure is there doesn't mean will engage with the process." The role of facilitator of the learning experience included a number of other adjustments. These included creating strategies to get students to take part in the learning, motivating the students, and changing student behaviour and outcomes based on their interactions with the unit materials.

As an aspect of *Interaction student / tutor,* Benny said the students left him "out of the loop by replying to each other by email and not using the discussion board only emailing him when they needed direct help from him." This caused an unforeseen concern for Benny regarding his *Evaluation* capabilities. He was experienced enough as an educator to be aware that "the lack of obvious success indicators does not mean learning is not taking place." He was put in the position of having to ask the students if they were doing things in terms of certain success indicators. Initially, this was uncomfortable for Benny but eventually he adapted and accepted it as a standard operating procedure in this environment. Given a different class with more or different students, Benny felt this might have been fraught with danger as the students could be less forthcoming with the truth. A facet of *Interaction student / tutor* was that it was only after Benny got to know each of his students on a personal level that he become more comfortable with this situation.

The concept of tutor adaptability seemed to encompass Benny and the role he fulfilled as an online tutor using his *Process Facilitation* capabilities. The largest adaptation Benny made was the change from a "social facilitator" to a "facilitator of the learning experience." Benny adapted in other ways but they were not as different fundamentally from Benny's original position.

Benny
This topic really helped me ...
Posted:7/8/2002 @ 08:31:53

Hi *****,
Thanks for the comment - I enjoyed yesterday's conversation.
To other students - please feel free to call anytime (during office hours). Lets make use of all the available technology to support our learning.
Benny

Benny ended up using his *Technical Knowledge* capabilities as he acted as technology expert during the course of the unit. The technical support included "new Information Technology staff that did not yet have a relationship with the unit." This led to misunderstandings about what needed to be done with the unit. Therefore Benny found himself providing technical advice and expertise to the students.

The way Benny changed his initial role and chose to deal with each student and individualized instruction through the factor *Interaction student / tutor,* showed his appreciation of the students as individual learners in unique situations. Benny mentioned that while he adjusted his approach to tutoring this online unit it was still seen as successful to both himself and to the students. He mentioned that if there had been many more students in the unit, he would have been unable to commit that much individualized time to each student.

Benny
Getting started
Posted:2/8/2002 @ 09:38:19

Hi ***** and *****,

Wonderful to hear from you. I have just realized that I have been relying on technology a little too much. I have been accessing the conference boards and on seeing no new messages in the opening window, leaving without actually entering the individual conference boards where there are indeed new messages.

I think we all feel a little nervous about learning with a new group of people. Not wanting to the be the first to post, being worried about our own knowledge base compared to other students all tend to hold us back in the early days - a perfectly natural situation. Perhaps we can lessen the anxiety a little by setting some simple ground rules. I'd like to suggest that we all agree to acknowledge each others expertise and work to enhance the learning experience for all group members. Any other suggestions?

I too am very interested in the learning process and what motivates students to take responsibility for their own learning. I have a particular interest in collaborative learning and the formation of learning communities (hence, my focus on encouraging group members to work together). I believe that we can learn a lot through engaging in self reflection - for example, what is it that motivated you to make posts and in so doing initiate a learning opportunity?

Perhaps the answer to this question will provide insight into other learners and how we as instructors can encourage them to engage in the learning experience.
What are your thoughts?

Benny

5.1.4.2 Situations encountered

The main situation Benny encountered was adapting his role to grapple with the factor *Student Expectations*. This decision to change his role is illustrative of his inability to change an existing unit. Benny expressed the opinion that in the future, he "wants more control of the design and content of the learning environment." The students' wishes were particularly important as they had more experience with this online learning environment and the design of this unit than Benny did. The students already had processes in place to help them achieve success and they were determined not to change their previously successful processes regardless of what Benny did to institute change. Once Benny decided to adapt his role to better coincide with what the students expected, the level of the dissonance in the unit diminished a great deal, as both Benny and the interviewed student mentioned.

The unit coordinator stated that "the reduction of dissonance involved the removal of uncertainty in the unit." The students knew what they wanted and had previously

experienced success with their systems in the past. When Benny attempted to initiate change in the structure of the unit, he added uncertainty also. Benny's unit coordinator wanted "as little uncertainty as possible in the unit." Benny's decision to remove the uncertainty his actions were inadvertently causing to the unit was in response to his thought were in a similar vein to the unit coordinator's thoughts.

5.1.4.2.1 Community interaction

Benny stated in a "public mode, community interaction was minimal." There was not a mandated amount of interaction which students were obligated to undertake as the factors *Design / Pedagogy* and *Community* needed to be dealt with. There was no minimum amount of public postings to a discussion board or the like which reflected in any sort of participation mark. Therefore, the students could be a support and discussion group for each other but it was their individual decision. Therefore, some students made an effort to interact and some students decided to not interact except on a minimal polite level.

In private, the *Interaction student / tutor* factor was in evidence as there was a great deal more interaction according to Benny and the interviewed student. They both mentioned a large amount of email, electronic chat sessions and telephone calls taking place. This interaction was done on a one-to-one basis, normally between Benny and a single student. There was no attempt on the students part to transfer this level of interaction to the public discussion boards.

5.1.4.2.2 Use of the discussion board

The discussion board was used a great deal less than Benny desired. The discussion boards were used to introduce people or to post discussions questions. A typical posting by Benny's students looked like this:

Student
Getting started
Posted:8/8/2002 @ 09:48:57

For me the allocation of marks would be a powerful incentive for participation. Whether I ended up thinking my participation was worthwhile would depend on the quality of discussion -
were different points of view presented?
was I challenged to reconsider my ideas?
was the level of enthusiasm /commitment to the discussion by others appropriate
adequate frequency of posts to keep momentum
did the facilitator prompt deeper or more relevant discussion?
were the topics of immediate relevance / benefit to me?
did I feel any connection with other participants?

If these elements were present then it might have been the marks that got me started but I am more likely to increase my participation.

I think a combination of external and internal motivators is needed (different balance of these for everyone). I don't see a problem using external drivers to expose people to situations where they may then generate and internal drive.

PS my participation level in this discussion may be higher than usual because a) I am very interested in the topic but b) the practical reality is I have time now that I know I won't have later on due to my work schedule. So you can't underestimate the strength of dealing with practical realities as a motivator.

Student
Getting started
Posted:1/8/2002 @ 14:01:20
I guess the reluctance to be the first contributor to a topic is not surprising - whilst online doesn't require the same "suck your breath in start" feeling as face to face, there are still the underlying thoughts to banish. Things like what expertise / experience have I got to offer that others will be interested in? When you don't know the audience it is easy to feel like you are the most inexperienced (perhaps that's just my personality and others start off thinking they are the expert?)
Anyway here are some areas I have an interest in and some I find challenging. Instructional design is fascinating and my experience as a trainer gives me some useful background to build on and apply in online settings. Understanding and recalling technical information is not my forte - a necessary evil, so lots of room for development here.
What areas do others feel are their strenghs / weaknesses / interests / challenges?

Students used the discussion board to introduce themselves at the beginning of the semester. The messages were typical of introductory messages found throughout the literature. An example of a student introductory posting in this unit looks like this:

Student
Welcome
Posted:1/8/2002 @ 13:44:33

Hi to *****, Benny and everyone else,

I live in **** (place name), have two teenage children and an ultr-distance triathlete husband so Triathlon rules in our house.

I work in the VET sector with an association representing Group Training Companies who employ apprentices and trainees. This year I am part of ANTA's Flexible Learning Leaders professional development programme so it's been great attending a few conferences and exchanging ideas.

My current project (on top of my usual responsibilities) is **** (job). Eventhough the trainees receive training through a Registered Training Organisation I am interested in providing an environment where they can reflect on their learning and have opportunities to interact with their peers.

So Benny I will be very interested in your research. I am looking forward to working with everyone.

There were a few postings on the discussion boards of a technical nature. There were minimal technical challenges in this unit, but they did occur. An example of a technical problem is:

Student
Multiple Posts
Posted:6/8/2002 @ 13:27:50
Sorry for the duplicated messages - not sure why this is happening - any suggestions?

Benny
Multiple Posts
Posted:7/8/2002 @ 08:13:25
Hi *****,
Don't worry about the duplicate post.
I have no idea why the system is duplicating posts - just one of those strange technical happenings I suppose.

The majority of student postings on the public discussion board were discussion questions. These questions were for the students and Benny to discuss. Some questions were posted to seek clarification from Benny. An example of this is:

Student
Facilitating Reflection
Posted:13/8/2002 @ 17:43:29
***** Darling....
For once I have to disagree with you!
I am really enjoying writing to myself!!
It really works for me, because I don't have to reply to anyone, or to justify what I am writing! I find it really cathartic, and have written several pages. I leave notes for myself and reply to them when I have founfd the answer I was looking for.
Why am I doing all this? Well, I am strongly motivated by the fact that it is part of the assessment for the unit, which has had the effect of taking the brakes off so to speak. I was inhibited last semester to follow this path, because the diary entries weren't assessed. They were felt to be "good for the soul" by the lack of assessment, feedback or even indication that they had even been read reduced the authenticity and value for me.
Last semester I really got into the discussion boards, but am frustrated this semester because I feel completely different about them - I find the discussion board distracting and want to get back to writing in my diary! Crazy isn't it? (I cant remember if this is intrinsic or extrinsic motivation) I feel sorry for Benny because he has to read it all! The effort I am putting into the entries has added to the validity, because I can see progress emerging in the lenthening audit trail I leave behind me.

The big question is would a student put in the hard yards if it wasn't assessed and rewarded (at least by being read!) Like ***** I would like feedback along the way.
Is this just a simple need for nourishment? Do I just need validation of the effort I have put in? Probably.
I hate the idea of finding out it was all crap in week 14!
What do you others think?
Cheers,
***** (student name)

5.1.4.3 Connection to capabilities and factors

Throughout this unit, Benny employed a range of capabilities and dealing with factors. Due to the learning environment Benny was involved with, there was a focus on several capabilities and several factors which affect those capabilities. The capabilities required of Benny as well as the factors affecting them are presented in this section.

The main capabilities Benny required were sub-capabilities within the capabilities "Evaluation", "Process Facilitation" and "Technical Knowledge". "Process Facilitation – Communication" was the key sub-capability for Benny. Benny's focus throughout the unit was on the communication between himself and the students. He successfully adjusted his manner of interaction with the students from what he was most comfortable with to what they wanted. "Process Facilitation – Values" was another key sub-capability for Benny. He showed a respect for the beliefs for the students when he modified his actions to better support their learning. He also respected their privacy when he did not force the students to interact in a more public

manner than they were comfortable with. "Evaluation- Monitoring" was evident sub-capability for Benny. He ensured students were meeting the required standards. He also monitored the progress through the unit materials and gave reminders to the students about deadlines. The final key sub-capability for Benny was "Technical Knowledge – Technical Pedagogy." Benny demonstrated this when he attempted to induct students into a community of knowledge production and research. He also showed his knowledge of the possibilities and limitations of the available applications used in this unit.

Benny was affected by a number of factors in his role of tutor. The state of the learning community in Benny's unit set the tone for the semester. He viewed his inability to get the students to interact publicly negatively even after he had success with interacting with the students individually. The lack of an online learning community caused tensions which is reflected throughout the other main factors which affected Benny. The student expectations of individualized attention from Benny was another aspect of the state of the learning community. This was also tied into the interaction between the students and the tutor both in the beginning of the unit and after Benny adapted his role to suit the students expectations. Benny's personality allowed him to adapt to the students wishes regardless of what his expectations were of the learning community. He did not like the decision initially but he chose to learn from the experience and found positives which he planned to use the next time he taught online.

5.1.5 Summary of Benny

In summary, Benny tutored a postgraduate unit which had been offered online previously. He was an experienced tutor while also being an expert in the content of the unit. During the semester, Benny mainly demonstrated the following sub-capabilities: "Process Facilitation – Communication," "Process Facilitation – Values," "Evaluation- Monitoring" and "Technical Knowledge – Technical Pedagogy." The factors which arose during the unit which affected his capabilities included Community, Student expectations, Interaction between the students and the tutor, Tutor personality and Tutor experience.

5.2 Case Study #2: William's unit

This case study will present four aspects of how William's unit proceeded. An overview of the unit will be presented first. An overview of the tutor, William, is presented next followed by an overview of the students in the unit. Finally, a presentation of the tutor capabilities in this unit completes this section.

5.2.1 Unit Overview

The overview of the online unit is presented in three sub-sections. First, a description of the unit is presented. Then the design of the unit followed by the notional role of the tutor in this unit. This leads to the next section of the case study which is the overview of the tutor in this unit.

5.2.1.1 Description of the unit

The unit which William tutored was a multileveled undergraduate unit at both the second and fourth years. Therefore all students had previously completed some university education. William's online unit was one of the units which were available within the Harambee educational environment. (The description of the Harambee educational environment was presented in the data collection method section 3.3.3.4 Harambee). This unit was fully online and students could use it as credit towards obtaining an undergraduate degree. The content of the unit had a technological aspect to it as the students were learning how to use technology in their given field of study. This was not a unit which focussed solely on technological expertise.

According to the unit coordinator, the unit was based on constructivist principles of teaching and learning. Materials and resources were presented for students to interact with in order for students to construct knowledge for themselves with minimal assistance from the tutor of the unit. William's unit has been offered

externally by the university as part of a program of studies for a number of years and had undergone a rigorous school based revision process recently. The revision process found that there were very few revisions required to be implemented in the unit from what was used in the previous semester. The unit coordinator clearly stated that the content was only part of the unit, as the unit was "Designed with mixed demographics so people can draw on experience of more experienced students." On the Technology Generations in Distance Education and Open Learning scale (based on Oliver and Grant, 1994, p. 1), this unit had a high level of learner independence and a low level of instructor and learner interactivity, and would fit between a correspondence unit and a computer managed instruction unit.

The factors *Student Responsibility* and *Design / Pedagogy* were evident from the unit coordinator's impressions of the unit. The students were required to complete all learning tasks in the unit to aid in their understanding of the content area and to improve their skill levels with the use of technology in their field of studies. The unit was designed on the premise that the students were responsible for their own learning and that they needed to engage with the material in order to achieve success in the unit. The students were able to interact with the content materials in a number of ways including; text based instruction, electronic readings, static electronic lectures in PowerPoint and using principles, individual workshops and practices from the unit in professional practicums which took place during the semester. Students were required to interact with instructional materials in the environment provided through the Harambee courseware to complete assignments which demonstrated their competence in the content of the unit. Accordingly, the *Community* factor was in evidence in the unit as it was not built around a community of learners but it was built around the content of the unit. This design conflicted with the unit coordinator's description of constructivist principles. The unit coordinator remarked "Communication skills and subject competencies are the two principal things." Therefore it was intended to have students with improved skills in both technology usage and content knowledge in their future workplace.

There was no face to face instructional or workshop time allocated in the schedules for this unit. Instead of a traditional lecture, there was a unit guide which introduced the main points usually associated with face to face lectures. The activities for

students to complete were designed to replace the learning opportunities which normally occur in tutorials. The discussion board was used to replace the question and answer sessions and social interactions which occur in classrooms and outside of class.

This unit had originally been a print-based external unit at the university and over the years had gradually included more and more online aspects. Therefore, as part of the *Institutional Milieu*, all of the external delivery procedures and bureaucracy of the university were in place to support the stakeholders involved with the unit. The university's flexible delivery organization had a great deal of contact with the unit as every assignment submitted had to be sent to the Flexible Delivery Centre. The formal feedback mechanisms from the university applied as quality assurance was measured through a variety of formal and informal ways, including students completing feedback surveys, examining the quality of student work and monitoring the satisfaction levels of student postings on the discussion boards and online forums. However, other than the formal feedback systems regarding quality assurance, there was no formal system in place for the evaluation of online tutors as this university did not have any assessment in place to assess online tutors. The formal review of teaching questionnaire was not designed with distance students in mind and it did not take into account the problems which online students or tutors encounter. According to the unit coordinator, regardless of the deficits of the quality teaching review instrument "sometimes you just have to run with what you have."

As this was not the first time this unit was offered in an online environment, there were minimal institutional and bureaucratic issues which arose. The Harambee site contained links to a great deal of material which the tutor and unit coordinator maintained so that the links were not broken for any amount of time, if at all. To clarify for the students, the unit coordinator wrote a guide to explain what was core material and what was enrichment material as this had been an issue of consternation in previous semesters.

A CD-ROM containing all the initial unit materials was posted to the students well before the semester started. The CD-ROM of material limited some of the potential flexibility that the online environment provided. The CD-ROM was burned before

the start of the semester and therefore could not duplicate any later material which could have been added to the unit. The material on the CD-ROM was designed to act as a text book for the unit which contained all the material for the unit that was available on the Harambee site and students were led through the unit by the text. This replaced the former paper based text which earlier external incarnations of this unit used to provide for the students. The positive side of restricting the flexibility of the unit by burning a CD-ROM is that all students had access to the material posted at the beginning of the semester and they only had to use the Internet to get supplemental material added after the start of the semester. This reduced the potential for student access problems as it was explained that all Internet access is not equal and reduction in student frustration was a priority in this unit. Throughout the semester, there were no posts on the discussion board which mentioned any problems accessing any information from the CD-ROM.

The *Technical Milieu* and *Content Milieu* included such challenges as when the servers went down and obtaining access to web-based material. A minor frustration point which occurred during the semester was access to an outside content facility called EduLattice. Within Harambee, there was a gateway to external commercial content from a company called EduLattice. This online content was sometimes used as optional enrichment material which students in the second year cohort could sometimes access if they wanted or they could use alternate text based material. There were occasions when the use of EduLattice material was mandated. The fourth year cohort had EduLattice use mandated but this was accomplished with a few access problems. Both the second and fourth year cohorts of students were guided to alternate resources on occasion to complete the assignments in addition to the text based and EduLattice resources. Using EduLattice was an attempt by the school to use pre-existing content without having to create material which covered the same content. The content on EduLattice was mostly technical and dealt with how to interact with the computer and certain pieces of software. The theoretical implementation of technology which was the focus of the unit did not require access to the EduLattice materials. There were few postings about students being unable to access the EduLattice materials and there were some concerns regarding how EduLattice was working after the students accessed the material. There were online evaluations within EduLattice which occasionally did not retain the scores which

students achieved, however this was minor and was not any major cause for concern among the stakeholders for the unit.

EduLattice HTML problems
Posted by ***** on Sat, 17 Aug 2002, at 5:27 p.m.

I've had this problem consistently from day 1:
On completion of each unit I do the post assessment, and I then start with the next unit, before clicking "exit" and informing EduLattice that I haven't finished with the unit. Every time I get back to EduLattice after that, it starts in the last section of the previous unit. Very annoying as it doesn't remember the assessment scores, and it appears as if you haven't done half the unit.
Is anyone else having these problems?
Cheers,
***** (student name)

5.2.1.2 Unit Design

A symptom of the *Design / Pedagogy* factor involved how the unit was designed along the lines of a traditional correspondence unit where students worked on their assignments individually. The factor of *Facilitation of Learning* included having tutors provide assistance when asked as they did not have an active instructional role. This individuality of students resulted in the manifestation of the factor, *Community*, as there was little concerted attempt to create an online learning community, even though getting students to communicate electronically was one of the informal goals of the unit. The unit coordinator "encouraged students to use general discussion board to promote 'coffee shop' community conversation."

The *Design / Pedagogy* factor persisted as the unit was designed with both flexible and inflexible assessment, namely workshops and assignments. The unit was designed with workshops so that all students could demonstrate a level of competence on a given task. This allowed students some flexibility for how they accomplished the tasks required within each workshop. The assignments in the unit were not flexible and students had little choice for what they could do for each assignment.

There was a modicum of flexibility regarding the software used in the unit. There was a list of recommended software but no required software applications which gave the students the opportunity to work with a variety of applications which could complete the same task. For example, FrontPage 2002 (MicroSoft, 2003b) was a

recommended application but there were a number of other applications which students could chose from based on availability, cost and other factors. In fact, there was a link in the unit materials to a freeware and shareware website, www.tucows.com. This flexibility was financially convenient for participants but on a practical level it was not a timesaver as there was not anyone associated with the unit who knew how to use non-recommended software. The tutor was known to have a level of expertise with the recommended software applications.

5.2.1.3 Notional role of the tutor

The notional role of the tutor was determined by the design of the unit and the beliefs of the unit coordinator. The notional role of the tutor had a number of environmental factors acting upon it, including *Subject Epistemology, Student Responsibility, Interaction student / tutor* and *Management of Teaching Processes.* There were a number of aspects to the role of the tutor which emerged throughout the interviews. This included a need for online tutors to have a supportive role and connect with students on a personal level and encourage them rather than just view them as students who require feedback. The unit coordinator said "Good tutors have high level of communication skills, not necessarily articulate but supportive." The management of the learning environment was critical in this situation as online tutors were seen to need good communication skills. According to William, there was also "being able to deal with students and determining who is trying to get out of doing work and who is having a legitimate problem."

According to the unit coordinator, the tutor was also expected to be "the person responsible for the students' completion of the units' learning outcomes." There was also the mandate to empower students to take responsibility for their own learning. Included in this was a professional competence in the subject area to explain things satisfactorily for the students and answer questions appropriately. A sufficient pedagogical knowledge regarding assessment and being able to defend their decision are other expectations of the role the tutor was expected to play.

Further, the tutors' role was to act in an appropriate professional manner in all aspects of the online unit, including when dealing with the students, the unit

coordinator and the institution. This role modelling was expected to provide the students with some apprenticeship opportunities for what was acceptable behaviour in an online educational situation. According to William, part of this effective role modelling involved "providing feedback to the students which was both timely as well as useful."

5.2.2 Tutor overview

The overview of the tutor, William, will be presented in three facets. A description of the tutor will be presented first. A presentation of the beliefs held by William is presented next. Finally, an account of William's personality completes this section.

5.2.2.1 Description of the tutor

Any description of William as a tutor needs to consider that he was handpicked by the unit coordinator, he did not have formal training as an educator, and he did not have experience tutoring this unit previously. William did exhibit expertise in the content area of his unit and one of the reasons William was chosen to tutor this unit was for his knowledge in this area. This was William's first experience with online education in any form, though he had been an external student previously. He viewed the design of this unit to be very similar to what he experienced when he was a student. William was a non-teaching professional at the university and tutoring was not in his career path.

There were a number of reasons why William chose to tutor this unit. He felt he could teach this content regardless of the technology used to deliver the unit. There was a desire on William's part for experience working in an online education environment. William was available to tutor the unit and the unit needed to have a tutor for this semester. Another determinant for William was the opportunity to help new students in the field and share some of his industry experience, enthusiasm and expertise with others. William stressed the financial renumeration which was being offered to do the tutoring to be a prime motivating factor. William also viewed this as an opportunity to be stimulated by student learning and he used the tutoring as a way to keep up to date with the content. The challenge and the enjoyment William

received from the unit was obvious during the interview and he mentioned that it kept him going when other aspects of his job were less than stimulating. The final reason William mentioned that he decided to tutor was that the unit coordinator personally asked and he stated that he had a positive professional relationship with the coordinator.

5.2.2.2 Tutor beliefs

William had a number of beliefs about online learning and education in general. William used his positive experiences from his observations as an external student to form the framework for how he acted in his role as a tutor. As a demonstration of the factor, *Tutor Personality,* William said that being a student at a distance is more of a challenge than face-to-face studies. He wanted to share his positive learning experience with his students so that they would enjoy learning the content area as much as he did. William found the experience of tutoring online to be fulfilling and that he enjoyed conversing with the students and watching them succeed in the unit. This challenge brought out the innovative, creative and adaptable parts of people to better ensure success in their educational endeavours.

William believed that *Tutor Personality* was important as he mentioned personality and character a number of times during the interview. He talked about tutors' ability to project this character in an online environment. This projection encompassed a way to inspire and motivate students who are online and to impart some enthusiasm into them for the experience for studying this subject area in an online fashion. William also listed a number of descriptors for what the tutor should do which integrated the factors *Management of Teaching Processes, Interaction student / tutor,*and *Facilitation of Learning*. These descriptors included: being a good communicator and listener in spite of the medium, being persistent, friendly, approachable a fair marker and being in touch with reality. According to William, an online tutor needs to have the "best interests of students at heart." They also need "to care about the students as people, not just students in his class."

William had strong opinions regarding what was expected of him as an online tutor. "To be a teacher online but not just a voice at the end of the phone or letters on a computer screen." There was also the monitoring of student work and to "make sure they are not just putting words on a page." Simply putting words on a page was discouraged by William in this unit.

William explained that online education should be just like traditional education, just online. He stated that nothing else needed to be different. William believed that online tutors did everything that face to face tutors did plus they were more available for individual interaction. William expressed frustration with *Interaction student / tutor* and *Community* as students would not initiate communication with him, even after he asked for contact. He felt that students and tutors both need to get used to the utilization of technology in education with a specific focus on the online education culture. The underlying premise for William's beliefs regarding online education is that communication is the key to success.

Other beliefs William held included motivation of students and content expertise which touched upon the capabilities *Content Expertise* and *Process Facilitation.* The motivation online students require was something which William was prepared for before the unit started and was more firmly convinced about its importance after the unit ended. William also stressed the importance of having knowledge in both the content and the educational outcomes of the unit.

5.2.2.3 Tutor personality

After the examination of the discussion board and interviews, William appeared to be very hardworking and enthusiastic in his role as tutor. This was important to the unit coordinator because of the large workload associated with tutoring online. William found the unit's workload to be very demanding and exhausting at times, but ultimately worthwhile because of all the positives. These positives include interacting with the students, sharing his expertise with others, engaging with the content of the unit, improving his online communication skills and stimulating his excitement for the area.

William mentioned that he used his outgoing nature in a positive way regarding *Interaction student / tutor* as he felt he was skilful at projecting his character to students without being in the same room as they were. He was adept at being persistent, friendly and approachable while also being realistic about how things operate in a university setting. As part of his nature, William was also required by the situation of the unit to be very organized with his dealings with the other stakeholders which is indicative of *Process Facilitation*. An example of this is keeping his word when he promised something to the students, such as his promise to reply to email within twenty four hours. William proved that he was a good communicator despite the medium which sometimes strained his patience and his listening skills.

William created strong personal relationships with the students according to both the unit coordinator and himself. They both also stated that William was supportive of the students while maintaining a professional demeanour and held the students to high standards of achievement. William had excellent communication skills which were evident throughout the interview and could be observed in the public areas of the unit. His responses to student inquiries were timely and more than would be expected by someone with a heavy workload. An example of this is the marking of student assignments which were prompt despite the processing of assignments by the Flexible Delivery Centre slowing this process down.

5.2.3 Student overview

The overview of the students in William's unit will be presented in three facets. A description of the students will be presented first, followed by a presentation of the behaviours of the students and finally, an account of the experiences of students.

5.2.3.1 Description of the students

This unit was the only unit where there were no students available to interview during the span of the data collection phase of this study. There was a student willing to be interviewed after the data collection phase had ended but ethics

procedures removed any possibility of extending the data collection phase of the study.

This cohort of students was typical of the enrolment in this unit over the last few years. Students in William's unit were either enrolled in a graduate diploma or a certificate. The graduate diploma students had to have a previous university degree. They ranged from a mix of full and part time students; to working in the field, working out of the field and unemployed; with a range of experience in the workforce to a wide variety of geographic locations. One of the few demographic constants was that the majority of the students were females. Another demographic constant was that the students were all seeking some sort of formal qualification. However the demographic variety informed the design of this unit as it was partially set up to allow less experienced students to learn from the experiences of more experienced students. There were also a variety of *Student Expectations* for outcomes in this unit.

Saying hello
Posted by ***** on Tues, 23 July 2002, at 5:13 p.m.

This is the 2nd time I have written to this BB, so I hope this one gets posted.
I am very much looking forward to this unit as I know I will be able to apply it immediately to what I am currently doing in my job as a ***** in a state government department.
See you guys later.

5.2.3.2 Student behaviours

The students made a number of choices regarding how they were going to proceed throughout this unit which was typical of the *Student Expectations* factor. Chief amongst these decisions was the usage of the telephone rather than any of the electronic options available to them. This decision limited the potential interaction the students could have with each other and demonstrated the factor, *Community*. The students mostly chose to talk privately with William rather than share their interactions in a public forum such as the unit discussion board. The absence of access to email addresses exacerbated this situation as there was no procedure in place for students to email each other without publicly posting their own email address.

Another decision which the students made was to not come to campus to interact with other students face to face. For the students who lived at a distance, this was a practical matter. The local students also chose not to come to campus to converse with William and since a car trip or public transit ride to campus is fairly inexpensive, there must have been other reasons for this decision, such as motivation or need.

Both of the choices listed above seemed to show an individualism pertaining to *Community* and *Interaction student / tutor* whereby students chose to go it alone without a community of learning consisting of other students. The students did not seem to believe that it was appropriate for them to contact the tutor as William noted several times that he asked students to contact him and they often did not. William noted that this refusal of students to contact him was his main frustration in the unit.

5.2.3.3 Student experiences

According to William and the examination of the discussion board, the students seemed to be firmly aware of the typical role of students in external units. However, they seemed hesitant to change that role to take advantage of possibilities available in an online unit. This refusal to change roles included limiting the opportunity to interact with others involved with the unit. The individualism was apparent throughout the unit and with the interviews with the online tutor and unit coordinator.

This student individualism was in spite of the fact that the unit coordinator designed the unit to focus on the communication between the stakeholders in the unit. As a result of this limited amount of communication William believed that the students were at somewhat of a disadvantage in dealing with the *Institutional Milieu* such as the University processes like requesting an extension, who to delivery sick notes to, and the like. William's unit coordinator supported that belief when she said "Students don't have enough info right now about institutional things."

William felt that the students had to make a number of adjustments in order to succeed in this unit indicative of *Student Responsibility*. This included acting more as a researcher than a traditional student and changing their mindset away from the tutor as headmaster. This was evident, as it seemed to be at the root of the belief that students were "bugging" the tutor whenever they contacted him. Another adjustment regarded the notion of an appropriate quality of work in tertiary studies, as some students seemed scared by their lack of knowledge in the field signifying *Student Expectations*. For example, William felt the need to speak to a male student regarding his intellectually intimidating posts on the discussion board. However, this did not ease the concerns of the other students and may have led to the virtual abandonment of the discussion boards.

The online nature of the unit caused students to come to grips with *Technical Milieu* and *Student Expectations*. The students had to grapple with the notion of being an online student rather than an external student. There were levels of frustration which needed to be understood, not the least of which was the switch from paper-based materials to electronic materials. Many students told William that they were having difficulty reading materials from the computer screen but were hesitant to print the documents off because they were online students. There was also the attempt on the students' part to understand the *Institutional Milieu* with questions such as why the university was putting this unit online. The added costs to students were seen as a prime motivating reason for the switch to offering this unit online. Some students posted messages implying that they did not feel they should have to print their own materials and that the university should send them paper-based materials like they did in external units. William explained that he told students that the university did not offer this unit online just to save money or to "download costs onto the students." William also told students they were getting their money's worth as this unit was less expensive than the external units he took when he completed his degree.

5.2.4 Tutor capabilities

This section is divided into three sections: a description of the actual role William played as the tutor, a description of the situations encountered in the unit with a focus

on the community interaction and discussion board, and finally a connection of William's capabilities to the capabilities and factors presented earlier in this report.

5.2.4.1 Actual role of the tutor

William's role was much more individual and less in control than he expected before he started tutoring this unit which tested his *Process Facilitation* capability more than he had originally expected. Not having direct access to student contact details made William's goal of motivating and inspiring the students more frustrating than he originally anticipated. William was driven to make sure he was "there for the students" and spent a great deal of time on the telephone making sure he was there for each of them individually. "Being there for them" included a great deal of individual interaction with students using a variety of methods like telephones, faxes, discussion boards and the postal service. These interactions usually occurred at a time of the students' choosing and this had the potential to be quite disruptive to William's other employment. William enjoyed the distraction as he found it to be "mentally stimulating" and he enjoyed the learning which went along with that.

The *Course Management* capabilities required in the unit included marking assignments and responding to inquiries about the content and the institution were tasks which William was successful at according to the unit coordinator. He had knowledge about online education, university procedures and content knowledge to successfully answer the students questions. William used the public discussion board whenever possible but when the students chose to not use it, he respected their decision and adapted his interaction with them accordingly.

William treated his role as online tutor as if it was a 'normal' tutoring position except it was in an online delivery of content by monitoring and supporting the students to the best of his ability. His *Process Facilitation* capabilities were demonstrated by making sure they were doing their readings and research while learning how to successfully complete assignments without being "spoonfed".

5.2.4.2 Situations encountered

William did not try to modify the manner or underlying framework of how the unit was tutored. He did not experience any major difficulties caused by his actions. He did express the thought that was held by all online tutors involved with this study, that he would have been better prepared to tutor this unit if he had more experience in online education. William did use his abilities to address problems which came up which were not caused by him but that students attributed to him as the expert, such as design and institutional issues. As an example of the factors, *Student Expectations* and *Interaction student / tutor,* several students saw William as the university proxy for all matters pertaining to the unit and wanted justification for why the university was offering the unit online rather than externally. William successfully offered one explanation that the students accepted which was that the quality potentially improved in this unit because the students had more control over how they interacted with the unit materials.

Through communication, *Interaction student / tutor* was a theme throughout William's interview. During the interview, William was confident that he had learned a great deal about how to interact electronically in the unit. He was also looking forward to handling anything which might arise in this online setting next time. William would have liked a more proactive role in the individual communication of the unit. He also stated that he did not feel successful dealing with the students who were reluctant to contact him. This linked to William's comments on the importance of communication in this unit and the possibilities the technology extended for fostering a stronger learning community than was created in this unit.

5.2.4.2.1 Community interaction

The main frustration William experienced in tutoring this online unit was in regard to the *Community* factor, with his attempt to create an online learning community. This frustration was caused by his inability to contact the students directly as a result of university procedures that meant he had to rely on indirect methods to communicate with them. These methods included posting to the public discussion boards to get messages to individual people, posting mail or telephoning them. Telephoning students all over Australia and abroad had drawbacks such as being prohibitively

expensive and inconvenient based on what time of the day he was attempting to call. Williams' email address was listed on the unit materials so that students could initiate email contact with him but most students chose to send private queries and assignments to the FDC who passed them along to William. This indirect interaction was not the same as forwarding the messages so William did not receive the students' addresses, just their question of their assignments. William sent the students' assignments back to the FDC to have them posted back to the students. The existing *Institutional Milieu* which had all contact through the third party did not aid the creation of a learning community.

The limitations placed on the student to student interaction was seen in the procedures set up by the FDC had its origins in the delivery of correspondence courses which were individualized educational environments was an aspect of the *Institutional Milieu*. The submission of all assignments and written communication through the FDC was excellent for the tracking of assignments and monitoring the amount of time it took the tutor to mark assignments. These procedures were not designed for the promotion of community interaction. It is questionable as to how successful the secondary objective of the unit was, namely the aim of having students learn to improve their skills in communicating electronically since most students chose to use the telephone rather than electronic communication.

The asynchronous communications such as the discussion board were used effectively in this unit according to the unit coordinator. This was not William's perception as he wanted even more communication and more relationships with the students as individuals. The online nature of the communication was more individualized than a face to face unit and the stakeholders had different views on the relationships. *Student Expectations* were evident as the students seemed to see the relationship between themselves and William as one to one and William saw the relationships as one to many. Since most students chose to use the telephone to communicate with the tutor, rather than the discussion board or email, there was limited opportunity to communicate to the whole class. This facet of the factor, *Interaction student / tutor* caused William to interact with the students more on an individual basis than he had originally planned to act.

This individual interaction was a large time commitment for William as students entered into interactions expecting conversations and friendship. William received at least one telephone call a day from students who chose to talk privately rather then type a message. According to William, the level of personal interaction between himself and the students in this unit far exceeded what he experienced while he was a tertiary student. There were opportunities for William to get to know the students which would not have been possible in a face to face class because of the nature of the limits on the time which students and tutors interact in both environments. The individual interaction between the students and William become more prevalent after the first assignment. The students drastically reduced their use of the public discussion boards and thereby chose to forgo social electronic interaction with each other. The lack of student to student interaction caused the students to rely more heavily on William than would be expected in a face to face class.

5.2.4.2.2 Public discussion board usage

Throughout the semester, the discussion board was used for a variety of purposes but usually it was used by the students to introduce themselves or to post a question for William or the unit coordinator to answer. A typical posting by a student looked like this:

Re: XML and W3Schools.com *IMPORTANT*
Posted by ***** on Thurs, 22 Aug 2002, at 11:51 a.m., in response to XML and W3Schools.com *IMPORTANT*, posted by *****, Unit Co-author on Wed, 31 July 2002, at 9:21 a.m.

***** (unit co-author)
I have not got access to EduLattice sorted out. I have spent so much time on it and have decided to stop. I feel I am behind and would like to meet up to talk face to face. I have been trying to contact ***** (unit coordinator) with no luck.
PS. I have been doing the W3Schools tutorials. Please contact me. <***** @*****.net.au> Thank you

The questions the students asked on the discussion board were mainly about the assignments and software applications. During one threaded discussion, a student made an inappropriate comment which William dealt with. He decided to remove the comment and then discuss the matter privately with the posting student. As this situation did not reoccur, William judged that he acted appropriately and effectively.

Another threaded discussion had one student using very complicated "high-sounding" language which intimidated other students who did not want to appear less capable in public.

xml compliant html
Posted by ***** on Sat, 10 Aug 2002, at 11:30 a.m.

must our HTML-assignment delivery be XML compliant?
i.e. lowercase tags, /> tags for empty elements etc.
I will be using Adobe GoLive 6 for the assignments (that is if my purchase order is actually processed! I've had the software on order for 3 weeks now) and noticed this generates. <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"> And doesnt add the /> for empty elements.
Must this be amended? prior to delivering our HTML assignment?

This language usage persisted for several posts and was seen as a cause for the drastic reduction in the use of the discussion board. The tutor described the language usage as ridiculous since the comments were no more informed than any other comments, but they looked more impressive to the students who did not know any better. William decided to have a private conversation with the student and ask that the language be toned down to allow more students to feel more welcome when contributing to the discussion. The student complied but the discussion boards were virtually abandoned after this private conversation which took place as the first assignment was submitted. The students apparently did not see the potential added educational value in using the discussion board at this juncture and simply stopped posting to the discussion board.

5.2.4.3 Connection to capabilities and factors

Throughout this unit, William tutored using capabilities and dealing with factors in the environment. William was required to use a number of sub-capabilities within the capabilities "Content Expertise", "Evaluation" and "Process Facilitation". "Content Expertise – Knowledge and skills" was a key sub-capability for William as he found himself on the telephone every day with students who had questions about the content of the unit. "Evaluation – Assessment" was another key sub-capability as William mentioned a number of times that marking student assignments was an important part of his role. "Process Facilitation - Disposition" was evident as he

showed a positive attitude, commitment, warmth and enthusiasm as he tutored. William exhibited "Process Facilitation - Facilitating" as he recognized and accepted his limitations as a facilitator of learning while also intervened to provide direction, give information and manage disagreements. "Process Facilitation - Values" was the final sub-capability William focused on. He provided educational counselling, helped learners take responsibility for their own learning, while demonstrating that he could adapt to new teaching contexts, methods, audiences and roles.

William was affected by a number of factors in his role of tutor with the main being the lack of a learning community which he strove the hardest to overcome. He eventually accepted that the learning community he wanted to create was not realistic and settled into the role expected by the students' as indicated by their seeming to not appreciate the educational value of posting to the discussion board.

5.2.5 Summary of William

In summary, William tutored an undergraduate unit which had been offered online previously. He was an inexperienced tutor who was an expert in the content of the unit. During the semester, William mainly demonstrated the following sub-capabilities: "Content Expertise – Knowledge and skills," "Evaluation – Assessment," "Process Facilitation – Disposition," "Process Facilitation - Facilitating" and "Process Facilitation – Values." The factors which arose during the unit which affected his capabilities included Interaction student / tutor, Student expectations, Community and Institutional milieu.

5.3 Case Study #3: Margaret's unit

This case study will present four aspects of how of Margaret's unit proceeded. An overview of the unit will be presented first, followed by an overview of the tutor, Margaret, then an overview of the students and finally, a presentation of the tutor capabilities.

5.3.1 Unit overview

The overview of the online unit will be untaken in three sub-sections. Firstly, a description of the unit will be presented followed by the design of the unit which will be followed by the notional role of the tutor in this unit. This will lead to the overview of the tutor in this unit.

5.3.1.1 Description of the unit

The unit which Margaret tutored was a second year undergraduate unit. Margaret's online unit was one of the units which was available within the Harambee educational environment (The description of the Harambee educational environment was presented in the data collection method section 3.3.3.4 Harambee). This unit was fully online and students could use it as credit towards obtaining an undergraduate degree. The unit content had a technology aspect to it but the students were learning how to implement technology in their given field of study. This was not a unit which focussed solely on technology expertise.

According to the unit coordinator, the unit was designed based on constructivist principles of teaching and learning. Materials and resources were presented for students to interact with in order for students to construct knowledge for themselves with minimal assistance from the tutor of the unit. Margaret's unit was based on an earlier version of the same unit which had been offered in an paper-based correspondence mode by the university for a number of years. This was the first time the unit was offered as an online unit and there were ramifications of this first offering which will be covered in detail later in the case study. On the Technology

Generations in Distance Education and Open Learning scale (based on Oliver and Grant, 1994, p. 1), this unit had a high level of learner independence and a low level of instructor and learner interactivity, and would fit between a correspondence unit and a computer managed instruction unit.

The unit was designed on the premise that the students were responsible for their own learning. They were also required to engage with the material in a manner the tutor called "active learning". The students were required to complete learning tasks in the unit to aid in their understanding of the content area and to improve their skill levels with implementation of technology in their field. The students were able to interact with the content materials in a number of ways including; text based instruction, demonstration, active learning, individual workshops, formative evaluation activities and creation of a portfolio of student work. Accordingly, the factor of community comes into play as the unit was not built around a community of learners. It was built around the content of the unit with the end result of having students with improved skills in both technology usage and the implementation of technology in their future workplace.

The asynchronous nature of the unit demonstrated one of the strengths of this online educational environment. This was the flexibility of studying when it was convenient for the students, rather than having them tied to a specific lecture schedule as is the case in traditional face to face classes. Through the online environment, this unit was designed to provide the students the opportunity and flexibility to work on the unit tasks when they had time to.

There was a CD-ROM containing all the initial unit materials sent to all the students in the unit but was not sent before the semester started. The CD-ROM was originally envisioned by the unit coordinator as an "unnecessary backup as all the information for the unit was online." However at the beginning of the semester, there was frustration and stress resulting from access problems that an earlier arriving CD-ROM would have alleviated. The late mailing of the CD-ROM exacerbated access problems for the students because the readings and workbook for the unit was on the CD-ROM.

*** CD-ROM
Posted by ****, Unit Coordinator on Sun, 21 July 2002, at 1:59 p.m.
Hi everyone,
In spite of our best efforts to bring online learning to you seamlessly, you may experience difficulty downloading the course materials over slow internet connections or because you are using another Internet Service Provider (ie a provider other than E CU).If you have tried all the things recommended in my welcome posting (including the settings changes recommended in Setup Instructions on the Student Portal page), you are obtaining no joy and are about to throw your PC from a bridge, TAKE HEART!
You can obtain a CD-ROM copy of the course materials using the form provided with the introductory letter to students.
I feel better now..
****:-) (unit coordinator name)

An aspect of the *Design / Pedagogy* factor was the twenty one page unit plan which presented a comprehensive introduction to the planning and material used in the unit which was . This included typical details about the unit like text books, tutor contact details and assessment procedures that would be available in a face to face class. Also included were technical aspects of the unit such as the online learning environment EduLattice materials, software requirements and the Information Services Bulletin Board. The unit plan did use some technical jargon which could be confusing or intimidating to new technology users. The requirement to use a number of logins and passwords was presented as well as the use of the terms such as WYSIWYG in reference to HTML editors and the use of numerous acronyms such as IKM, SCIS and "indoor gateway" did not seem to communicate at the level of the students in the unit.

Since its inception, a component of the *Institutional Milieu* involving the unit had been that it was a paper-based external unit at the university. Therefore, all of the external delivery procedures and policies of the university were in place to support the stakeholders involved with the unit. The University's Flexible Delivery Centre had a great deal of contact with the unit therefore the formal feedback mechanisms from the university were applied to the unit. Quality assurance was measured through a variety of formal and informal ways, including students completing feedback surveys, monitoring the satisfaction levels of student postings on the discussion boards and online forums, examining the quality of student work, and individual conversations with the students. However, other than the formal feedback systems regarding quality assurance, there was no formal system in place for the evaluation of online tutors.

As this was the first time this unit was offered in an online environment, there were technical, institutional and bureaucratic issues which arose. The *Technical Milieu* included the usual technical problems that arose in this unit were broken hyperlinks on the website, when the servers went down and obtaining access to the unit material. The unit coordinator stated that these were situations which occurred during the unit in spite of the efforts of those involved. According to the online tutor, "the first three to six weeks of the unit had some major problems as web access was different depending on where the students were living." Having students using work computers to do their class work was another problem which needed to be addressed as they had to address issues like not being able to install software and working through employers' firewalls to access the Internet. Also, having a work computer did not let students access the university library databases. A computer must be connected to the university network which was difficult to do with employer computers. A key frustration point which persisted throughout the entire semester was access to the outside content facility called EduLattice.

Re: Hi Everyone
Posted by ***** on Fri, 2 Aug 2002, at 9:50 a.m., in response to Re: Hi Everyone, posted by Marg on Wed, 31 July 2002, at 5:24 p.m.
Good Morning Marg
I am having trouble getting into EDULATTICE and to do the on-line courses - even with help with the MegaLab HelpDesk, access is continually denied.
Any suggestions as this whole process is getting to be a little frustrating.
Any students who also have any suggestions, great if you could respond.

Back to my other assignment due next week.

EduLattice access denied
Posted by ***** on Sat, 24 Aug 2002, at 11:39 a.m.
Is anyone having trouble getting access to EduLattice?
I'm using my user name as with lab user name: ******
The Password I used in Computer Labs but all I get is access denied
Any help welcome, especially from Marg
***** (student name)

This issue was connected to the *Design / Pedagogy* of the unit. The EduLattice. online content was initially used in this unit as mandatory tutorials and later was changed to optional enrichment material. There was some confusion regarding how the EduLattice tutorials were meant to be used. Both the unit coordinator and the tutor explained in their separate interviews that the EduLattice material was optional

and was seen as enrichment activities only. The students believed that the EduLattice material was mandatory because of the wording of the EduLattice introduction in the Unit Plan. This situation therefore was also connected to the *Interaction student / tutor* and *Content Milieu* factors. The unit plan and a subsequent discussion board posting by the unit coordinator stated "Students should undertake the following EduLattice online modules available on Harambee:." The introduction then listed a number of modules students should complete. The student responsibility toward the EduLattice material was not cleared up until very late in the semester when a student posted a question about whether EduLattice was compulsory. The unit coordinator replied in no uncertain terms that it was recommended content but not compulsory and there would be no exam questions taken from the EduLattice modules. The actual postings were:

EduLattice
Posted by ***** on Mon, 21 Oct 2002, at 4:46 p.m.
Hello Marg,
Just wanted to find out if the EduLattice course was compulsory as I have had/am having a great deal of trouble downloading it and working through it....
***** (student name)

Re: EduLattice
Posted by ****, Unit Coordinator on Tues, 22 Oct 2002, at 9:31 a.m., in response to EduLattice, posted by Wendy on Mon, 21 Oct 2002, at 4:46 p.m.
Hi *****,
The EduLattice e-learning courses were recommended, but not mandatory. NO exam questions have been set on EduLattice and there is no compulsory requirement to undertake EduLattice courses.

However, if you did succeed in gaining access and completed the courses, you probably found that they were helpful and genuinely assisted in gaining an understanding of FrontPage and Internet basics.
****:-) (unit coordinator name)

Throughout the unit, a great deal of obvious time and effort on the part of all the stakeholders was spent dealing with the access situation regarding the EduLattice materials. This can be seen from the number of postings on the discussion board about this issue as well as comments made in the interviews. It was discovered that EduLattice delivered its content through a port which is usually shut by Internet Service Providers (ISP) in this region of the world. Students needed to ask their ISP to open this port so that they could gain access to the EduLattice material. A number of ISPs were not willing to open the port for a range of reasons so these students were unable to have any access to EduLattice at all. Due to the nature of the agreement between the university and EduLattice, having the university host the

content was not an option. Therefore the Institutional Milieu resulted in there being very little the university could do to help students with certain ISPs during the unit.

This unit was seen as a work in progress by the unit coordinator. Margaret and the unit coordinator considered the unit to be quite successful because the final pieces of student work showed quality and the student learning was sound in their opinion.

5.3.1.2 Unit design

The unit was designed along the lines of a traditional correspondence unit according to the unit coordinator. The tutor did not have an active instructional role. Students were to work on their assignments individually and Margaret provided assistance when asked. This individuality of students resulted in no focussed attempt to design an online learning community which directly related to the factor Community. There was a public discussion board available which students used to ask questions and receive clarification regarding details of the unit. The correspondence model of the design led Margaret to observe that "much of the motivation that used to come from the tutor now has to come from the design of the unit" indicating less capability requirement in the *Process Facilitation* area.

The unit was designed with some flexibility. Students had some choice for what they could do for each assignment. Also, students could work with a variety of applications which could complete tasks as there was no compulsory software. For example, there were a number of HTML editors which students could chose from. The tutor had some knowledge of the suggested applications but the students were free to choose another application which Margaret did not have knowledge of. This required her to have some high levels of *Technical Knowledge* capability.

The design of the unit involved a focus on student competence. This was the reason a great amount of thought went into the design of the unit before it was offered. The unit had a focus on student outcomes including knowledge and skills. This focus resulted in the unit not having a textbook. The *Content Milieu* and the *Technical Milieu* factors determined that textbooks were unsuited to achieve specific student outcomes as the unit progressed. There were lecture notes posted from previous

incarnation of the unit that had been offered without the same hardware and software capabilities. Another result of this focus on student competence was the large workload which was mentioned by both Margaret and the students when they described the unit.

5.3.1.3 Notional role of the tutor

According to the unit coordinator, Margaret was expected to be the first port of call for all matters involving this unit required high *Course Management* capabilities. She was to refer all matters beyond her abilities to someone else within the university. Feedback on and assessment of student assignments and postings on the unit discussion board were the scope of Margaret's expected responsibilities which required *Evaluation* capabilities.

The tutor was expected to have Technical Knowledge to deal with routine technical situations which arise in an online learning environment. This was especially since this unit involved technology both in its content and its delivery. Formal training and procedural knowledge of information systems was an expectation of both the students and the unit coordinator.

There were a number of interpersonal aspects of the tutor's notional role. This included *Course Management* and *Process Facilitation* skills as well as the ability to develop a positive rapport with the students through electronic communication. The tutor was also theoretically to assist the students so that they felt they had learned something in the course of the unit. Connected to this was the monitoring through *Evaluation* of the students to ensure they had achieved the learning outcomes. There was also the expectation from the unit coordinator that the tutor would be hardworking. The tutor was also expected to have lots of energy in order to support the students.

5.3.2 Tutor overview

The overview of the tutor, Margaret, will be presented in three facets. A description of the tutor will be presented first followed by the beliefs held by Margaret and finally, an account of Margaret's personality.

5.3.2.1 Tutor description

The description of Margaret as a tutor is multi-faceted. Margaret was handpicked to tutor this online unit. Margaret did not have an education background and had no formal training as an educator. She did however have experience tutoring this unit in its previous incarnation as an external unit. One of the reasons Margaret was chosen to tutor this unit was for her knowledge in content of the unit. This was Margaret's first experience with online education in any form. Margaret had recently won an award for excellent work in her role as a non-teaching professional at the university and she pointed out that tutoring was not in her career path.

Web Study Mode Tutor (unit name)
Posted by *****, Unit Coordinator on Thurs, 25 July 2002, at 9:49 a.m.
Hi Everyone,
It is with great pleasure that I announce that Margaret will be tutoring (this unit) Web Study Mode students in Semester 2. Margaret is a Faculty ***** in the Faculty of ***** at ***** (institution name). In 2001 she was the recipient of a Award for Excellence in Research Support and in recent years has been actively involved in this University's digital library programme. She has significant experience as a distance education tutor and has completed courses in Web publishing.
Margaret will mark your assignments, and provide advice on meeting assignnment requirements. Through the unit bbs, she will also supply feedback and comment aimed at assisting you to achieve course learning outcomes. She will be monitoring this bbs regularly and responding to student postings. Margaret will be your first port of call in relation to these matters. If Margaret cannot deal with your problem, she will refer it to me for guidance.
Margaret's contact details are as follows:-
Email: m.margaret@*****.edu.au
Tel: (00) 00000000
Preferred contact day is Tuesday.
*****:-) (unit coordinator name)

There were a number of reasons relating to the *Tutor Personality* factor as to why Margaret chose to tutor one of the online units which was examined in this study. There was a desire on Margaret's part for experience working in an online education environment. The unit was a good fit for Margaret as she was available to tutor the unit and the unit needed to have a tutor for this semester. Margaret had previously refused to take a different tutor position because she did not feel she knew enough about the content to be competent tutoring the unit. Another determinant for

Margaret in her decision to tutor this online unit was the opportunity to help new students in the field and share some of her industry experience and expertise with others. The final reason Margaret mentioned that she decided to tutor this online unit is that the unit coordinator personally asked and she had worked with the coordinator previously and had found it to be a pleasant experience.

5.3.2.2 Tutor beliefs

Margaret had a number of beliefs about online learning and education which reflected the *Tutor Personality* factor. Margaret explained how she enjoyed interacting with the students. This included learning about the students, their expectations as well as watching them develop throughout the semester. Margaret found it pleasantly surprising that one student actually came on campus and arrived at her office to have a meeting with her about the unit and the assessment tasks the students had to complete. Although Margaret was quite happy to meet with them, she said it was rare for students in external units to have face to face meetings with tutors.

Margaret talked about the *Community* factor by what she believed was the lack of community in this unit. She saw the potential for the technology to improve how the students could interact more with each other. She was interested in how students interacted with each other in this environment since there was no community planned. Margaret expressed doubts that everyone in the unit was reading the discussion board but felt that it would be a great way to get more student to student and student to tutor interaction happening. Margaret believed that students liked social interaction such as contact from tutors and other students.

Margaret held a number of beliefs about how she needed to act as a tutor. Margaret believed that she needed to be tough and stick to the rules, while maintaining empathy for the students. She also believed that any aspect of the unit should not fluster her. Margaret stated that she needed to have knowledge of both the unit content and the learning outcomes to better help the students. Another belief that guided Margaret's actions was that older people resisted change and therefore would be more resistant to technology.

5.3.2.3 Tutor personality

One of the critical factors for Margaret regarding her ability to tutor online was the *Tutor Experience* factor. Margaret felt she had enough experience with the content of the unit and with distance education to do a good job but she wanted more experience tutoring in an online environment. There were several things which occurred throughout the semester that she thought she could learn from. This included the *Facilitation of Learning* factor concerned with allowing students access to online chat sessions so that the students could communicate amongst each other. At the end of the semester, Margaret looked forward to gaining even more experience with the online environment. She had managed to become comfortable with the *Technical Milieu* of Harambee and was prepared to help the students more ably with her new knowledge.

Re: ASS2
Posted by Margaret on Thurs, 29 Aug 2002, at 9:23 p.m., in response to ASS2, posted by ***** on Tue , 27 Aug 2002, at 7:43 p.m.
Hi *****
It is great tot see you looking ahead to assignment 2. With regards your question about the draft security policy for the selected agency.
It is expected that students will research the literature and write a draft policy based on this reading and the student's understanding of network infrastructure and utilisation.
Students should not present an agencies existing policy. Any use of information contained within such a policy must be acknowledged.
Since this information may also be confidential, it would not be wise to use an existing policy for the assignment.
I hope this makes things clearer for you
Cheers
Marg

Influencing the *Tutor Personality* factor was that Margaret was a very knowledgeable and welcoming person. This was evident through her postings to the discussion board throughout the semester. Margaret's relaxed nature kept her from being fazed easily even with the situation regarding the access to the EduLattice materials. She was also comfortable using her *Technical Knowledge* to deal with the *Technical Milieu* of the unit. Margaret also actively improved her technical skills when she felt she needed to know more. Margaret presented herself as a person who knew her limits because she had previously refused jobs she felt she was not prepared for. Margaret demonstrated her *Process Facilitation* skills through her

handling of the *Interaction student / tutor* factor by directing student inquiries to others who were more able to answer appropriately.

5.3.3 Student overview

The overview of the students in Margaret's unit will be presented in three facets. A description of the students will be presented first followed by the behaviours of the students and finally, an account of the experiences of students.

5.3.3.1 Description of the students

To get a clear image of the students enrolled in Margaret's online unit, the word 'varied' is appropriate. The demographic details of the students was quite varied ranging from a mix of full and part time students, to working in the field, working out of the field and unemployed, to ages ranging from early 20s to mid 60s, to a large variety of geographic locations. This cohort of students was described by Margaret as challenging because of the wide range of skill levels in the content area and previous education. The technology skills and experiences of the students varied a great deal as well. About the only demographic constant was that the majority of the students were females.

5.3.3.2 Student behaviours

The behaviours of the students in this unit were varied and this influenced the factor of *Student Expectations*. Some students worked away individually on the content of the material and interacted minimally with others in the unit. Some students interacted with others to receive support with technical aspects of the unit. Some students attempted to create more interaction and community in the unit. A number of students withdrew from the unit for a variety of reasons.

An aspect of the *Institutional Milieu* was that the mode of delivery for this unit was announced as online shortly before the semester began. This change in the delivery mode for the unit from paper-based to online was resisted by a number of the students. The lack of traditional materials which were not initially forthcoming in

this unit caused varied reactions for the students in the unit. The creation and availability of the CD-ROM alleviated some of these stronger *Student Expectations* reactions but the tone was set for the remainder of the unit. Public student unrest on the discussion board regarding the unit continued as an undertone throughout the semester.

5.3.3.3 Student experience

During this unit, there were several issues which affected the relationship between the students and the tutor associated with the factor *Interaction student / tutor*. These issues included the *Student Expectations* for the unit, the tutors expectations of the unit and the communication which took place. The root of some of these issues can be found at the decision to offer the unit in an online mode rather than in an internal (face to face) or external (correspondence) mode. A characteristic of *Interaction student / tutor*, a lack of trust, resulted from the unexpected change of the mode of delivery.

Hello from one of the dinosaurs!
Posted by ***** on Sat, 10 Aug 2002, at 4:57 p.m.
Hi there
My name is *****
I'm not too enthused about this unit - especially having to do it externally
I suppose age might have to do something with it - 46
I have a feeling this semester is going to be a bit of a struggle.
Will keepa looksee at the bbs, now that I can find it.
In other units, there was a direct link from the unit home page - but I guess that is too easy
Thanks
***** (student name)

The difference between *Student Responsibilities* and *Student Expectations* for this unit caused some problems for the students, the tutor and the unit coordinator. The students did not feel that the online unit materials addressed their needs. The interviewed student said "Everything came in the mail and you had to sit there and read it all" and "Had to get the assignment clarified every time because I could never understand the wording of it." The access to materials was an issue for the students as some students were unable to retrieve the materials from online learning environment. This was rectified when the CD-ROM was mailed out but some students objected to having to print their own materials. In other units, students in

paper form receive all materials before the semester begins as per the procedures of the Flexible Delivery Centre (FDC).

The *Technical Milieu* via the online learning environment was the centre of some negative experiences for the students. The interviewed student stated "online education has to be finetuned for accessibility." The students felt that the instructions for logging into the unit needed clearer detail. Many students were uncomfortable with their level of computer skills and the access instructions were not appropriate for all the students in the unit. In addition there were problems with broken links on the website. Therefore the readings which used to be printed for students were not available unless they took the initiative and had the ability to search the Internet to find the specific readings on their own. For the links that worked, not all the materials were full text documents so students still had to search for the readings. According to Margaret, the *Student Responsibility* for finding the readings was not what the students expected. She stated that "expectations of the students that everything was going to be handed to them on a plate." The access situation with the EduLattice tutorials also added to the frustration of the students. They believed it was mandatory to access EduLattice while Margaret and the unit coordinator did not realize the students believed that. In fact, Margaret never managed to access EduLattice during the semester and mentioned that she did not know exactly what the EduLattice content consisted of. She referred to the factor *Management of Teaching Processes* when she said she "gave poor materials a miss (EduLattice) to reduce frustration."

Readings
Posted by *****, Unit Coordinator on Wed, 6 Nov 2002, at 3:22 p.m.
I have been investigating the readings problem in this unit and found a number of broken links that I am currently fixing. So far I have identified 3 links affected in this way.
I expect repairs to be complete by the end of the working day. If you are missing these readings, then you should read them.
*****:-) (unit coordinator name)

Another *Student Expectation* characteristic was that the amount of work required from the students was more than some students expected. The interviewed student remarked that "the amount of work required in this unit was too much for someone working online." There was a steep learning curve in this unit due to the computer based nature of the online educational environment. This led to anxiety for some

students as they had to develop these computer skills while grappling with the content of the unit. Through *Interaction student / tutor*, Margaret spent a great deal of time working with several students individually with this matter. A number of students commented on the public discussion board that the workload in this unit was much greater than what they were used to in their other units.

Re: Readings? Help!
Posted by ***** on Wed, 6 Nov 2002, at 9:46 a.m., in response to Re: Readings? Help!, posted by ***** on Tues, 5 Nov 2002, at 4:31 p.m.
Hi *****,
Well said!!! I agree with everything and experienced all the same frustrations and felt like withdrawing too.
One further problem I experienced was wrist and shoulder problems from working on the computer too long to complete modules and then going to work to do more of the same. At times I had to stop for days to recover and got behind which caused further stress.
I agree the technology issues must be addressed well before start of the semester. When print materials were mailed out I usually started straight away and did several weeks work before the start of the semester to get a feel for the unit and give some space for assignments.
I haven't received my evaluation sheet yet but will fill it in when it arrives.
Good luck for exams
***** (student name)

Margaret explained that "students expected everything online." She expected students to take responsibility for finding material on their own since the technology allowed this capability. Even though the design of the unit mandated this situation about student responsibilities, Margaret she bore the brunt of some students' negative opinions.

Margaret expressed concern that some students' expectations were unrealistic regarding the unit and the amount of work expected of the tutor. One expectation of the students was that Margaret "would be accessible 24/7." This was definitely not the case as Margaret did not have Internet access at home so she never checked her email or the discussion board over the weekend. Even though the students were told this at the beginning of the semester, it continued to be a frustration point late in the semester. The interviewed student said, the tutor "Needs a system for time management for one to one communication with each student so no one dominates your time." The communication between the students and Margaret left her unsure of what the students thought about the unit.

All the stakeholders agreed that effective communication was a positive thing but the students and unit coordinator disagreed on how successful the communication was. One *Student Expectation* factor was for clear messages and many did not feel that they received that. The interviewed student commented "Unsure when she needed help and didn't know how to go about getting it." Midway though the semester as a change to the *Interaction student / tutor*, some students started to contact the unit coordinator directly regarding *Technical Milieu* as Margaret always directed students to the unit coordinator for these types of questions.

Another *Interaction student / tutor* challenge came from the use of different definitions of online education. There did not seem to be an awareness by those involved that different definitions were being used. Through the *Institutional Milieu*, the FDC of the university seemed to view online education as a traditional correspondence unit that was based on the web, rather than on paper. The students seemed to see online education as a face-to-face unit which had virtual classrooms rather than physical classrooms. The unit coordinator and Margaret seemed to have a compromise between the two extremes. These different definitions varied greatly which influenced the level of contact in the unit. The unit coordinator's view of this online offering is presented below.

Re: Readings? Help!
Posted by ***** on Tues, 5 Nov 2002, at 1:52 p.m., in response to Re: Readings? Help!, posted by *****, Unit Coordinator on Tues, 5 Nov 2002, at 9:09 a.m.
Hi ***** and everyone,
Online has many advantages but I still prefer print based. With print all the course materials were supplied which saved time in working through the weekly modules and didn't have students depending on connections and unfamiliar technology (for some) to get the work done.
I guess though we are the guinea pigs, so it must only get better next year. It is pretty tough studying externally and when the course materials are hard to access it just puts added pressure on already stressed students, most of who are working as well.
If we take the time to put all our ideas for improvements and problems we encountered this year on the evaluation sheets, it should help improve future online units.
Good luck for exams.
*****

5.3.4 Tutor capabilities

This section involving tutor capabilities is divided into three sections: a description of the actual role Margaret played as the tutor, a description of the situations encounted in the unit with a focus on the community interaction and discussion

board, and finally a connection of Margaret's capabilities to the capabilities and factors presented earlier in this paper.

5.3.4.1 Actual role of the tutor

The actual role which Margaret undertook involved dealing with more variety in the students' emotions than she initially expected through her *Process Facilitation* capabilities. Many student expectations were expressed with emotion as students got frustrated by parts of the unit or anxious when assignments were drawing near. Margaret defined her role in the unit as being "like a little help button on the screen""

A great deal of Margaret's role revolved around her *Evaluation* capabilities. This involved both assisting the students as they worked on the assignments and marking the assignments. Margaret spent more time than she originally expected explaining how she arrived at marks for student work. "When you get a good assignment, you know it because it only takes half an hour to mark at most. When you got a bad assignment you had to read everything looking for at least some points and it takes a lot longer." Margaret explained that this was the result of the marking procedure and *Student Expectations* factor due to dealing with sometimes unrealistic student opinions regarding the quality of their work.

Margaret spent a great deal of time marking assignments which arrived individually. In a traditional class, lecturers can reasonably expect students to hand in assignments in class on the due date. In this environment, the assignment had to be postmarked by the due date and addressed to the FDC. Once the FDC received it, it was noted as received and then forwarded on to Margaret. Given the potential length of time the postal service took to get an assignment to the FDC and then to Margaret, assignments arrived over a three week period. Add this to the *Institutional Milieu* factor regarding the policy that assignments will be marked and returned to students within fourteen days. This meant that Margaret had to have some assignments marked and returned before she received all the assignments. University procedures also call for the assignments to be graded on a curve that limited the number of students who could receive each grade so Margaret was forced to guess at the quality of assignments which would come in at a later point.

Ass2 week13?
Posted by ***** on Mon, 16 Sept 2002, at 4:31 p.m.
Hi Margaret,
I'm confused again. You have said on the BB that ass2 is due the beginning of week 13 on the 14 oct. On a time table I have for one of my other units week 13 begins 21oct. Am I being optimistic in hoping that Ass2 is due by the 21oct instead of the 14th oct.
Regards
*****

With the emphasis on the *Facilitation of Learning* factor owing to the lack of formal teaching opportunities design into the unit, Margaret guided students using a great deal of examples to get her points across. She also avoided some of the *Content Milieu* by not using what she described as poor materials. This is why she did not get too frustrated over her inability to access the EduLattice materials. Margaret did not see how they could be useful materials if they were unable to be easily accessed.

Dealing with the *Interaction student / tutor* in the unit was an integral part of Margaret's role in the unit. She monitored the discussion board and used it as a group email system. Margaret said, "The discussion board was like a global email." This allowed all students to benefit from each students' queries and situations as well as access to any other information she found. This management included dealing with *Student Expectations* that she was available at all times for questions and that she would answer inquiries immediately. She also had to determine what was appropriate interaction in her role as a tutor. Some types of interaction matched Margaret's beliefs and *Tutor Experience* factor regarding her role like giving extensions for assignments, giving alternative assignments if the students' circumstances warranted, directing students to content readings and the like. Margaret stated that she "gave the opportunity to do something else if assignment couldn't happen as expected." What coincided less with Margaret's beliefs was the amount of counselling Margaret did for a variety of issues like stress, time management, occupational health and safety regarding repetitive stress injuries (RSI) and job prospects for students after graduation. The vast majority of the email and the telephone communication was of an individual nature which most students could not see which led it to be quite repetitive in nature.

5.3.4.2 Situations encountered

Margaret spent a deal of time and energy reacting to situations, which usually stemmed from the factors *Design / Pedagogy* and *Technical Milieu*. The pace of teaching was sped up in this context because of the number of unplanned mini lessons Margaret gave to individual students, rather than the traditional three hour lecture once a week which were part of *Interaction student / tutor*. There was no procedure in place to allow all the students to take part in a mini lesson or discussion which caused Margaret to spend more time on this part of the tutoring than she was being paid for.

The *Institutional Milieu* factor regarding the treatment of this unit and the students is another factor which was dealt with by Margaret in her tutoring role. Margaret mentioned that having pre-existing technology competence levels for students would have aided her a great deal. She stated that the majority of the situations she dealt with would have been addressed before the students started the unit. With more advanced warning, students might have had the opportunity to make sure their technology skills were at some predetermined level before starting the unit. This would ensure that the tutor would not have to spend so much time dealing with the frustrations and anxieties involved with people trying to learn content and technology skills at the same time.

The factor *Student Responsibility* and the supposed "spoonfeeding" of the students was a concern for Margaret. She felt that some students just didn't do the work required to complete the unit. She cited examples such as the reluctance of students to search for readings on the web or in the library if the link on the website wasn't working. On the other hand, she had many glowing examples of student innovation in the assignments. She also praised some students who took the initiative when situations arose to be responsible for their own learning and to get the necessary work done. Some students went so far as to research HTML editors to determine if they wanted to use the suggested editor and they studied all the material offered, not just the mandatory offerings. Margaret displayed her *Process Facilitation* capabilities by being particularly impressed with the effort of some students who learned how to read critically from the computer screen rather than printing material off or relying on a workbook.

A final major situations Margaret encountered was the *Content Milieu* and *Technical Milieu* factors which were prevalent throughout the unit. These included everything from having EduLattice not working for everyone, having the CD-ROM sent out late and getting the students instructions for logging into the Harambee site. The design of the unit homepage on Harambee led to some discussion. Margaret felt that resources were not laid out in an intuitive location and said "layout of the website was unclear for where stuff was". She also stated that the discussion board was "buried on the links page". There was some information on the unit Harambee site that neither Margaret nor the students could access. Eventually, the unit coordinator had to step in and direct the other stakeholders to its location.

Hello
Posted by *****on Thurs, 25 July 2002, at 10:44 a.m.
Hello All,
I finally found the bulletin board.....I am in my second year of the ***** course and working full time at a ***** (workplace). I am slightly worried about the level of computer expertise needed for this unit...
Oh well...Good luck to every one.
***** (student name)

Re: mjr1945 CD-ROM
Posted by ***** on Sat, 10 Aug 2002, at 4:51 p.m., in response to mjr1945 CD-ROM, posted by *****, Unit Coordinator on Sun, 21 July 2002, at 1:59 p.m.
Dear *****,
No joy for me yet! Now that that I've found the bbs I can't find the letter with the form for the [unit] CD-ROM
Can I get another one sent, rapidly or can i go get it if that is quicker?
Bythe way, how come every coordinator is different - ***** [another unit] CD-ROM just came in the post without ordering?
***** (student name)

5.3.4.2.1 Community interactions

The *Community* factor was critical because the unit was not designed on the premise of creating an online learning community. There was initially no attempt made to have the students interact with each other. The public discussion board was envisioned as a place to interact with the tutor to ask questions and receive clarification regarding details of the unit. The discussion board was not regarded as a place for students to purposefully interact in a social manner. The designer of the unit decided that there was too much work to be done in the unit and that did not

leave time for student-to-student interaction as all the assignments were designed to be individual in nature.

Social interaction was not discouraged but there was little encouragement either. Thirteen weeks into the unit, there was a request from students to use a chat room to help students study for the exam so that they could discuss things directly with each other. This was arranged for them but the request and advertising for this chat feature came from the students as a grassroots phenomenon, rather than from the unit coordinator or Margaret in their roles as educators.

Chat Room (Exam Revision)
Posted by *****, Unit Coordinator on Wed, 23 Oct 2002, at 7:55 a.m.
A chat room for [this unit] students is now active on the Student Portal. You can access the room from:- http://student.*****.edu.au/VC/chat.HTML
To make the room operational you should use this bbs to establish with your fellow students the dates, days and times when the room will be active for exam revision. ***** is already active canvassing the interest of her fellow students.
Arrangements should allow for differences in time zones, since the student population in this unit encompasses most Australian States.
NOTE: To avoid frustration, you should check before the revision session to ensure that your account information works and provides access to the chat room.
Another way of providing a chat like facility is to use instant messaging and establish an alias for the unit. Whichever way you go, it is a worthwhile idea and I hope that you will take it up..
*****:-)

Re: Chat Room (Exam Revision)
Posted by ***** on Wed, 23 Oct 2002, at 11:21 a.m., in response to Chat Room (Exam Revision), posted by *****, Unit Coordinator on Wed, 23 Oct 2002, at 7:55 a.m.
Thank you ***** (unit coordinator),
Appreciate the quick response.
We should of been using the chat room all semester, however it has taken most of the semester to learn how to use the frontpage software with varying degrees of success.

One of the limitations placed on Margaret in regard to creating an online learning community was due to the *Institutional Milieu* factor regarding the lack of ability to contact the students directly through email. This situation was identical to what William experienced when dealing with the FDC. In an attempt to work through the *Interaction student / tutor* factor, Margaret posted her email address on the discussion board so that students could initiate email contact with her but, like William few chose to do this.

5.3.4.2.2 Use of the discussion board

Throughout the semester, the discussion board was used for a variety of purposes. It was usually used by the students to introduce themselves or to post a question for Margaret to answer. Margaret usually used it to answer students' questions.

The majority of student postings on the public discussion board were questions for Margaret or the unit coordinator to answer. When students posted questions to the board for Margaret to answer, they were usually clarifications of points on assignments or readings, such as:

> Re: Frontpage
> Posted by ***** on Tues, 20 Aug 2002, at 10:02 p.m., in response to Re: Frontpage, posted by Margaret on Wed, 14 Aug 2002, at 5:21 p.m.
> Marg, I too am having a problem finding this activity....
> It says in the workbook(pg 4 Computer metworks) that it is an 'online workshop activity'available at the unit website.
> Can you clarify
> ***** (student name)

Two other types of posts on the public discussion board were students attempting to create a feeling of *Community* through communication with the other students and the unit coordinator trying to distribute information about technical problems. The student communication with other students was either connected to a question for Margaret or solely for the other students. An example of a question to other students with a comment for Margaret attached is:

> Re: Readings? Help!
> Posted by ***** on Mon, 4 Nov 2002, at 6:49 p.m.,
> in response to Readings? Help!, posted by ***** on
> Mon, 4 Nov 2002, at 4:49 p.m.
> Hi *****,
> I have had the same problem!! All through the unit I have attempted to access the readings online with no success. Occassionally I have found an abstract but rarely the fulltext of an article and the readings on the CD Rom only cover some of them.
> I just gave up and went on with the next module. It certainly does make for a frustrating time!!
> Perhaps Marg can enlighten us.
> Good luck with your revision.
> ***** (student name)

As the semester wore on the messages from student to student became more resigned and had a negative tone to them in regard to the unit. If there were students who did not agree with the posted messages, they did not post anything publicly to

oppose this belief. One example of student frustration was indicated in the posting below.

Re: Readings? Help!
Posted by ****on Tues, 5 Nov 2002, at 4:31 p.m., in response to Re: Readings? Help!, posted by ***** on Tues, 5 Nov 2002, at 1:52 p.m.

I agree! Print is so much easier. You can easily take readers with you to other places and quick read for study. On-line, unless you download then you have to read from your terminal which is not efficient. I also would prefer to have guides and workbooks in print form. Using On-line is a positive step as a back-up to readings and other requirements. The use of BBS is a great help.

On-line readings? Where? As explained by the other students. I also had problems downloading information. It wastes time, frustrating, and what do you learn. Only that you cannot access material. EduLattice was a waste of time. Depending where you live in Australia - metropolitan or remote areas. I would not change my ports etc. as advised by the Webmaster to access EduLattice and leave myself open to attack from hackers especially when we live on the outskirts of Perth and require internet and outlook for contact with business, family and friends.

The CD-Rom should be just given to each student regardless of access problems as part of their student kit. I wasted a number of weeks trying to access EduLattice/reading requirements etc. I think I was about 5 weeks into the unit until it all came together technology wise. I had to continually contact help desks, the faculty webmaster etc. I was given no instructions how to get into systems that do not work. Quite a number of times, the faculty help desk could not assist even though they tried.

When students enrol in this unit they should be advised that it is only going to be a online unit, what software is required, so that they are well prepared on the first week. To be advised the Friday before the semester was due to start that the unit was going to be on-line, and then to start to buy software etc. and then find all the problems associated with that process I think was unfair to all students. Of course then those who had not used Frontpage, previously such as myself then had to learn how to use the software with varying degrees of success.

Therefore this unit has become a very expensive, software/downloading all guides/workbooks/plans etc and only then to be told that each student could have a CD-Rom. As previously mentioned by others, readings from CD-ROM, hit and miss. So revision for exams becomes a little harder again.

I think all students who stuck with this unit, should feel very successful for their endeavours as at times I thought I should withdraw, from the pure frustration of the unit. So congrats to all who stuck with it.

I also think the use of the Blackboard would of been a positive step for discussion for this unit, and should be considered for following semester.
I have sent my evaluation already to Margaret, with my last assignment.
My best wishes for the exam.

5.3.4.3 Summary of connection to capabilities and factors

Throughout this unit, Margaret tutored using a number of capabilities and dealing with factors which affected her capabilities. Due to the learning environment Margaret was involved with, there was a focus on several capabilities and several factors. The capabilities required of Margaret as well as the factors affecting them will be presented below.

Margaret was required to use a number of capabilities in her role of tutor. Chief among these were sub-capabilities within the capabilities "Technical Knowledge", "Evaluation" and "Process Facilitation". "Technical Knowledge – Technical Support" was the key sub-capability for Margaret. Her unit had a number of technical challenges in which she had to provide support for students. These challenges were consistent in nature so numerous students faced the same challenge at various times. While she did not have the expertise with specific challenges before the unit, Margaret was able to help students after the first such instance had been rectified. "Technical Knowledge – Attitude" was another sub-capability Margaret demonstrated a positive attitude toward using the technology even when she faced access challenges. "Evaluation – Assessment" was another key sub-capability as Margaret mentioned a number of times that marking student assignments was an important part of her role. She explained that a great deal of her interaction with the students regarded the technical challenges of the unit or the assignments which the students were required to complete. "Process Facilitation – Communication" was the final key sub-capability Margaret exhibited. She spent a great deal of time and effort into keeping the lines of communication open between the students and herself. She also constantly managed to temperate the students' expectations and beliefs.

Margaret was affected by a number of factors in her role of tutor and the main ones are presented below. The technical milieu in which Margaret's unit found itself set the tone for the semester with some students not being happy with studying in an online mode. The expectations of the students regarding the delivery of the unit and the lack of trust between the students and the university were very time intensive for Margaret. The facilitation of learning was evident on the part of Margaret as she worked with students individually to interact with the content. The final main factor which affected Margaret's capabilities was the interaction between the students and the tutor. Margaret promoted interaction between the students and herself throughout the unit. This was not a simple task given the *Technical Milieu* of the unit and the strong emotions which were exhibited by a number of people involved in the unit. Emotions such as happiness, confusion, anxiety, frustration and anger were all in evidence in varying strengths on the discussion board and were mentioned throughout the interviews.

5.3.5 Summary of Margaret

In summary, Margaret tutored an undergraduate unit which had never been offered online before. She was an expert in the content of the unit and an experienced tutor. During the semester, Margaret mainly demonstrated the following sub-capabilities: "Technical Knowledge – Technical Support," "Technical Knowledge – Attitude," "Evaluation – Assessment" and "Process Facilitation – Communication." Factors which arose during the unit which affected her capabilities included the Technical milieu, Student expectations, Student responsibilities, Facilitation of learning, Technical milieu and the Interaction between the students and the tutor.

5.4 Case Study #4: AC's unit

This case study will present four aspects of how of AC's unit proceeded. An overview of the unit will be presented first, followed by an overview of the tutor, AC, then an overview of the students in the unit and finally, a presentation of the tutor capabilities in this unit completes this section. For the purposes of this case study, the illustrative examples of discussion board comments will come from the main discussion board only as the small group discussion boards were for students to work and interact with their small group mates.

5.4.1 Unit overview

The overview of the online unit will be untaken in three sub-sections. Firstly, a description of the unit will be presented followed the design of the unit, then the notional role of the tutor in this unit and finally the overview of the tutor.

5.4.1.1 Description of the unit

The unit which AC tutored was a postgraduate unit and therefore all the students who studied the unit had previous degrees. AC's online unit was the unit which was available within the Gauntlet educational environment. (The description of the Gauntlet educational environment was presented in the data collection method section 3.3.3.3 Gauntlet). It was a unit which was compulsory in a number of degree programs at the university.

According to the unit coordinator, the unit was designed based on constructivist principles of teaching and learning. The environmental factor, *Community*, was a dominating theme throughout the semester. Students were placed in groups while content materials, resources and tasks were presented for the groups to interact with. This was done to encourage students to co-construct knowledge for themselves with the assistance of the other students as well as with the guidance of the tutor of the unit. She stated that "They really do co-construct knowledge. They talk to each

other, read and edit each others work and build their understanding of knowledge from various places including the discussion boards." The students were required to cooperatively complete biweekly group assignments and individually complete an end of semester assignment using the content material provided in the unit which showed their mastery of the unit material.

The *Design / Pedagogy* factor was evident through the emphasis on group work. It was used to emphasize the importance of group work and communication in the unit. The unit coordinator stated "Part of the reason for fortnightly assignments is to push the progress of the group work" and she was "pushing group work to model a research team." The students within each group took turns leading the group for each assignment. They received a grade according to the work submitted by the group so everyone received the same grade.

The assignments the students were required to complete were quite consistent in nature. All the group assignments dealt with particular aspects of the unit material and needed to be presented in specific ways. The end of the semester individual assignments had more freedom for students to approach the content from a unique perspective. The individual assignments demonstrated a cumulation of the skills students learned throughout the semester and every student was limited to the content materials however there was a plethora of material so every student was able to take a fresh approach which was not necessarily similar to any other students' approach. This led to many different characteristics for the assignments as students had the flexibility to take a wide view of things while others chose to have a more focused view.

The unit coordinator was very focused on group work and educational communities. She commented "we learn so much more we need to be exposed to peoples thinking and ideas." She held the belief that working in groups can be a powerful learning environment if it is handled correctly in a social constructivist environment. He remarked that learning "is not a solo journey but is a group journey." The unit coordinator felt that the size of the group affected the opportunity to enter into discussion with the others in the group. She felt that the smaller the group, the more chance for meaningful active discussion can take place. On the Technology

Generations in Distance Education and Open Learning scale (based on Oliver and Grant, 1994, p. 1), this unit had a high level of learner independence and a high level of instructor and learner interactivity, and would fit between email and a computer mediated communications unit.

According to the unit coordinator, the *Student Responsibility* factor was considered because the unit was designed on the principle that students were responsible for both their own learning and their engagement with the material. She remarked "the whole notion of developing that research community is a fundamental part the unit [sic]." Therefore, the unit was built around communication and the interaction of the students within the groups grappling with the content. The unit coordinator explained the outcome of the unit to have the students become more knowledgeable in this field through engagement with the content and the people in the unit.

The online environment this unit was designed to provide the students asynchronous flexibility. According to the unit coordinator, "The asynchronous nature of the discussion boards in terms of adding to the social construction of knowledge is invaluable." This allowed them to use time management skills as they could work when they could manage. The asynchronous nature of the unit demonstrates one of the strengths of this online educational environment, the flexibility study schedule. One student commented that she "Prefers online work because there is less scheduling in an asynchronous environment." The limit imposed upon this flexibility was the biweekly group assignments and the negotiations between group members for intra group schedules. An example of intra group negotiations and dealing with the assignments was the posting,

> Re: hello ***** (student name)
> Posted by ***** on Mon, 29 July 2002, at 7:31 p.m., in response to hello *****, posted by **** AND *** on Sat, 27 July 2002, at 3:31 p.m.
> Hi, *** and ****!
> I'm currently working with the materials available on the Internet.
> Does the CD have anything that isn't available there? Let's get started!!
> I think you are 8 hours ahead of me, so doing "real-time" chats may be a challenge, but I'll do what I can from my end. The only thing I ask is that I NOT be the leader for Topic number 2, due August 30--I will be moving from ******[one continent] to ******[another continent] (at which time there will be 14 hours difference in our time zones!) and will be in the process of travelling from August 18-23. I WILL be in touch with my parts of the assignment, but just to be on the safe side, one of you would be a safer bet for making sure the assignment is in on time.
> What else should I be telling you? Looking forward to working with you,
> *****

One identifying factor in the unit was the voluntary face-to-face workshops which were offered every second weekend for students to attend. These workshops covered a wide variety of intellectual matters including technical issues, the introduction of unit specific software and encouraging informed academic discussion. The workshops allow students to meet fellow group members and therefore *Interaction student / tutor* and *Community* affected AC's *Process Facilitation* capability in a different way than the other tutors in this study. One student commented that she "Liked the design [of the unit] because there is face to face lecturers." There was also the added responsibility for transmitting information to group members who were not able to be present for face-to-face meetings. An example of the public nature of this responsibility was:

> Attn: *** & **** (student names)
> Posted by *** on Sat, 27 July 2002, at 3:30 p.m.
>
> Hi *** & **** (student names),
> Well here I am in the first class and I have taken lots of notes for you which I'll email during the week. We are working together in Group A. 4% of this unit relates to collaboration so we have to use our bulletin board. To do that click on bulletin boards and go to group A...there is a message for you there.
> *****

Since its inception, the unit had evolved into an online unit from a face-to-face and an external unit. The FDC had a great deal of contact with the unit and therefore formal feedback mechanisms for quality assurance were in place. There was no formal system in place for the evaluation of online tutors as the university has nothing in position to deal with this issue. Informally quality assurance was measured by monitoring the satisfaction levels of student postings on the discussion boards and online forums, examining the quality of student work, and simply having individual conversations with the students regarding the unit.

The *Technical Milieu* of this unit included technical challenges such as when students posted comments to the wrong discussion board. These situations happened infrequently because of the efforts of both the tutor and unit coordinator using their *Technical Knowledge* capabilities. The unit coordinator remarked that "IT is always a difficulty in an online unit." This meant that students had little disruption to their learning as a result of the delivery method. Therefore students spent time learning

and interacting with others in the unit rather than dealing with problems often associated with the delivery of distance education. This unit was considered a success because the unit coordinator said she "knows the results are better [in student success] now as she checks the responses to questions from 3 years ago."

5.4.1.2 Unit design

The Gauntlet environment was specially created with functionality to fit with the design of this unit. The assignments and workshops were designed with dual purposes. The first was to present the content so that students could achieve a level of mastery by the end of the semester. The second purpose was to have the students interact with each other collaboratively in an electronic educational community.

There were three versions of the unit available to the students. There were the Gauntlet environment, the CD-ROM and a paper-based version. This unit had been offered in an online form previously and there were minimal institutional and technological issues which arose. The CD-ROM containing all the unit materials was received by the students well before the semester started. There were no discussion board postings which mentioned any problems accessing any information. The Gauntlet environment was identical to the CD-ROM and the material did not change during the semester. The students were also able to request a print version of the material. The print material was also identical to the CD-ROM and the Gauntlet environment. Therefore, the students were able to access information because technical and institutional procedures worked effectively.

The unit coordinator believed the Gauntlet environment version was the version she preferred the students used. She felt there was a logic in the instructional design which is not easily transferable to paper based delivery. She stated "The logic of the online version does not come across in the print version." The lack of hyperlinks forced the material into an arbitrary order which the Gauntlet environment material did not have. Both electronic versions also had materials such as spreadsheet files and movies which were much less valuable in a paper based format. However, she felt that "The print version is more portable and the students will carry it around and use it regardless of whether it is more or less interactive than the online version."

The CD-ROM version had everything the Gauntlet environment version had except access to the discussion boards, which were an important part of the instructional design of the unit in the coordinator's opinion. The Gauntlet environment version designed with everything the unit offered, but there was the potential problem of Internet access. Some locations had rather limited Internet access which was a potential problem for some students.

The flexibility normally associated with online education regarding the updating of materials was not used during the semester. The *Institutional Milieu* was involved with the conscious decision to have absolute consistency between the 3 versions of the unit. There was a difficulty with updating the online material which was not as simple as uploading (FTPing) the new material to the website. The unit coordinator did not have access to the website and had to rely on institutional staff to update the site. She commented that "There are layers of administration which have been put in place which make things more difficult." This was part of the institutional milieu and was not an easy process even though the actual updating was a standard file transfer.

5.4.1.3 Notional role of the tutor

The role that the online tutor was expected to fulfil was a multi-faceted one. The tutor was expected to be an expert in how learning takes place. She was also expected to be a reflective practitioner who could motivate students. Another facet of AC's notional role was using the capabilities *Content Expertise,* Technical Knowledge and *Course Management.* She was expected to have enough knowledge to answer student queries on a variety of areas like technical challenges, institutional information and unit content.

The online tutor notionally had great *Process Facilitation* capabilities including interpersonal and counselling skills. AC was seen as a role model for the students to follow, both in online behaviour and academic success. Facilitating online learning communities and small online groups within a larger learning community was another part of AC's role. All these roles involved the *Interaction student / tutor* factor because interpersonal contact and accessibility was a huge part of the

workload in this tutoring position. An example of AC keeping in close contact with the students was:

Re: its working AC thanks
Posted by AC on Wed, 21 Aug 2002, at 8:58 a.m., in response to its working AC thanks, posted by ***** (student name) on Tues, 20 Aug 2002, at 6:26 p.m.

Hi again ***** (student name),
This is great news. Glad it's all working now and thanks for sharing that information with the group. As you say, it will be helpful for others to see how you went about solving the problem.
All the best,
-AC

The intellectual equality of this online tutor position and the online unit coordinator in this unit was unique in this study. As one student put it, "the unit coordinator and AC have different styles of lecturing, they work well together and they don't step on each others toes." The coordinator made every effort to have the tutor and the coordinator appear equal in the eyes of the students. The coordinator always used phrases to include AC such as, "AC and I think..." She stated that the tutor must be reliable and able to be depended upon. This reliability is the theoretical professionalism which was assumed by many students and coordinators. The way the tutor and unit coordinator roles was explained to the students was:

Re: re: contact with Tutor and K team
Posted by AC on Mon, 12 Aug 2002, at 5:12 p.m., in response to re: contact with Tutor and K team, posted by ***** (student name) on Mon, 12 Aug 2002, at 3:53 p.m.

Hi *****,
Thanks for your message on the Bulletin Board. Just to put your mind at rest and to answer your questions ...
Firstly, **** (unit coordinator) and myself are co-tutors for this unit so we will both be your tutors. You will probably notice that we take it in turns to "person" the bulletin boards during the week. We also take it in turns to mark your mini-assignments. That is **** (unit coordinator) will mark Teams A-F and I will mark Teams G-L one week and we will swap around the next week. So, feel free to ask **** (unit coordinator) or myself any questions.
Secondly, I can see that you and ***** (different student) have been communicating via the Team K Bulletin Board but that ***** (another student) has yet to link in. **** (unit coordinator) and I are also attempting to contact her so we will let you know when we do. In the meantime, you and ***** (different student) could begin to work together to plan and complete the first mini-assignment. This does not require you to use SPSS in case you were worried about that side of things.
Hope these comments assist you.
Regards,
-AC
*** (unit name) Tutor

5.4.2 Tutor overview

The overview of the tutor, AC, will be presented in three facets. A description of the tutor will be presented first. A presentation of the beliefs held by AC is presented next. Finally, an account of AC's personality completes this section.

5.4.2.1 Tutor description

Like all the online tutors in this study, AC was handpicked to tutor this online unit a decision which was made of the factors *Subject Epistemology, Tutor Experience* and *Tutor Personality*. AC was a tutor who had an education background including formal training as an educator. She had experience tutoring this unit in the previous semester and she actually studied in the unit when she was a student. AC also exhibited expertise in the content area of his unit. The unit coordinator stated that one of the reasons AC was chosen to tutor this unit was for her knowledge in this area.

There were a number of reasons why AC chose to tutor this unit which involved the *Tutor Personality* factor. She had enjoyed tutoring this unit previously and desired for further experience working in an online education environment. Being a career educator, AC said in the interview that she believes technology is changing education and she wanted to develop her knowledge about how education was changing. AC mentioned that she loved working in an online computer environment as she saw so many possibilities for learning that she wanted to explore. The flexibility which online tutoring provided AC the ability to work when she had time so that the tutoring could fit into the rest of the commitments in her life. AC commented that she "Had an interest in the content of this course" and that she "would develop her own knowledge of [the content of the unit]." AC also felt "It was about what she had to give and what she had to learn." Another determinant for AC in her decision to tutor this online unit was the financial renumeration which was being offered to do the tutoring. The unit was a good fit for AC as she was available to tutor the unit, the unit needed a tutor and she had successfully worked with the unit coordinator previously. The final reason AC mentioned that she decided to tutor this online unit is that the unit coordinator and another professional in the Faculty personally asked

her if she would tutor the unit. This request by two professionals she respected was important to AC in her decision making process.

5.4.2.2 Tutor beliefs

AC discussed how she found learning about the students' and their expectations for the unit an interesting experience. AC enjoyed helping the students achieve success without "spoonfeeding" them. She also found it enjoyable to see students develop as they interacted and came to terms with the unit materials and the people in the unit.

AC developed a number of attitudes and opinions during her experiences tutoring online units. She discovered that *Management of Teaching Processes* needed to be addressed because while tutoring online, it was easy to "blow out your hours." This was regardless of the fact that she was paid for a pre-determined number of hours and there would be no extra compensation from the institution if she worked more than that. AC admitted that dealing with *Interaction student / tutor* and *Student Responsibility* factors, she had some difficulty establishing boundaries for what her responsibilities were compared to the responsibilities of the students. One thing AC felt she needed to do was to "wean students off of the tutor and onto other resources like other students." However, she was aware of the "risk of being just a teller of knowledge" especially when she believed that there is a cognitive and emotional aspect to her tutoring. An example of AC's attempt to demonstrate how she could meld personal aspects of her teaching with student responsibilities was,

Introduction and notes from Saturday's workshop
Posted by AC on Mon, 5 Aug 2002, at 2:13 p.m.
Hello everyone,
I'd like to firstly introduce myself and, secondly, to offer to email some notes to those of you who couldn't get to the workshop on Saturday.

Introduction

I'll be working with **** (unit coordinator) to teach this unit, ******, throughout the semester. My background is in education - made up of teaching in schools and at universities. My main interests are teachers' and students' beliefs, educational research and online course design. Currently, I am working on my PhD and co-teaching this unit. My phone number is (**) **** ****, my email address is AC@***.edu.au and my office is located in ******* (a few doors along from ***** [unit coordinator name] office).

Workshop notes

As part of Saturday's workshop, we worked through the instructions about how to place your mini-assignments on the ****** (unit name) Bulletin Board. If you would like a copy of these notes, please email me at AC@***.edu.au and I will email a copy of the document as an attachment. Otherwise if you are able to come onto the **** (place name) campus, I will leave some copies of the notes outside my office.
Look forward to meeting you all face-to-face or online!
All the best,
-AC
****** Tutor

Another opinion AC expressed during the interview which exemplified her *Process Facilitation* capabilities was that "quality online learning is going on but it isn't being reported enough." Part of this belief stemmed from her exploration of the literature regarding online education. AC believed that tutors needed to let students "know what you know and don't know." She also felt there had to be authentic learning created through the connections between the unit content and the students' lives.

The *Interaction student / tutor* factor was important for AC as she mentioned this a number of times in the interview. AC was a supporter of group work and mentioned how powerful a method it was in this asynchronous environment. AC remarked that "group work is a powerful learning tool if done right." AC believed this environment allowed for a great deal of reflection which resulted in a deeper understanding of the unit materials. AC was also careful to mention her beliefs regarding the emphasis she placed on face-to-face contact. Which included how she felt it was integral to the success of the unit. As AC put it, "students want to meet tutors to ask if things are okay."

AC's fundamental belief about tutoring was evident in her statement that she was a social constructivist. She wanted her students to construct knowledge in a community of learners. To facilitate this belief, AC had as much interaction between the students as she could given the design structure of the unit. This is evidenced by her actions when she was "allowing small groups to merge to promote more discussion.' The fact that AC's beliefs coincided with the beliefs in which the unit was based aided her immensely in her role as tutor.

Another aspect of *Interaction student / tutor* was that AC preferred the public nature of the discussion board in this unit. She believed that the private interactions with email and the telephone did not translate as readily into potential learning experiences for others. AC stated that she tried to "encourage students to respond to other student postings on discussion boards to answer their questions." She also "left messages on discussion boards in hope other students might respond before she answered." She also stated that the less public the interaction, the more labour intensive it was for her. AC commented that she needed to "be careful of the black hole of work" that private interactions could lead to. She found that private face-to-face interactions ended up being even more time consuming than electronic interactions. In fact, there was not even any content she could specifically use for other students' consumption from a face-to-face interaction. An example of the use of the main discussion board to communicate messages which might be of interest to the whole class and as a potential time saver for AC looked like this:

Re: trouble downloading Brian's spss files
Posted by AC on Tues, 20 Aug 2002, at 3:45 p.m., in response to trouble downloading Brian's spss files, posted by ***** (student name) on Tues, 20 Aug 2002, at 10:00 a.m.
Hi *****,
Glad to hear that you are getting practice using SPSS - inputting, labelling data, etc.
I've just downloaded one of Brian's files (that is, the trial data matrix that is labelled as "Trial_data.spp"), so I'll include the instructions below regarding how I managed to open it (on a PC).
I entered the Postgraduate room and then opened Brian's drawer of the filing cabinet and clicked on the "Trial Matrix" tab. Hold your mouse over the underlined link that reads "Trial Data Matrix", hold down the shift key and then left click on the link.

In the "Open file" dialogue box, make sure that the "All files" option is selected in the "Files of type" window at the bottom of the dialogue box. The file that you have downloaded (Trial_data.spp) should now be visible. Double click on this file or select it (by clicking on it once) and then clicking on "Open".
I hope these instructions have helped you out, *****. If it still doesn't work, please call me on (**) **** **** or *** (unit coordinator) on (**) **** ****.
All the best,
-AC

5.4.2.3 Tutor personality

AC was an experienced educator who has achieved success throughout her teaching career. She had a great deal of experience in educational settings as the person in charge, be it as a teacher, tutor or lecturer. AC also knew the differences between online tutoring and face-to-face tutoring. She was able to thrive in the online environment given the comments made by the interviewed students and the unit coordinator.

Through *Tutor Experience*, AC was aware of her capabilities as a tutor. Confidence in her abilities allowed AC to be honest with the students as she was willing to say "I don't know" when students asked a question she did not know the answer to. AC did demonstrate her *Process Facilitation* capabilities by having strategies in place to handle situations by guiding students in a direction where they might find an answer. The unit coordinator remarked that AC was an effective tutor and "Effective online tutoring is about shifting away from answering it all and helping them become independent while retaining support for them and the use of ICT allows you to do that very effectively." AC would also discuss things with the unit coordinator and other contact people she had met at the institution to attempt to find an answer to the question. According to the unit coordinator, AC "knew when to answer questions and when to refer them to [the unit coordinator]."

AC had the ability to express ideas clearly using electronic communication. She felt this was especially valuable at the beginning of the semester when students were attempting to log in and introduce themselves. The calming affect AC had with her clear, effective communication was noticeable throughout the semester as students became selective about what questions they asked to whom. AC and the unit coordinator both stated that students would ask AC certain types of questions while asking the unit coordinator other types of questions. As AC was still a student at university while she was tutoring, students felt it was safer to ask AC more personable questions. An example of a typical posting by AC was:

Re: Thanks AC
Posted by AC on Tues, 13 Aug 2002, at 3:53 p.m., in response to Thanks AC, posted by ***** (student name) on Mon, 12 Aug 2002, at 8:57 p.m.

Hi ***** (student name),
Yes - you are right. The first mini-assignment will enable you to get an overview of what is going in and has been going on in Kingston - based on the evidence from Brian's interviews and the newspaper articles. As you can see from the other mini-assignment topics, there will be opportunities later in the semester (and in the final assignment) to suggest ways that the research study could be improved.
Hope this helps,
-AC

5.4.3 Student overview

The overview of the students in AC s unit will be presented in three facets. A description of the students will be presented first. A presentation of the behaviours of the students is presented next. Finally, an account of the experiences of student completes this section.

5.4.3.1 Description of the students

The majority of the student enrolled in this unit were female adult postgraduate. The students were not from any one academic discipline as this unit dealt with interdisciplinary material. The ratio of students to staff was less than the 25:1 which is the norm at this institution. For many of the students, this wa the first semester of their postgraduate studies so the students had that nervous excitement which many new graduate students have. During the first face-to-face workshop, many students wrote down everything AC and the unit coordinator said. By the last face-to-face workshop, students were much more selective regarding their notes.

hello everyone not in Australia
Posted by ***** (student name) and **** (different student) on Sat, 27 July 2002. at 1:51 p.m.

Hello all,
***** and I (thats **** BTW) are sitting here in the first class of *** (unit name) here at the ****** (place name) campus of ****** (institution name) in *** *** (place name), Australia. Is anyone on line right now as we could say hey.

A bit of a bio from us both... over to you *****...
Hello all I am a nurse in the perioperative setting (theatre) doing my masters in clinical practice. Looking forward to this unit.
Thanks *****.

Me I am what is commonly known as a crime analyst . Crimes relating to serial offences such as rape, stalking, murder etc.
Don't get spooked guys I'm just like you getting my masters at ****** (institution name) in Justice.
Over to you guys. Oh and ***** and I are looking forward to finding out who is in our groups.
cheers, ****. and *****.

The group of students had members living both near and far from the institution. Many of the students enrolled in this unit were a long distance from the institution. These were students who would have been traditionally seen as external or distance students. The geographically local students could be described in two distinct ways: the larger group was studying part time, working full time and lived in the local area; the smaller local groups were international students studying full time with many of these having a language other than English as their mother tongue.

The part time students were dealing with all the aspects of adult education, especially the non-educational situations in their lives like employment, family commitments and the like. For example, health was another concern as one student stated that "the rest of group was communicating but her eyes hurt so she didn't send as many emails to them as they did." *Student Expectations* was evident as they said that the online asynchronous nature of the unit appealed to them because they were looking for flexibility which could fit into the rest of their lives. Another student stated that in this unit, 'the student has more control of their learning." The unit coordinator stated that many of the cross faculty students mention this as a reason for enrolling in this unit. This was a compulsory unit for the inter-faculty students so they did not have the options to enrol in this unit.

5.4.3.2 Student behaviours

The students had three main choices in this unit. Each dealt with a level of interaction with aspects of the unit. These aspects included the interaction with the unit materials, between student to student as well as student and tutor. The main choice students had in this unit regarding material was deciding what they worked from, be it the online, the CD-ROM or the print based material. Each of the three formats had strengths and weaknesses which students may or may not have been aware of even though the content was the same.

The factor, *Community*, was apparent through the student-to-student interaction which occurred in a number of venues. One student stated "Students will have more opportunity to interact with each other depending on the nature of the unit." The students interacted with each other a great deal through the discussion boards and through the voluntary face-to-face workshops. Many students preferred the face-to-face discussions because of all the familiar non-verbal cues received during interactions. Some students preferred the online communication for its asynchronous properties. One student said "Online provides us opportunity to read and we have more time to think and rewrite our opinion." These allowed for careful reading and reflection at the readers' pace rather than at the pace of the speaker in a face-to-face conversation. English as a second language speakers were mixed in their opinions about this as some wanted to practice their oral English skills with native speakers and others wanted to concentrate on the content of the unit and not focus on their English skills. As one student put it, "the online communication forces us to work on what we really need and we don't waste time talking."

The students made the decision regarding when and to what extent they would interact with the other students. Some students worked on the unit everyday judging from their postings on the group discussion boards. Others seemed to create unique schedules for themselves, such as Thursday nights after 8pm and Sunday mornings before 10 am. This created the need for strong group communication and understanding. There was some evidence that students became anxious, stressed, upset or concerned about the amount of discussion board postings for their group, be it either too much or too few. One student hesitated to send email or post to the discussion board because of what she saw as the formal nature of the interaction.

This student believed that talking and brainstorming was less formal than email and posting so she initially made every attempt to engage her group members in a less formal mode of communication.

Many students mentioned the independence involved in online study as they were required to take responsibility for their own learning. One student said, "Students have to be more responsible and more brave." For some students, this was the first time in their academic life they did not have a mandatory class every week. This experience demonstrated the distinction between *Student Expectations* and *Student Responsibility*. They were forced to come to grips with the unit material because no one was really sitting down with them showing them how to do things. An interviewed student mentioned that the online material was very clear and understandable compared to material in other units. She mentioned that this was probably a compliment in regard to the instructional design of the material rather than her ability to understand the content of the unit.

The level of *Interaction student / tutor* varied depending on the student. Some students barely communicated with AC unless she initiated the contact. There were other students who attempted to telephone AC or the unit coordinator everyday. The majority of the students were somewhere between these extremes.

5.4.3.3 Student experience

In the course of this unit, there were several challenges which affected their progression through the unit. These challenges included the factors *Student Expectations*, *Community* and *Interaction student / tutor*.

There was a difference between the expectations of the students and AC's expectations. One student said "Online lecturers just sit and wait for students to ask questions once material is up." The monitoring of student work on the discussion boards and answering individual queries took up a great deal of time. Some students did not realize that in a traditional face-to-face classroom, AC could have answered one student and everyone would hear the answer. With private email, the students were phrasing things in such a way as to require an individual response without the

tutor being able to publicly broadcast the answer. This change in the phrasing of questions between public face-to-face contact and private email resulted in many hours of extra work for AC.

Student Expectations affected AC's *Evaluation* capabilities through the feedback students received from the tutor because this was an area of dispute among the interviewed students. One student felt feedback was not timely enough to help the students when they needed help and it did not include all the possible information. Another interviewed student thought the feedback was excellent and very timely. She stated that "You don't expect the tutor to be answering right away because they might not be at their desk or in their room."

A part of the *Technical Milieu* included a few technical frustrations which students encountered that included mis-using the CD-ROM version of the unit as the students felt they could not access all the materials the Gauntlet environment version could. This resulted from several students not understanding the instructions regarding the CD-ROM version and trying to access the discussion boards through the CD-ROM even though they were not connected to the Internet. Having students posting to the wrong discussion board or making multiple postings of the same message were some of the minor frustrations which were ironed out after students had experience with the unit. An example of a discussion board difficulties and initial student ability levels was,

Re: Bulletin Board asleep??
Posted by ***** (student name) on Wed, 28 Aug 2002, at 11:53 p.m., in response to Bulletin Board asleep??, posted by ***** on Wed, 28 Aug 2002, at 11:49 p.m.

●h dear, I was able to post a message on the general bulletin board but not H team's. This is a problem as I need team members to read my contribution. Help, **** (unit coordinator)?
I will try again in the morning.

problem solved, sorry!!
Posted by ***** (student name) on Thurs, 29 Aug 2002, at 10:04 a.m., in response to *** (unit coordinator)/ AC: Unable to post messages on H team bulletin board, posted by ***** on Thurs, 29 Aug 2002, at 9:54 a.m.
I think it was because I tried to copy/paste the entire message from a word doc, when I added a comment at the top of my paste it was happy to be sent. Learn something every day!!

*****

Another aspect of the *Technical Milieu* was the initial ability level of the students was a source of concern for the unit coordinator as there is not a pre-requisite for this unit in either academic knowledge or technical ability. A certain level of academic ability is expected when a student enters graduate studies and this was a shock for some students who had completed their previous education years ago. The level of technical ability varied as some students used computers in their daily lives while others did not. There were some students who did not know how to word process and had never sent an email before the unit began. This influenced the amount of support students needed for the technical aspects of the unit thereby determining the level of *Technical Knowledge* that was required by AC. This also influenced how much they could interact with the others in their groups. An example of a request for technical support was:

**** (unit coordinator) need help getting spss from net
Posted by ***** (student name) on Mon, 29 July 2002, at 5:35 p.m.

Hello ****,
I'm here at ****** (place name) post grad room (8.118).
I assumed that the version of spss on my desktop here was usable. However while working my way through week 2, went to download Brian's file and have now received a message reading something like 'your version of spss has expired'.

Question:
What is the address to download the 6 month trial version of spss onto this computer for the time being. By the way I am connnected permanetly to the net here which was a real surprise. I was using the CD not expecting to access the messages and profiles when to my delight up they popped. I am unsure how to access the videos from the CD without the system reverting to the internet version. I remember you telling us on Saturday that it is better to view them via the CD as its quicker.
Thanks, *****

Student Expectations and *Student Responsibility* were noticeable in part because group work was initially a cause for concern for many of the students for a variety of reasons. Several assignments had enough of a technical component that electronic conversations were made difficult if one of the group members did not adequately understand the concepts in the previous assignments. Students did not necessarily have good online communication skills and found it difficult to share ideas with other students. Also, many students did not want to work in groups because other people would influence the grades they received.

Re: assignment 1 - task 1group E
Posted by ***** (student name) on Fri, 16 Aug 2002, at 10:54 p.m., in response to assignment 1 - task 1, posted by ***** on Fri, 16 Aug 2002, at 10:49 p.m.

To whom it may concern?????????????
It was not my responsibility to post this assignment, however I managed to cut and paste it onto the buetin board in time!!!!!
Thankyou *****

It was mentioned by the students that they enjoyed the online group work more after the first assignment had been graded and returned. Their experience with the first assignment led to a comfort level and acceptance of the positives associated with the process. The reflection and getting to know their group members played a larger part of the educational environment after initiation to online learning was completed. This experience of completing assignments as an online group allowed the students the security of knowing that they were on track. AC managed this by giving them feedback on the content of the unit rather than just communications regarding technical situations and introductory messages.

Throughout this unit, *Student Responsibility* for their learning was a major theme. As one student put it, "Students have to be more responsible because there is no one showing them how to do it." Within this new role is the student decision regarding how much time they were willing to put into the unit. When combined with the required group work, this had the potential to lead to difficulties when group members did not see eye to eye on levels of quality or interaction between group members. According to an interviewed student, this was not a unit where people just "did their own thing away from each other." The very interactive nature of the unit led to the need for some students to modify their learning behaviour. "Some people will not ask for information but will look for info from other people" according to the unit coordinator. An off shoot of students' taking more responsibility for their own learning was the reduced frustration regarding the pace of the learning because they had more access to other people and materials.

lAsT workshop
Posted by ***** (student name) on Sun, 25 Aug 2002, at 10:58 p.m.
Hi AC and **** (unit coordinator name),
May I know, will we have another team member in team "J"?
Also can ***** (different student) and I have a E-copy of your handout for last workshop. I am sorry that I didn't attent this class last week, as I went to a wedding party.
Look forward your reply & thx
Cheers
*****

The quality of the communication in the unit was something the students repeatedly commented on. One student stated that she would only take another online unit if the level and quality of communication between the students and the tutor was equal to this unit. Clarity was a key point in the interviews with the students as they mentioned that reading guides and materials needed to be clear and communication from AC and the unit coordinator needed to be very clear so there was less of a chance for misunderstandings.

5.4.4 Tutor capabilities

This section involving tutor capabilities is divided into three segments: a description of the actual role AC played as the tutor, a description of the situations encountered in the unit with a focus on the community interaction and discussion board, and finally a connection of AC's capabilities to the capabilities and factors presented earlier in this paper.

5.4.4.1 Actual role of the tutor

AC's role was markedly different from the other tutors in this study because of the working relationship she had with the unit coordinator. AC was considered to be an equal to the unit coordinator by the students and the unit coordinator. The technical circumstances which did not allow unit materials to be modified during the semester reduced the difference in the tutors' and unit coordinators' roles. This was the second semester AC and the unit coordinator had worked together on this unit and they had formed a strong teaching bond. The unit coordinator usually used the phrases "AC and I think ..." or "AC and I have decided ..." regarding any public decisions in the unit. The strong relationship between both was evident throughout the semester.

The actual role of the tutor in this unit involved what the unit coordinator described as "a surprisingly big job, bigger than face to face". This required AC to deal with a number of different aspects of her role with an attempt to reduce the workload she faced. The sheer volume and nature of the communication required by the students

was the largest aspect of her role as tutor which were examples of *Management of Teaching Processes* and *Interaction student / tutor.*

The communication in which AC engaged was not limited to instructional interaction with the students. In addition to the interaction regarding the content material, there was also some welcoming, social interaction, technical support, counselling and bureaucratic explanations which demonstrated her *Process Facilitation,* and *Technical Knowledge* capabilities. Interaction between AC and the students occurred individually in non-public venue in addition to the discussion boards. The interviewed students mentioned the number of encouraging messages AC sent to each of them by email. She stated that "Important for online tutors to send encouraging message to students." The motivation of students was a priority for AC as she knew about the potential isolation and frustration of being an online student.

Underlying all the communication which took place, AC projected a professional persona as well as demonstrate a level of competence and confidence. The clarity of the communication was noted by an interviewed student who said, AC "provided clear communication because you can't see her face." They stated that AC had the ability to simplify concepts and express them in an electronic format, regardless of the concepts involved.

AC was responsible for monitoring half the group discussion boards as well as sharing the main discussion board with the unit coordinator. The capabilities, *Evaluation* and *Process Facilitation* were obvious as this included ensuring the groups knew what they were doing and providing feedback on their work. The small groups required a different type of interaction on AC's part than with the class as a whole. The *Facilitation of Learning* was apparent as AC guided the small group interaction based on contribution levels of the participants, providing directed feedback on assignments and evaluating the participation on the small group discussion board. The whole class interactions were more relaxed in their use of language. AC used the main discussion board both to provide general information and to pose questions for all the students to consider. She viewed the group discussion boards as working space while the main discussion board was more of an information sharing location.

The monitoring of student progress included keeping track of all the students in her care. According to the unit coordinator, "it is easy for a student to disappear with no face-to-face contact" [in an online environment]. AC also "salvaged enrolments" by helping students decide to stay in the unit when they felt frustrated especially at the beginning of the semester. She made the students feel like they were real people, rather than "just students."

An aspect of *Tutor Personality* was that AC also volunteered her time to tutor in the face-to-face workshops. Both AC and the unit coordinator felt the workshops were vital to the success of the students even though they were not funded. The volunteering of time for face-to-face workshops by AC was outside the norm for the tutors in this study.

There were technological challenges within the *Technical Milieu* AC had to deal with. According to the unit coordinator, AC successfully handled the immediacy of the technical questions students asked through her *Technical Knowledge.* This was especially timely if the students were inquiring about email because there was a difficulty in contacting the student without email. AC helped "helped them learn how to use the discussion board and that part of it but email she helps a bit and puts them through to the help desk." The technology used in the unit forced AC to deal with the asynchronous communication and student expectations about immediate responses to messages. AC's patience and flexibility was obvious during the face-to-face workshops and in postings to the discussion boards. She was aware that not everyone learned things at the same rate, especially regarding some of the technical software used in this unit as she was individually "assisting students to learn."

AC described the understated part of her role as an online tutor as "the usual stuff". This usual stuff included the teaching skills of knowing how learning takes place and being a reflective practitioner. There was also her ability to shift student dependence away from the tutor and aiding them as they became more independent. The unit coordinator stated that AC was successful at "helping them become independent while retaining support for them." The final usual stuff AC mentioned included being a content expert, having good people skills as well as the ability to set limits

which were acceptable for everyone in the unit as was evident from her reflective question, "what is a reasonable amount of time to spend on each student?"

5.4.4.2 Situations encountered

There were a number of situations in which AC encountered. There was one student who monopolized AC's time with inappropriate behaviour and constant requests. This student was what the unit coordinator described as a "destructive personality." The student appeared to lash out at others whenever the learning process frustrated her and another student in her group was the focus of her negativity. This inappropriate student required a gentle yet firm touch. Her negative interactions led to informal ostracization by the other students who did not want to deal with this student. The focused upon student in her group also required more attention from AC as he was prepared to withdraw from the unit to avoid this inappropriate behaviour. Both students completed the unit but it took a great deal of effort, compassion and flexibility on the part of both AC and the unit coordinator to achieve this outcome.

Management of Teaching Processes and *Community* were factors when AC had to deal with less dramatic student groups which did not work well. Some groups tried to remove members and some individuals decided to quit groups in order to work individually. The unit coordinator mentioned that without ever meeting their groupmates, "students say they can't work with a group because they are a high achiever and the group will pull them down." AC called this "putting out fires" and she did not enjoy dealing with the conflict between the students. However, she was very good at solving these problems without letting any irritation or frustration show through in her words or actions.

A large situation which AC overcame was the struggle with time management within the factor, *Management of Teaching Processes.* She was required to deal with student expectations regarding quality and quantity of contact as she observed that "they can contact you all the time." The discussion boards had thousands of postings during the semester which AC read and responded to when she felt was necessary. Combined with the unpaid face-to-face workshops, there was a great deal of high

quality interaction available to the students. However, AC had to manage the *Student Expectations* of students who pushed for more by telephoning regularly. AC remarked that "attention seeking can eat up a lot of your time." Several of these students also chose to ask AC questions rather than attempting to find out answers through other avenues like researching themselves.

5.4.4.2.1 Community interactions

Community interaction was mandated in this unit by the pedagogical commitment to group work throughout the learning process. Students had no option regarding working in groups as the biweekly assignments were based on grading a groups' work, rather than individual students' work. Therefore the community created in this unit was fundamental to student success.

Hello **** (student name)!
Posted by ***** (different student name) on Sat, 27 July 2002, at 3:22 p.m.

Hello there ****,
*** (another student) and I have just been informed that you are part of our group or team for the semester assignment, Group B. Since you are not present at the workshop we are curious? Are you based overseas, interstate or just had to work today?
Look forward to hearing from you.
Cheers *****.

5.4.4.2.2 Use of the discussion boards

The use of group discussion boards in the unit contributed to the creation of *Community*. The unit coordinator said "the whole notion of developing that research community is a fundamental part of the unit." Students were asked to use the group discussion boards for all correspondence regarding their group work. This included the sharing of files and discussion about the assignments. This enabled AC and unit coordinator to effectively monitor the progress of the groups. Every student in the unit had access to every group discussion board but only posted messages on their own group board. The unit coordinator stated that they "talk to each other, read and edit each others work and build their understanding of knowledge from various places including the discussion boards." The public nature of the boards allowed many pertinent questions to be asked by students who were allowed to share other students' work according to the unit coordinator. The unit coordinator commented "we learn so much more that we need to be exposed to peoples thinking and ideas."

She had modelled this after the spreading of ideas by presentation and publication of literature which has been successful in the academic realm.

An offshoot of the observation of discussion boards was that students asked a great deal of questions for other students to answer, rather than directly asking the tutor which happens in many online units (Brabazon, 2002). According to the students, they preferred to have students answer their questions for a variety of reasons. They ranged from not wanting to bother AC for an unimportant reason to worrying that some questions would show that the students' did not know something. Some students did not want to admit this to AC as they felt it would adversely affect their grade if AC suddenly realized that the student did not know as much as she previously thought they did.

the videos on the CDROM
Posted by ***** (student name) on Mon, 12 Aug 2002, at 8:14 p.m.

Hi, I cannot open the videos on the CDROM with my Windows XP program, and I am not allowed to view them from the online unit access.
Any ideas anyone?
Cheers,
*****.

The discussion board was an adaptable tool for the ESL students. Some ESL students preferred to interact via the discussion boards because they did not feel confident with their ability to understand spoken English. One ESL student said she "Understands online content better." The asynchronous nature of the boards allowed students to interact at their own pace in text form, rather than orally. An ESL student said "if you do group work face to face spontaneously the native speakers talk very fast and we need time to think and catch up what they are talking about." There was also an archival nature of the discussion boards which allowed students to review their own postings to better understand the manner in which others respond them.

The discussion boards were presented as a transparent educational tool which needed to be used enough to complete the work assigned to the students. There was no set amount of posts required by each student on the discussion boards. There were a number of types of interaction including social, posting questions, discussions and knowledge sharing.

AC and the unit coordinator introduced the students to the unit using the main discussion board. There was an attempt to make sure everyone obtained the same information regarding the particulars of the unit. An example of this is:

Hello and Welcome to ****** (unit name)
Posted by ***** (unit coordinator) on Wed, 24 July 2002, at 11:28 p.m.

Hello colleagues
Welcome to the *** unit. I am enjoying 'meeting' you through emails and reading the student profiles.
Don't be shy!! Find your name in the list and tell us a little about yourself.
We are a group of 37 at the moment - from three faculties. Such an interesting group of people to work with.
For those who can attend the workshop on Saturday, I am looking forward to putting faces to the names.
For those who cannot attend, we will post messages on the board to say hello.
You might like to be online at the same time, so we can start out conversations.
Cheers
*****

There were the introductory postings by students at the beginning of the semester. This was encouraged by AC to assist in creating a learning community. A typical introductory posting by a student looked like this:

Re: Hello and Welcome to *** (unit name)
Posted by ***** (student name) on Wed, 31 July 2002, at 2:57 p.m., in response to Hello and Welcome to *** (unit name), posted by ***** (unit coordinator) on Wed, 24 July 2002, at 11:28 p.m.
Hi Everyone and ***** (unit coordinator)
Just finding my way around this site for the first time today. Trying out the message board. I didn't make it to class last Saturday, but look forward to meeting some of you this week.
*****

Before the students accessed the group discussion boards, there was some use of the main discussion board to contact group members who had not responded to other forms of private communication, such as email. One such example is:

Looking for *** (student name)
Posted by ***** on Sat, 27 July 2002, at 3:27 p.m.
Hi *** (student name),

We have just been given our team allocations and you are in Team 'F'.
When you get this message, feel free to drop the team your contact details and we can let you know how the first tutorial went. We also need to formulate our strategy for answering the questions throughout the semester. Looking forward to hearing from you.
Regards
*****

5.4.4.3 Connection to capabilities and factors

Throughout this unit, AC tutored using capabilities and dealing with factors. Due to the learning environment AC was involved with, there was a focus on several capabilities and several factors which affect those capabilities. The capabilities required of AC as well as the factors affecting them will be presented below.

AC was required to use a number of capabilities in her role of tutor. Chief among these were sub-capabilities within the capabilities "Content Expertise", "Course Management", "Evaluation" and "Process Facilitation".

AC exhibited the sub-capability ""Content Expertise – Enriching Interaction" when she successfully triggered debate by posing intriguing questions. She was also able to encourage sound contributions from students in discussions. "Course Management – Management" was demonstrated when AC instituted effective time management strategies and handled both online and face-to-face class discussions. "Evaluation – Feedback" was evident throughout the semester with the vast amount of prompt, consistent and informative feedback she delivered to the students. The final capability had two sub-capabilities which AC displayed. In her interaction with the students and the unit coordinator, AC showed the sub-capability "Process Facilitation – Confidence." She was willing to admit her limits regarding the content of the unit. AC was always polite, respectful and demonstrated openness in her interactions, both online and in person. The final sub-capability was "Process Facilitation – Communication." AC exhibited this when she motivated and encouraged the students. She also initiated contact with students if she recognized the need to resolve individual situations. AC was also good at talking to the students in a way they would understand, rather than talking at the students using terminology they would not understand.

AC was affected by a number of factors in her role of tutor and the main ones are presented below. The state of the learning community was a factor which AC strove to maintain. She spent a great deal of time and effort in keeping the students interacting and provided support and feedback to them whenever possible. This ties in with the expectations of the students as they sometimes wanted more interaction with AC than she could deliver. There was also the concern with students who

expected AC to provide all the answers to them, rather than see where their responsibilities were. This weening of students off of the tutor was a distinct demonstration of the personality of the tutor. AC was able to balance her desire to help the students with her belief that students were responsible for their own learning. The design / pedagogy was also entwined with the state of the learning community which existed in the unit. The group work and multiple discussion boards definitely affected AC's capabilities during the semester. The final major factor which affected AC was an under theme of the unit, namely the interaction which occurred between the students and the tutor. AC interacted with the students both face-to-face and electronically. This mix involved a large set of communication skills both on her part and on the part of every student in the unit. This interaction affected how she worked with each individual, each group and the whole class.

5.4.5 Summary of AC

In summary, AC tutored a postgraduate unit which had been offered online previously. She was an experienced tutor while also being an expert in the content of the unit. During the semester, AC mainly demonstrated the following sub-capabilities: "Content Expertise – Enriching Interaction," "Course Management – Management," "Evaluation – Feedback," "Process Facilitation – Confidence" and "Process Facilitation – Communication." The factors which arose during the unit which affected her capabilities included Community, Student expectations, Student responsibilities, Design / pedagogy and Interaction between the students and the tutor.

CHAPTER SIX

6.0 DISCUSSION

The discussion chapter will address the research questions posed at the beginning of the study. The three secondary questions will be presented first. These will lead ultimately into the answering of the main question that will follow.

6.1 Secondary research questions

Three secondary research questions were asked in order to deal with the complex concepts presented in the main question on an individual basis. Asking the secondary questions allowed a venue for addressing the complexities of the main question in an orderly manner. The three questions were:

1. What are the main capabilities required by online tutors for typical text based online educational environments as perceived by the tutors, the students, the unit coordinators and an independent observer?
2. What are the factors that affect the capabilities required by online tutors and how do these relate to the critical capabilities as perceived by the main stakeholders?
3. Do the factors that affect online tutor capabilities modify the essence of the online tutor capabilities?

6.1.1 Secondary question 1

The first question was: "What are the main capabilities required by online tutors for typical text based online educational environments as perceived by the tutors, the students, the unit coordinators and an independent observer?"

This portion of the paper will present a list of the main exhibited capabilities followed by an illustrative example of each. The illustrative examples will be in

alphabetical order, rather than any supposed ranking of importance. The main exhibited capabilities listed below are a combination from the perspectives of the tutors, students, coordinators, and the researcher.

The main capabilities identified as parts of each of the five capability categories presented in section 2.3 Theoretical framework for online tutor capabilities. This required a listing of the sub-capabilities within each category. The fourteen main sub-capabilities exhibited by tutors were:

1. Content Expertise - Knowledge and Skills
2. Content Expertise - Enriching interactions
3. Course Management - Administration
4. Course Management - Management
5. Evaluation - Assessment
6. Evaluation - Feedback
7. Process Facilitation - Communication
8. Process Facilitation - Confidence
9. Process Facilitation - Disposition
10. Process Facilitation - Values
11. Technical Knowledge - Attitude
12. Technical Knowledge – Choice of resources
13. Technical Knowledge - Technical Pedagogy
14. Technical Knowledge - Technical Support

6.1.1.1 Content Expertise - Knowledge and Skills

The sub-capability of 'content expertise' was within the Content expertise capability. This sub-capability focused on the tutor exhibiting an obvious expertise in the content of the unit. Every tutor who took part in this study mentioned that they were approached for their position because of their expertise in the content area. The unit coordinator for Lauchlin and Margaret stated "the most important [tutor capability] is subject matter expertise."

6.1.1.2 Content Expertise - Enriching interactions

The sub-capability of 'enriching interactions' was within the Content expertise capability. This sub-capability focused on the tutor exhibiting an obvious ability to enrich student interactions with the content material of the unit. For example, Lauchlin mentioned that it was important to "be proactive" and "tell students about problems with the materials." AC talked about enriching interactions with her belief that "spoonfeeding results in surface level knowledge, while reflection results in more deep understanding."

6.1.1.3 Course Management – Administration

The sub-capability of 'administration' was within the Course management expertise capability. This sub-capability focused on the tutor exhibiting an obvious ability to administrate the unit. For example, William noted this topic when he discussed the steps required to administrate communication and feedback to students. He stated that all administration in his unit "must go through Flexible Delivery [Centre]." Catherine mentioned that she had been required to deal with the administration of student work as "assignments have gone astray previously."

6.1.1.4 Course Management – Management

The sub-capability of 'management' was within the Course management capability. This sub-capability focused on the tutor exhibiting an ability to appropriately manage their responsibilities in the unit, with a focus on time management. For example, AC had a time management theme throughout her interview. She stated that "they [students] can contact you all the time" and it is "easy to blow out time." She also asked time management questions like "what is a reasonable amount of time to spend on each student?" Benny agreed with this when he said "time management is more important for online tutors than face to face tutors."

6.1.1.5 Evaluation – Assessment

The sub-capability of 'assessment' was within the Evaluation capability. This sub-capability focused on the tutor exhibiting an ability to assess student work. For example, Margaret mentioned that an important part of her job was "marking assignments." This was put into context when she mentioned her concern about the way she was grading when "lower students passed assignments in first." William said that part of his role as a tutor was to determine "what is appropriate quality of [student] work"

6.1.1.6 Evaluation – Feedback

The sub-capability of 'feedback' was within the Evaluation capability. This sub-capability focused on the tutor exhibiting an ability to give appropriate feedback to the students regarding their progress in the unit. For example, William stated that he wrote comments on student work to explain "what makes a good assignment." He did this to help students see the weaknesses in their assignments and to help them in future assignments.

6.1.1.7 Process Facilitation – Communication

The sub-capability of 'communication' was within the Process facilitation capability. This sub-capability focused on the tutor exhibiting an ability to communicate effectively with the other stakeholders in the unit. This was more than communicating about the facts of the content materials. For example, AC asserted that tutors needed to have the ability to leave students "knowing they are not alone." In addition, Benny stated that tutors "need to be very clear in their communication because of the limits of text and there is no visual clues."

6.1.1.8 Process Facilitation – Confidence

The sub-capability of 'confidence' was within the Process facilitation capability. This sub-capability focused on the tutor exhibiting confidence in their ability to tutor online. For example, Benny stated that tutors need to have enough confidence in

their abilities to "know that the lack of obvious success indicators does not mean learning is not taking place." He suggested that tutors "may need to ask students if they are doing things."

6.1.1.9 Process Facilitation – Disposition

The sub-capability of 'disposition' was within the Process facilitation capability. This sub-capability focused on the tutor exhibiting a disposition conducive to helping students achieve success in the unit. For example, Catherine stated that tutors need "people skills to deal with people who are anxious about the technology and content while have a generosity of spirit while helping them learn." AC asserted that tutors need to be "willing to say 'I don't know'" rather than act like the "'be all and end all' expert in life."

6.1.1.10 Process Facilitation – Values

The sub-capability of 'values' was within the Process facilitation capability. This sub-capability focused on the tutor exhibiting their values as a person and an educator. For example, Benny declared the role he played tutoring was a "fulfilling experience about getting to know students better as people and where they were going and what they are doing." William echoed this with the comment that he had the "best interests of students at heart" and that he enjoyed "seeing the lightbulb go on."

6.1.1.11 Technical Knowledge – Attitude

The sub-capability of 'attitude' was within the technical knowledge capability. This sub-capability focused on the tutor exhibiting a useful attitude regarding technology. For example, Catherine stated that tutors need to be able to "handle technology and not find it a problem, wearying." Margaret echoed this when she said "don't be scared of technical issues."

6.1.1.12 Technical Knowledge – Choice of resources

The sub-capability of 'choice of resources' was within the technical knowledge capability. This sub-capability focused on the tutor exhibiting an ability to choose technology which was appropriate for the unit content and for the stakeholders. As tutors did not have control over the technology used in their units, the knowledge of recognizing what would be a good technology choice for use with the unit was included in this sub-category. For example, Lauchlin stated that "56K modem not sufficient for what they are trying to do" and that the unit "Need a prerequisite that students have broadband before things get started." Margaret stated that she "gave poor materials a miss (EduLattice) to reduce frustration."

6.1.1.13 Technical Knowledge – Technical Pedagogy

The sub-capability of 'technical pedagogy' was within the technical knowledge capability. This sub-capability focused on the tutor exhibiting an ability to teach successfully using the technology provided with the unit. For example, Benny stated that he felt "an online tutor should be good at creating a social environment, communication and developing a social environment which encourages learning." He also asked the question which tutors need to know the answer to; "How is this environment designed to facilitate learning."

6.1.1.14 Technical Knowledge - Technical Support

The sub-capability of 'technical support' was within the technical knowledge capability. This sub-capability focused on the tutor exhibiting an ability to provide technical support to students. For example, Benny stated that "tutors need a level of technical expertise, to send students to get technical questions answered if they do not answer them directly." Lauchlin stated that when it came to student technology questions "tutor are the first line of call."

6.1.2 Secondary question 2

The second question was: "What are the factors that affect the capabilities required by online tutors and how do these relate to the critical capabilities as perceived by the main stakeholders?"

There was no direct link discovered between the factors and the categories, as the learning environment mediated the relationships between the factors and the capabilities. It was this mediated relationship that is at the centre of the entire study. Therefore, it was necessary to determine the mediated relationship between the tutor capabilities and the factors.

There were thirteen factors identified as affecting online tutor capabilities through the learning environment. These were:

1. Community - The learning community (or lack thereof) created by the design of the unit, the actions of the tutors and the actions of the students;
2. Content expertise - The tutor showing an expertise in the content area;
3. Content milieu - Issues dealing with the educational material used in the unit; including how the materials were presented, access issues, and how the students interacted with the materials;
4. Design / pedagogy - How the pedagogy involved with the design and presentation of the unit affects the students and tutors;
5. Facilitation of learning - How the tutor helped the students interact the content without direct instruction which encompasses the tutors understanding of how learning takes place;
6. Institutional milieu - How the unit is affected by the policies, procedures and supposed beliefs of the institution that is offering it;
7. Interaction student / tutor - The interaction between the tutor and the student in all situations, at a distance, in person and facilitated by technology;
8. Student expectations - What students believe as compared to what the tutor believes or what the situation really is;
9. Student responsibility - What students are responsible for according to the tutor, the unit designer and the university. Not necessarily what the students think they are responsible for;

10. Teaching processes - The non-instructional teaching processes involved with tutoring, including marking, preparation time and time management;
11. Technical milieu - This was everything regarding technology including learning to use it, potential access problems, and how to use it in a proper pedagogic manner;
12. Tutor experience - The experience (or lack thereof) the tutor has dealing with aspects of tutoring online and how that affects the unit being tutored; and
13. Tutor personality - The tutor as a person dealing with emotions, behaviours and personality.

Of the thirteen factors that were identified, three were perceived as more critical than the others. These three were perceived as major points by online tutors in their practice. Tutors also acknowledged other factors as major points but only these three had the majority of tutors in agreement. There was a distinct difference between the support these three factors and the remaining ten factors throughout the tutor interviews. The remaining ten factors had fewer than half the tutors identify them as major points. The three critical factors included:

1. Interaction student / tutor
2. Technical issues
3. Tutor personality

The main stakeholders perceived the identified factors differently. Each group had their own view of the factors. The tutors had the most pragmatic view of the factors, the unit coordinators had the most overarching view and the students had the most student-centred view.

The tutors viewed the identified factors in a practical manner as they had just fulfilled their role as a tutor. They reflected on the roles they had played and discussed how they would act the next time they tutored. Efficiency was vital for the tutors especially in relation to helping the students. The effective interaction between students and tutor was clearly the focus of the tutors. This included the

inclusion of their coping mechanisms such as Margaret's decision not to access the Internet during the weekend or William's discussion board postings continually requesting students to contact him so he could help them. As a group, the tutors did not emphasize their abilities a great deal. The content expertise they all had was very understated in the interviews.

The unit coordinators had the most overall view of the identified factors. The coordinators focused more on content expertise, technical milieu and institutional milieu than the other stakeholders. For example, Margaret's unit coordinator stated that "should have a first degree in the content area and work experience with the content." Benny's unit coordinator commented that "To survive as an online tutor ... relatively competent with computers usage, html, ftp, elementary ability of graphics, and a degree of technical skill on how to troubleshoot student problems." A number of unit coordinator's remarked on the experiences the tutors had with the structures within the institutional such as technical support and distance delivery.

The students had the most student-centred view of the identified factors. Interaction between the students and tutor as well as student expectations were the focal points for the students. One of AC's students wanted to view feedback her classmates received so that she could learn how AC evaluated and "do better in the next assignment." Catherine's student wondered why they didn't "go the full way and have digital conferencing with your picture up there." Benny's student argued that "Tutors need to be disciplined with email and troubleshooting by checking 3 times a day."

6.1.3 Secondary question 3

The third question was: "Do the factors that affect online tutor capabilities modify the essence of the online tutor capabilities?"

The factors were found to modify the essence of the online tutor capabilities in this study. Three factors and the modifying affects will be presented below as illustrative examples to support this finding.

The factor of 'Student Expectations' modified the essence of the tutor capabilities. Students who were apparently dissatisfied with their online unit and expressed this publicly, required tutors' to have essentially different capabilities than students who solely required assistance with the content of the unit. Several students were quite aggressive and vocal in their expressed opinions and Lauchlin commented that, "Not much you can do about it if students give you pounding." Other tutors, such as AC and Benny were never in a position to receive a pounding from the students because of the expectations of their students. Both AC and Benny commented on the way their students focused on the work, rather than on anything else.

The factor of 'Interaction student / tutor' modified the essence of the tutor capabilities. There was a difference in how the sub-capability of 'communication' was achieved in various units. This difference affected the essence of this sub-capability'. William did not have access to his students' email addresses and commented, "lack of student contact was frustrating, asking students to contact you and they don't contact you." On the other extreme, Catherine turned off her answering machine as a way to force students to use email as she "didn't like the demands of the phone." Catherine cited workload reasons, as "some students would call five times a day if they could."

The factor of 'Content issues' also modified the essence of the tutor capabilities. The access to unit materials was a central theme in Margaret's unit as there were EduLattice materials which students had a great deal of difficulty accessing. She commented that "didn't have an answer for EduLattice stuff." AC's unit was presented in three different formats, online, CD-ROM and paper-based, and it was not modified during the semester so her content was static throughout. AC did not mention anything about students having access issues with the content created before the semester but her unit was based on co-creation of knowledge. This viewed postings on the discussion boards as content and AC tried to "encourage students to

respond to other student postings on DB to answer their questions." The views of what unit content consisted of modified the essence of the tutor capabilities.

6.2 Main research question

The main research question was:

> "What are the relationships between text-based online learning environment factors in tertiary education and the required capabilities of tutors as perceived by the stakeholders?"

Building from the answers to the three secondary questions, the answer to the main research question is quite complex. It is difficult to find a simple statement which will encapsulate the relationships between the factors and the capabilities presented in this study. Each factor affects the capabilities to a greater or lesser extent, depending on the situation. The situation in each case study demonstrated that the learning environment mediated the relationship between the factors and the capabilities. Each situation was very complex involving many factors therefore the mediation involved was complex also, especially between the strengths of the mediated relationships between each factor and each capability. This led to a revision of the theoretical framework upon which the study was grounded. Figure 6.1 presents a representation of the revised theoretical framework.

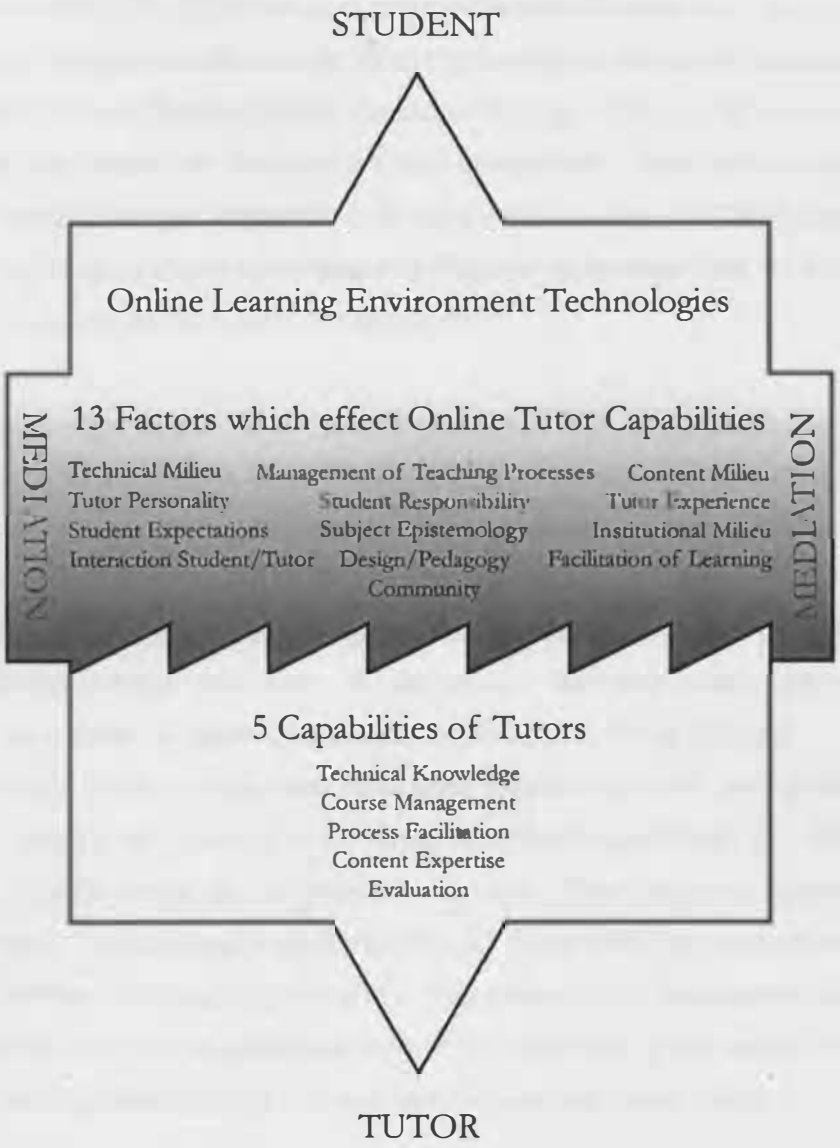


Figure 6.1: Revised theoretical framework of the tutor led text-based online education milieu

The online tutor interacted with the students through online learning environment technologies. As this interaction took place, it became apparent that the capabilities of the tutor had a relationship with the factors that emerged from the environment. The learning environment in which the relationships took place had a mediating effect on these relationships.

There were different strengths of mediated relationships between each factor and capability. Examples of this include the strong mediated relationship between the capability Technical Knowledge and the factor Technical Milieu. This was a strong relationship throughout all the interviews and observations. There was a much weaker mediated relationship between the capability Evaluation and the factor Technical Milieu. There was a relationship between the two but it did not have the consistent connection throughout the data sources.

In the various case studies, factors played a variety of roles. Some factors were prominent in particular case students and negligible in others. Other factors affected the case study in very different ways. For example, prominent factors Benny dealt with included community, interaction student/tutor and student expectations. AC dealt with prominent factors including community, interaction student/tutor, design / pedagogy and student expectations. While they both dealt with similar factors, they needed vastly different capabilities because of the nature of their learning environments. Benny wanted more community creation and public interaction between students and tutors while AC talked about being overwhelmed by the amount of public interaction her community entailed. These were two facets of the same factors. These examples are illustrative of the way each factor acted uniquely in each learning environment in the study. This uniqueness of performance caused the factors to have varying relationships with the capabilities as the nature of the factors was dependent upon the learning environment they acted within.

There were also different perceptions of the mediated relationships between the factors and the capabilities as demonstrated by the groups of stakeholders. The tutors viewed process facilitation and interaction to have the strongest relationship given the focus of the tutor interviews. The unit coordinators had a view indicating the strength of the content expertise and the design / pedagogy of the unit. The students emphasized the connection between evaluation and interaction between students and tutors.

6.3 Conclusion of discussion

This summary of the discussion will be presented in four sections, one for each of the secondary research questions and one for the main research question. Firstly, from the five capabilities of online tutors, 15 sub-capabilities were identified as critical: *Content Expertise - Knowledge and Skills; Content Expertise - Enriching interactions; Course Management – Administration; Course Management – Management; Evaluation – Assessment; Evaluation – Feedback; Process Facilitation – Communication; Process Facilitation – Confidence; Process Facilitation – Disposition; Process Facilitation – Values; Technical Knowledge – Attitude; Technical Knowledge – Choice of resources; Technical Knowledge - Technical Pedagogy; Technical Knowledge - Technical Support;* and *Technical Knowledge - Use Technology.*

Secondly, there were thirteen environmental factors identified as affecting online tutor capabilities through the learning environment: *Community; Content expertise; Content milieu; Design / pedagogy; Facilitation of learning; Institutional milieu; Interaction student / tutor; Student expectations; Student responsibility; Teaching processes; Technical milieu; Tutor experience;* and *Tutor personality*. Of these factors, the three were perceived as critical by the online tutors were: *Interaction student / tutor; Technical issues;* and *Tutor personality*.

Thirdly, the environmental factors were found to modify the essence of the online tutor capabilities in this study.

Finally, the relationships between the environmental factors and tutor capabilities were identified. The online learning environments were found to mediate these complex relationships. These relationships also had different strengths depending on the particular factors and capabilities.

The discussion chapter addressed the research questions put forth in this study. The following chapter will present a summary, limitations of the study, implications for professional practice and recommendations coming out of this study.

CHAPTER SEVEN

7.0 CONCLUSION

This final chapter will be presented in four parts. The summary of the study will be undertaken, a brief discussion of the limitations of the study will be followed by the implications for practice and finally the recommendations for further study.

7.1 Summary of the study

The purpose of this study was to consider the question of what capabilities tutors require to teach effectively in an online educational environment. This was explored through examining what factors emerged from the learning environments and how these affected the capabilities of online tutors. The determination of the criticality of the capabilities also came into focus. There were a number of motivators for conducting this study that were addressed throughout this endeavour. Firstly, the lack of literature regarding online tutor capabilities and experiences was addressed. Secondly, the question of how the differences in online students and environments affect interactions, particularly tutor-student interactions. The third motivator for conducting this study was to develop the framework of relationships between online tutor capabilities and the learning environment factors which affect them. Fourthly, the educational practice of using the teacher's presence has been successful in traditional classrooms (Brabazon, 2002), however it is not clear how to translate this type of educational approach online. Finally, definitions concerning teacher roles within online learning lacked clarity (Cashion & Palmieri, 2002).

While there is a substantial body of literature about online learning there is very little regarding the capabilities or even experiences of online tutors. Therefore this study explored what online tutors, students and unit coordinators believe are the capabilities exhibited by successful online tutors. In this study, six online tertiary

units were examined for one semester. There were 6 tutors, 5 unit coordinators and 7 students interviewed indepth as well as 28 students surveyed, one class observed face-to-face, observation of asynchronous electronic communication and of unit materials. The interviews were scheduled to have as little impact as possible with only unit coordinators being interviewed during the semester. The study used a process of collecting data, analysing the data, refining information and repeating this cycle a number of times.

7.1.1 Summary of the findings

This study produced a number of findings which will be summarized below. From a review of the literature an organizational schema for online tutor capabilities was created which did not previously exist. This schema formed the basis of the theoretical framework upon which the study was based. The schema consisted of five capabilities online tutors use which are subdivided into 24 sub-capabilities. Table 7.1 presents the organization schema of online tutor capabilities and sub-capabilities.

Table 7.1

Organization of online tutor capabilities and sub-capabilities

Capability	Sub-capability
Content Expertise	Knowledge and skills
	Enriching interactions
	Finding & providing resources
	Question analysis
	Relevant tasks
Course Management	Institution contact
	Pedagogy
	Management
	Administration
Evaluation	Assessment
	Course evolution
	Feedback
	Monitoring
Process Facilitation	Communication
	Values
	Confidence
	Disposition
	Environment creation & maintenance
	Facilitating
	Pedagogical
Technical Knowledge	Attitude
	Choice of resources
	Technical pedagogy
	Technical support

As the study progressed, 13 factors which affect the capabilities of online tutors were identified in the learning environment. Table 7.2 presents these factors .

Table 7.2

Factors which affect the capabilities of online tutors

Category	Definition
Community	The learning community (or lack thereof) created by the design of the unit, the actions of the tutors and the actions of the students.
Content Milieu	Issues dealing with the educational material used in the unit; including how the materials were presented, access issues, and how the students interacted with the materials.
Design / Pedagogy	How the pedagogy involved with the design and presentation of the unit affects the students and tutors.
Facilitation of Learning	How the tutor helped the students interact the content without direct instruction which encompasses the tutors understanding of how learning takes place.
Institutional Milieu	How the unit is affected by the policies, procedures and supposed beliefs of the institution that is offering it.
Interaction student / tutor	The interaction between the tutor and the student in all situations, at a distance, in person and facilitated by technology.
Management of Teaching Processes	The non-instructional teaching processes involved with tutoring, including marking, preparation time and time management.
Student Expectations	What students believe as compared to what the tutor believes or what the situation really is.
Student Responsibility	What students are responsible for according to the tutor, the unit designer and the university. Not necessarily what the students think they are responsible for.
Subject Epistemology	The tutor showing an expertise in the content subject area.
Technical Milieu	This was everything regarding technology including learning to use it, potential access problems, and how to use it in a proper pedagogic manner.
Tutor Experience	The experience (or lack thereof) the tutor has dealing with aspects of tutoring online and how that affects the unit being tutored.
Tutor Personality	The tutor as a person dealing with emotions, behaviours and personality.

These factors were identified during the data analysis phase of the study. There was also a discovery of the priority placed upon the factors by the educational stakeholders. During the analysis of the tutor interviews, it was found that five

factors were the main themes throughout the interviews. These factors were: *Interaction Student / Tutor, Technical Milieu, Tutor Personality, Design / Pedagogy,* and *Student Expectations.*

After further examination, three key factors from the interviews were identified that all the tutors regarded as important, irrespective of the educational situation they had experienced. The three key factors were: *Interaction Student / Tutor, Technical Milieu,* and *Tutor Personality*.

The distillation of the three key factors resulted from the effort to determine the criticality of the online tutor capabilities. The relationship between each of the 13 environmental factors and each of the 24 sub-capabilities was explored to determine the strength of each relationship. There was found to be different strengths of relationships based upon the mediation effect of the learning environment in which the relationship took place. This mediation affected each relationship as no factor and sub-capability was found to have a relationship outside of the learning environment. The exploration of the relationship between the factors and the capabilities resulted in the identification of the critical sub-capabilities of online tutors.

After the relationships between the factors and the sub-capabilities were defined it was possible to determine which capabilities were critical for online tutors.
The critical sub-capabilities are presented in Table 7.3 below.

Table 7.3

Critical capabilities and sub-capabilities of online tutors

Capabilities	Sub-capabilities
Content Expertise	CE - Knowledge and skills
	CE - Enriching interactions
Course Management	CM – Management
	CM – Administration
Evaluation	E – Assessment
	E – Feedback
Process Facilitation	PF – Communication
	PF – Confidence
	PF – Disposition
	PF – Values
Technical Knowledge	TK- Attitude
	TK- Choice of resources
	TK- Technical pedagogy
	TK- Technical support

Examples of the criticality of the sub-capabilities were evident throughout the study. *Content Expertise - Knowledge and skills* was critical in Catherine's unit as she tutored in a very detailed, data driven field in which the precise scaffolding of knowledge was critical. *Content Expertise - Enriching interactions* was critical in Benny's unit as the strong student individuality led Benny to act complimentary to the unit materials. *Course Management – Management* was critical in Margaret's unit as she worked within the design of her unit and managed the unit as it was designed. *Course Management - Administration* was critical in William's unit due to the amount of interaction the unit had with the organizations and structures of the institution. *Evaluation - Assessment* was critical in Margaret's unit due to the institutional structure which required her to return some assignments before others had been received. *Evaluation - Feedback* was critical in AC's unit with students submitting biweekly assignments and needs verbose feedback for the consumption of

the entire class. *Process Facilitation - Communication* was critical in AC's unit given the large amount of interaction which took place between the stakeholders. *Process Facilitation - Confidence* was critical in Benny's unit as he changed his preconceived notions about online education and accepted the role to students' wanted him to fulfil. *Process Facilitation - Disposition* was critical in William's unit as he was frustrated by the lack of interaction between students and the tutor but did not let this turn the tutoring experience into a disappointing one. *Process Facilitation - Values* was critical in AC's unit as her unit had a wide cultural demographic of students with a range of beliefs on many topics. *Technical Knowledge- Attitude* was critical in Lauchlin's unit as he had to content with a challenging technology situation and he wanted to keep the students positively engaged with the process. *Technical Knowledge - Choice of resources* was critical in Margaret's unit as she gave poor resources a miss to concentrate on positive outcomes. *Technical Knowledge - Technical pedagogy* was critical in Catherine's unit as she tutored large group online lecture sessions. *Technical Knowledge - Technical support* was critical in Lauchlin's unit as access as well as student understanding of technology was very challenging.

7.2 Limitations of the study

There were a number of limitations to this study. The disparity between the number of advertised online units compared to the actual number of units affected this study. This reduced the opportunities to examine units which had multiple tutors. This also reduced the prospects of eliminating units from the study if they did not fit exactly with the research plan because of the small numbers which were being worked with. The use of three different online learning environments, Athenæum, Gauntlet and Harambee added complexity to the analysis which a single online learning environment would have avoided. However, this provided an opportunity to decontextualize the findings of the study as the capabilities and environmental factors were not specific to one online learning environment. In addition, the three online learning environments limits the generalizability of the findings. One online

learning environment would have allowed a greater opportunity to generalize the findings outside this institution.

Two of the units chosen did not fit the expected criteria set out before the study began. Catherine's unit did not have a unit coordinator and tutor. Catherine did both jobs and this limited some of the potential insights a relationship between two people would have revealed. AC's unit had face-to-face contact built in to it. The contact was designed as voluntary Saturday workshops but this contact affected the community dynamics and the interaction between the students and the tutor. Students could wait and ask questions of the tutor in person rather than use the technology to interact.

The implementation of the online questionnaire was another area of the study which had limited value. There were access problems for some participants depending on the state of the University network. The lack of student response to the online questionnaire also limited the usefulness of that instrument.

Another technical issue which limited the study was the loss of interview data through recording device problems. Except for written notes, one interview was lost entirely and several minutes at the end of another interview were irretrievable.

In the planning and design of the study, student withdrawal from the units was not something which was considered. There were dynamics which may have occurred during the units due to the withdrawal of students which the study did not account for. This potential change in the community of these online units was not explored in any great depth.

7.3 Implications for practice

From this study come a number of implications for practice. Briefly, these implications will be presented in the following order: interaction between students and tutor, communication, personality of the tutor, technical knowledge, workload and online students.

A major implication for practice is the importance of the interaction between the students and the tutor. This has been suggested throughout the literature (Bennett et al., 1999; Coppola et al., 2001; Creanor, 2002; Graham et al., 2001; Mortera-Gutierrez, 2002; Volery, 2001) and was confirmed in this study with the students desiring to have a person to communicate with throughout the semester in the manner outlined by Goodyear et al. (2001). This person needed to keep the interaction with students as clear and open as possible. In this study, it appeared that regardless of the situation, the students wanted to feel as if the tutor cared for them as a person. This interpersonal caring moderated the negative comments made by students when they discussed problems in the units. When the students felt this interpersonal caring did not exist, such as in the case of Lauchlin's unit, strong negative emotions were evident throughout the interactions of the stakeholders.

Part of the interaction between students and tutors included communication (Brewer, 2001; Graham et al., 2001). The clarity of the communication from the tutor was vital for the success of the unit. When students were able to easily understand what the tutor was trying to communicate, it reduced the workload, frustration and isolation in the unit. An important aspect of this was the timeliness of the feedback provided to students and particularly during the first two weeks of the semester. Timeliness is vital to engaging students in the online education process. If students do not engage with the process within the first two weeks, they are more likely to withdraw feeling a great deal of frustration. Another aspect of successful communication was managing the implementation of strategies to clarify people's roles and responsibilities. Especially important was the clear definition of student responsibilities in the unit compared to their expectations. Simple strategies include

giving scheduled times that email would be answered as Margaret did when she posted a message to the discussion board stating that she did not check her email on weekends. She was clear and while some students did not like this strategy, they were very aware of its existence. AC used her discussion boards as a tool to wean the students off the idea that she was the only person who could answer their questions. AC made it clear that anyone could answer discussion board postings and this succeeded in reducing her workload and strengthening the community in her unit. One comment made by Benny's unit coordinator was "Don't introduce uncertainty to the unit." This could be done by setting strategies in place to handle the routines and workings of the unit. Clarity of communication is one way to do this. Planning for the future is another. Margaret admitted that she had to give guidance to students about assignments before she had the marking criteria for the assignment. Careful planning and being aware of what the students require reduces potential problems.

Another aspect of the communication between students and tutors was the important role of the personality of the tutor as suggested in the literature (Herrington et al., 2001; Schoenfeld-Tacher & Persichette, 2000). Just as in traditional face-to-face education, not everyone will be suited to be an online tutor. Tutors need to be able to connect with students using interpersonal skills and must make themselves available when students need them. Clearly empathy is a good trait for tutors to possess, as many online students need some one to connect with who understands what they are going through. Wanting to help the students is another aspect of what makes a successful online tutor. William used the phrase "going the extra mile" to describe what he was willing to do.

This study further strengthens the argument that the type of technology and how it is incorporated in online education are significant determinants of the required capabilities of tutors for an online unit. (Furst-Bowe, 1996; Gundling, 1999; Gustaffson & Gibbs, 2000; Herrington et al., 2001; Kupritz, 1999; Phipps & Merisotis, 1999; Volery, 2001; White, 2000). Good technical knowledge is not optional in online tutoring. Tutors are the first people contacted by students when technical problems arise. Tutors need to be able to answer student questions as often

as possible without making mistakes which will need to be corrected later. Having a positive attitude about technology is another important feature as the students can tell if tutors are uncomfortable or do not enjoy using technology. A negative attitude can lead to questions arising from students about the quality of the information they receive from the tutor regarding technical issues.

The findings of the study support the findings of a number of authors (Ellis & Phelps, 2000; Reeves, 2003; Reushle et al., 2003) that tutors need to be prepared for the workload which accompanies online education. Not only is it much greater, it is quite different from face-to-face tutoring. Communicating with students requires a great deal of typing which takes many people longer than simply speaking. Also, the one-to-one relationships with students is much more time consuming than the one-to-many relationship in face-to-face tutoring. AC's unit coordinator stated that one had to be prepared for the "black hole of work." The workload can be exhaustive and this institution did not offer greater financial remuneration for the extra work.

There was no formal hiring criteria for online tutors at this institution. Future studies might enable the creation of a realistic position description for tutors rather than the current lack of any online tutor position description at this institution. Also, Postle and Ellerton's (1999) concept of the rigidity of organizational / administration structures need further examination which might help organizations such as the Flexible Delivery Centre to modify their procedures after they are informed of the impact of their current practices. Along this theme, there needs to be more research done into online unit coordinators to determine what their roles are and how they interact with online tutors.

A final implications for practice drawn from the results of the study involves the satisfaction of online students. As argued in the literature (Phipps & Merisotis, 1999; Rowley, 1997), student outcomes, student attitudes and student satisfaction are the main measures used to determine the success of an online unit. Therefore, for the students to perceive an online offering as successful they need to be satisfied with the interaction throughout the unit. These students are not the same as face-to-face

students. Online tutors need to be aware of this. Online students can live anywhere there is an Internet connection and they are communicating through technology that they may have very little proficiency with. Also there are a many mature age students choosing this form of education. Given that the interactions in online education are more one-to-one than one-to-many, this empowers students compared to face-to-face education. Many units are designed based on constructivist principles of learning so these students are looking for guidance rather than a teacher. The expectations of these students are something which can be very surprising if the tutor is not prepared for them.

7.4 Recommendations for further study

There are a number of recommendations for further study resulting from the completion of this study. These recommendations will be presented in four sets; procedures, institutional, students and tutors.

The first set of recommendations involve the procedures for future studies in this area. It would be beneficial if all the units being studied were strictly online units. The addition of a face-to-face component in one of the units added to the complexity of the analysis of the data. Future studies would also benefit from examining units with many tutors. This would allow a greater insight into different tutors interacting with students and online learning environments while also acting together with the same content and unit coordinator. It was felt that the interaction between these tutors would have been enlightening as well. This was one of the original plans for this study but these types of unit do not exist at this institution yet. The examination of a variety of units using the same online learning environment would provide a standard framework for the offering of online units.

There are institutional recommendations for future study on capabilities of online tutors. There needs to be more studies done in other institutions that have online tutors. In support of Berge & Mrozowski (1999), the institutional barriers that

adversely affected online tutors need to be examined fully and addressed. These barriers may not exist at all institutions and this needs to be determined so institutions can set up policies and procedures which actually support the offering of online units.

Another set of recommendations involve the future studies of online students. The life situations of online students need to be examined in much greater detail. The generalizations made in many studies about the demographic details of online tutors do not get to the root of the situations. This ties strongly into the factor student expectations as the factor leads from how the students think about their education and what they are endeavouring for. The anxiety regarding using technology while also studying for a tertiary qualification needs to be addressed so that this anxiety can be resolved for the best possible outcome. The empowerment of online students is another area of interest. The students had a very different view of their relationship with their tutor than in a traditional classroom (Maeroff, 2003). This empowerment needs to be defined more clearly for educators so they are better prepared for this phenomenon.

The final set of recommendations involve the future studies of online tutors. More study needs to be done on online tutors because they do not have control of the content. Throughout this study, the unit coordinators did not seem to grasp the lack of control tutors had with the content of their units. This study has contributed to the understanding of capabilities of online tutors but it is an area which needs more investigation. Further examination of the factors which affect online tutor capabilities is also recommended. The literature presents factors which affect teaching online but this is not the same as tutoring online. The design and choices of the content materials modify the required tutor capabilities. More focused examination on this might lead to greater insights now that future studies have a firmer starting point. Investigations into hiring processes and evaluation of online tutors is lacking and this study is a stepping stone for further research. In-depth research into the actual workload of online tutors might allow potential tutors to make a more informed decision about online tutoring. Now that the mediation of relationships between factors and capabilities through the learning environment has

been established, more research needs to be done to better understand the complexities involved in this mediation.

7.5 Conclusion

The purpose of this study was to examine the online learning milieu to identify the capabilities required of online tutors for particular online learning environments. It was necessary to determine what environmental factors affect online tutor capabilities and what the relationship was between the capabilities and these factors. This was explored through the perceptions of online tutors, students and unit coordinators and through observation of online and face-to-face interactions.

There are a number of major implications of this research. The first of which is the creation of a framework of capabilities and sub-capabilities specifically for online tutors who do not have control of the design of their content. Secondly the study identified and organized the environmental factors which affect online tutor capabilities. This extended to the formation of a paradigm of the mediated relationships between online tutor capabilities and environmental factors which affect them resulting in the creation of a research-based model of the online learning milieu. The final major implication of this research was addressing the lack of depth in the literature regarding online tutors, their capabilities and the environmental factors which affect those capabilities.

This study identified critical online tutor capabilities and sub-capabilities. This focus on the tutoring aspects of online learning addressed a deficiency in of literature in the area. The lack of control tutors possess over the design and content make them fundamentally different from teachers and designers who can make changes to the design of the unit. It was this difference which defined the capabilities of the tutors as they were forced to adapt and make do with what was available rather than change the design to better suit their skill sets.

A major implication of this research was the identification and organization of environmental factors which affect online tutor capabilities. Again, the literature

mainly deals with teaching and designing online and does not focus on tutors. The organization of definitions for these environmental factors in such a detailed way will allow for further study from a solid research base, rather than the opinions which seem to typify this area in the literature. The organization of definitions in conjunction of the richness of the case studies should provide professional learning opportunities for online tutors.

This study has also identified major dissimilarity in the opinions of the stakeholders, namely the tutors, students and unit coordinators regarding the role of the online tutor. Highlighting this difference will allow people to better interpret the literature which is available as well as provide opportunities to improve the understanding of the descriptions of online tutors.

The study led to the formation of a paradigm of the mediated relationships between online tutor capabilities and environmental factors which affect them. Each of the mediated relationships between individual sub-capabilities and factors is extremely complex and has not been addressed in any detail in the literature. The mediation in these relationships forms the essence of the tutoring experience. This finding will allow further research on this very important concept as online education becomes more entrenched in mainstream tertiary education.

This study has provided a research-based model of the online learning milieu. This model could not have been created without an indepth study and understanding of online tutor capabilities, environmental factors which affect them and the mediated relationships between them. This model begins to clarify how online education with tutors' functions and will assist unit designers as they produce online units which require tutors. The refining of this model through research in the future will further assist designers and tutors.

There is a lack of literature on the capabilities required by online tutors (Cyrs, 1997; Fletcher, 2003; Reeves, 2003) and the environmental factors which affect tutor capabilities (Cashion & Palmieri, 2002; Clarke et al., 2004; Levy, 2003; Schoenfeld-Tacher & Persichette, 2000). This study presents a theoretical framework to better

identify the capabilities required by online educators in various online learning situations, the criticality of identified sub-capabilities, the factors which affect tutor capabilities, and the relationship between the factors and the capabilities. This framework will assist educational leaders in the selection, training, and support of online tutors and provides the tutors with a clearer understanding of what they are likely to encounter and the skills they need to develop to successfully support students within an online learning environment.

REFERENCES

Agar, M. (1986). *Speaking of ethnography*. London: Sage Publications.

Anderson, L., & Burns, R. (1989). *Research in classrooms: The study of teachers, teaching and instruction*. Sydney: Pergamon Press.

Apple. (2004). iTunes (Version 4.5). Cupertino, California: Apple Computer.

Beaubien, J. (2002). Harnessing the power of complexity in an online learning environment. In J. Schoenholtz-Read (Ed.), *Handbook of online learning* (pp. 221-236). London: Sage Publications.

Behncke, L., & McNaught, C. (2001, December 9-12). *Seeing the bigger picture: Experiences of employing online learning within TAFE at RMIT.* Paper presented at the Australasian Society for Computers in Learning in Tertiary Education 2001: Meeting at the crossroads, Melbourne.

Bennett, S., Priest, A., & Macpherson, C. (1999). Learning about online learning: An approach to staff development for university teachers. *Australian Journal of Educational Technology, 15*(3), 207-221.

Benson, R., Hardy, L., & Maxfield, J. (2001). *The international classroom: Using reflective practice to improve teaching and learning.* Paper presented at the Australasian Society for Computers in Learning in Tertiary Education 2001: Meeting at the crossroads, Melbourne.

Berge, Z. (1995). The role of the online instructor/facilitator. *Educational Technology, 35*(1), 22-30.

Berge, Z., & Mrozowski, S. (1999). Barriers to online teaching in elementary, secondary, and teacher education. *Canadian Journal of Educational Communication, 27*(2), 125-138.

Berge, Z. (2000). Perceptions of e-moderators about their roles and functions in moderating electronic mailing lists. *Distance Education: An International Journal, 21*(1), 81-100.

Berge, Z., & Collins, M. (2000). Perceptions of e-moderators about their roles and functions in moderating electronic mailing lists. *Distance Education: An international journal, 21*(1), 81-100.

Bernath, U., & Rubin, E. (2001). Professional development in distance education - a successful experiment and future directions. In A. Gooley (Ed.), *Innovations in open and distance learning*. London: Kogan Page.

Boyd, A., Fox, R., & Herrmann, A. (2000). Distance and open learning students access to the internet. In A. H. M. M. Kulski (Ed.), *Flexible Futures in Tertiary Teaching*. Perth: Curtin University of Technology.

Brabazon, T. (2002). *Digital hemlock: Internet education and the poisioning of education.* Sydney: University of New South Wales Press.

Brace-Govan, J., & Clulow, V. (2000). Varying expectations of online students and the implications for teachers: Findings from a journal study. *Distance Education, 21*(1), 118-135.

Brayboy, B., & Deyhle, D. (2000). Insider-Outsider: Researchers in american indian communities. *Theory into Practice, 39*(3), 163-169.

Brewer, L. (2001). *The development of online learning understanding faculty and student experiences in an organizational context.* Unpublished PhD, Arizona State University.

Broad, M. (1999). The dynamics of quality assurance in on-line distance education. *Electronic Journal of Instructional Science and Technology, 3*(1).

Bronack, S., & Thornton, P. (1999). Web-based learning environments: Issues and perspectives for international teacher training and instruction. *International Electronic Journal for Leadership and Learning, 3*(17).

Brown, B. M. (2002). Teaching virtual leadership: Using the case method online. In J. Schoenholtz-Read (Ed.), *Handbook of online learning*. London: Sage Publications.

Brown, G., Myers, C., & Roy, S. (2003). Formal course design and the student learning experience. *Journal of Asynchronous Learning Networks, 7*(3), 66-76.

Burnett, D. (1999). *Pedagogical alternatives for web-based instruction.* Paper presented at the AusWeb99, Lismore, New South Wales.

Burns, R. (1994). *Introduction to research methods.* Sydney: Longman Chesire Pty Ltd.

Carr-Chellman, A., & Duchastel, P. (2000). The ideal online course. *British Journal of Educational Technology, 31*(3), 229-241.

Cashion, J., & Palmieri, P. (2002). *The secret is the teacher: The learner's view of*

online learning. Leabrook, South Australia: Australian National Training Authority.

Chen, D.-T., Wong, A., & Hsu, J. (2003). Internet-based instructional activities: Not everything should be on the internet. *Journal of Research on Technology in Education, 36*(1).

Clarke, M., Butler, C., Schmidt-Hansen, P., & Somerville, M. (2004). Quality assurance for distance learning: A case study at Brunel University. *British Journal of Educational Technology, 35*(1), 5-11.

Clough, P., & Nutbrown, C. (2002). *A student's guide to methodology: Justifying enquiry.* London: Sage Publication.

Cohen, L., & Manon, L. (1994). *Research methods in education* (4 ed.). London: Routledge.

Cohen, E. (2003). *A modest proposal for the survival of our profession: The informing science framework to higher education.* Paper presented at the Australasian Society for Computers in Learning in Tertiary Education 2003, Adelaide.

Cohen, E. (2004). Re: Course implementers. In D. Reid (Ed.).

Cooper, D., & Schindler, P. (1998). *Business research methods* (Vol. 6). Sydney: Irwin McGraw-Hill.

Cooper, L. (2001). Online and traditional computer applications classes. *Technological Horizons in Education Journal, 28*(8).

Cooper, L. (2001). On-line courses: Tips for making them work. *Electronic Journal of Instructional Science and Technology, 3*(3).

Coppola, N., Hiltz, S., & Rotter, N. (2001). *Becoming a virtual professor: Pedagogical roles and ALN.* Paper presented at the 34th International Conference on System Sciences, Hawaii.

Creanor, L. (2002). A tale of two courses: a comparative study of tutoring online. *Open Learning, 17*(1), 57-68.

Cyrs, T. (1997). Competence in teaching at a distance. *New Directions for Teaching and Learning, 71*, 15-18.

Dabbagh, N. (2000). The challenges of interfacing between face-to-face and online instruction. *TechTrends, 44*(6), 37-42.

Darmawan, G. (2000). The changes of structural, perception and attitudinal dimensions in information technology implementation processes.

International Education Journal, 1(3), 181-200.

De Cubber, G. (2001). The killer application: E-learning terminology, components, adverse factors, (r)e-volution. *Business Quest, 2001.*

Dominguez, P., & Ridley, D. (1999). Reassessing the assessment of distance education courses. *Technological Horizons in Education Journal, 27*(2).

Duggleby, J. (2000). *How to be an online tutor*. Hampshire, England: Cambridge University Press.

Eastmond, D. (2000). Enabling student accomplishment online: An overview of factors for success in web-based distance education. *Journal of Educational Computing Research, 23*(4), 343-358.

Ellis, A., & Phelps, R. (2000). Staff development for online delivery: a collaborative, team based action learning model. *Australian Journal of Educational Technology, 16*(1), 26-44.

Farrington, G., & Bronack, S. (2001). Sink or swim? *Technological Horizons in Education Journal, 2001.*

Fetterman, D. (1989). *Ethnography: Step by step*. New York: Sage.

Fletcher, M. (2003). *Embedding expertise for online tutor development.* Paper presented at the Australasian Society for Computers in Learning in Tertiary Education 2003, Adelaide.

Fluck, A. E. (2003). *Integration or transformation? A cross-national study of information and communication technology in school education.* University of Tasmania, Hobart, Tasmania.

Fontaine, G. (2002). Presence in "teleland". In J. Schoenholtz-Read (Ed.), *Handbook of Online Learning*. London: Sage Publications.

Fraser, A. (1999). Colleges should tap the pedagogical potential of the world wide web. *Chronicle of Higher Education, 48*, 8.

Furst-Bowe, J. (1996). An analysis of the competencies needed by trainers to use computer-based technologies and distance learning systems. *Performance Improvement Quarterly, 9*(4), 57-78.

Furst-Bowe, J., Boger, C., Franklin, T., McIntyre, B., Polansky, J., & Schlough, S. (1996). An analysis of required computer competencies for university students. *Journal of Research on Computing in Education, 28*, 175-189.

Furst-Bowe, J. (1997). Comparison of student reactions in traditional and videoconferencing courses in training and development. *International*

Journal of Instructional Media, 24(3), 197-205.

Gibbons, T., & Brenowitz, R. (2002). Designing and using a course in organization resign to facilitate corporate learning in the online environment. In J. Schoenholtz-Read (Ed.), *Handbook of online learning.* London: Sage Publications.

Gladwin, C. (1989). *Ethnographic decision tree modeling* (Vol. 19). London: Sage Publications.

Glesne, C., & Peshkin, A. (1992). *Becoming qualitative researchers: An introduction.* Melbourne: Longman.

Goetz, J. P., & LeCompte, M. D. (1984). *Ethnography and qualitative design in educational research.* London: Academic Press Inc.

Goodyear, P., Salmon, G., Spector, J. M., Steeples, C., & Tickner, S. (2001). Competencies for online teaching: a special report. *Educational Technology Research and Development, 1*, 65-72.

Graham, C., Cagiltay, K., Lim, B.-R., Craner, J., & Duffy, T. (2001). Seven principles of effective teaching: A practical lens for evaluating online courses. *Technology Source, March/April.*

Gundling, E. (1999). How to communicate globally. *Training & Development*, 28-31.

Gustaffson, P., & Gibbs, D. (2000). Guiding or hiding? The role of the facilitator in online teaching and learning. *Teaching Education, 11*(2), 195-210.

Hammersley, M. (1990). *Classroom ethnography: Empirical and methodological essays.* Milton Keynes: Open University Press.

Harper, B., Hedberg, J., Bennett, S., & Lockyer, L. (2000). *The on-line experience: The state of Australian on-line education and training practices.* Leabrook, South Australia: Australian National Training Authority.

Hazari, S., & Schno, D. (1999). Leveraging student feedback to improve teaching in web-based courses. *Technological Horizons in Education Journal, 26*(11).

Hedberg, J. (2001). The online and digital experience: reassuring higher-order learning outcomes. In R. Cornell (Ed.), *Cybereducation: The future of long distance education* (pp. 219-236). New York: Mary Anne Liebert, Inc.

Herrington, A., Herrington, J., Oliver, R., Stoney, S., & Willis, J. (2001). *Quality guidelines for online courses: The development of an instrument to audit online units.* Paper presented at the ASCILITE 2001, Melbourne.

Hirumi, A. (2002). Student-centered, technology-rich learning environments (scentrle): operationalizing constructivist approaches to teaching and learning. *Journal of Technology and Teacher Education, 10*(4), 497-537.

Hodges, P., & Saba, L. (2002). Teaching statistics online. In J. Schoenholtz-Read (Ed.), *Handbook of online learning.* London: Sage publications.

Howell, S., Williams, P., & Lindsay, N. (2003). Thirty-two trends affecting distance education: An informed foundation for strategic planning. *Online Journal of Distance Learning Administration, VI*(3).

Howsam, R., & Houston, W. R. (1972). Change and challenge. In W. R. Houston (Ed.), *Competency-based teacher education.* Sydney: Science Research Associates, Inc.

International Board of Standards for Training, Performance and Instruction. (2003). *Instructor competencies*: International Board of Standards for Training, Performance and Instruction.

Javid, M. (2001). Edmonds and kamiak cyberschools: Two innovative emerging models for cybereducation. In R. Cornell (Ed.), *Cybereducation: The future of long distance education* (pp. 185-218). New York: Mary Anne Liebert, Inc.

Kaufman, R., Watkins, R., & Guerra, I. (2001). The future of distance education: Defining and sustaining useful results. *Educational Technology, May-June*, 19-26.

Kay, A. (1996). *Keynote.* Paper presented at the EdMedia96, Boston, USA.

Kimball, L. (1995). Ten ways to make online learning groups work. *Educational Leadership, 53*(2), 54-57.

King, B. (2001). Making a virtue of necessity - a low-cost, comphrensive online teaching and learning environment. In A. Gooley (Ed.), *Innovation in open and distance learning.* London: Kogan Page.

Ko, S., & Rossen, S. (2004). *Teaching online: A practical guide.* Boston: Houghton Mifflin.

Kouki, R., & Wright, D. (1999). *Telelearning via the Internet.* London: Idea Group Publishing.

Kroder, S., Suess, J., & Sachs, D. (1998). Lessons in launching web-based graduate courses. *Technological Horizons in Education Journal, 25*(10).

Kupritz, V. (1999). The medium is the message: Implications for teaching in

cyberspace. *Electronic Journal of Instructional Science and Technology, 3*(2).

Lamb, A., & Smith, W. (2000). Ten facts of life for distance learning courses. *TechTrends, 44*(1), 12-15.

LaRue, B., & Sobol, M. (2002). The executive master class: Cyberspace and the new frontiers of executive education. In J. Schoenholtz-Read (Ed.), *Handbook of online learning*. London: Sage Publications.

Lentell, H., & O'Rourke, J. (2004). Tutoring large numbers: An unmet challenge. *International Review of Research in Open and Distance Learning, 5*(1).

Levin, J., Levin, S., & Waddoups, G. (1999). Multiplicity in learning and teaching: a framework for developing innovative online education. *Journal of Research on Computing in Education, 32*(2), 256-269.

Levy, S. (2003). Six factors to consider when planning online distance learning programs in higher education. *Online Journal of Distance Learning Administration, VI*(1).

Lockwood, F. (2001). Innovation in distributed learning: creating the environment. In A. Gooley (Ed.), *Innovation in open and distance learning*. London: Kogan Page.

MacMillan, J., & Schumacher, S. (1989). *research in education: A conceptual introduction* (2 ed.). London: Scott, Foresman and Company.

Maehl, M. H. (2000). *Lifelong learning at its best*. San Francisco: Jossey-Bass.

Maeroff, G. I. (2003). *A classroom of one: How online learning is changing our schools and colleges*. New York: Palgrave Macmillan.

Mann, B. (1998). *Should we or shouldn't we: WebCT arrives at Edith Cowan University*. Perth: The School of Indigenous Australian Studies, Edith Cowan University.

Masie, E. (2000). *Survey results: Roles and expectations for e-trainers*. Retrieved August 7, 2001, from http://www.techlearn.com/trends/trends168.htm

Matuga, J. M. (2001). Electronic pedagogical practice: The art and science of teaching and learning online. *Educational Technology and Society, 4*(3), 77-84.

Mazzolini, M., & Maddison, S. (2003). *Widening the circle- Managing discussion forums in a growing online program.* Paper presented at the Australasian Society for Computers in Learning in Tertiary Education 2003, Adelaide.

McDonald, J., & Postle, G. (1999). *Teaching Online: Challenge to a reinterpretation of traditional instructional models.* Paper presented at the AusWeb99, Southern Cross University, Lismore, NSW.

McDonald, J. (2002). Is "as good as face to face" as good as it gets? *Journal of Asynchronous Learning Networks, 6*(2), 10-23.

McGhee, P., & O'Hagan, C. (2001). VESOL: cost effective video production to support distance learners. In A. Gooley (Ed.), *Innovation in open and distance learning.* London: Kogan Page.

MicroSoft. (2003a). Excel (Version 2003). Redmond, Washington: MicroSoft.

MicroSoft. (2003b). PowerPoint (Version 2003). Redmond, Washington: MicroSoft.

Mills, R. (1999). Diversity, convergence and the evolution of student support in higher education in the UK. In R. Mills (Ed.), *The convergence of distance and convential education: Patterns of flexibility for the individual learner* (pp. 71-85). London: Routledge.

Mortera-Gutierrez, F. (2002). Instructor interactions in distance education environments. *Journal of Interactive Learning Research, 13*(3), 191-209.

Moskal, P., & Dziuban, C. (2001). Present and future directions for assessing cybereducation: The changing research paradigm. In R. Cornell (Ed.), *Cybereducation: The future of long distance education* (pp. 157-184). New York: Mary Anne Liebert, Inc.

Neff, M. (2002). Online knowledge communities and ther role in organizational learning. In J. Schoenholtz-Read (Ed.), *Handbook of online learning.* London: Sage Publications.

O'Malley, J. (1999). Students perceptions of distance learning, online learning and the traditional classroom. *Online Journal of Distance Learning Administration, 2*(4).

Oliver, R., & Grant, M. (1994). *Distance education technologies: A review of instructional technologies for distance education and open learning.* Perth: Edith Cowan University.

Oliver, R., & Herrington, J. (2001). *Teaching and learning online: A beginner's guide to e-learning and e-teaching in higher education.* Perth, Western Australia: Centre for Research in Information Technology and Communications.

Oliver, R., & Herrington, J. (2002). *Description of online teaching and learning.* Retrieved May 12, 2004, from http://www.learning designs.uow.edu.au/exemplars/info/LD20/index.html

Oliver, R., & McLoughlin, C. (2001). Using networking tools to support online learning. In A. Gooley (Ed.), *Innovation in open and distance learning.* London: Kogan Page.

Oliver, R. (2001). Assuring the quality of online learning in Australian higher education. In D. Newton (Ed.), *Proceedings of Moving Online II Conference* (pp. 222-231). Lismore: Southern Cross University.

Palloff, R., & Pratt, K. (1999). *Building learning communities in cyberspace.* San Francisco: Jossey-Bass.

Palloff, R., & Pratt, K. (2002). Beyond the looking glass: What faculty and students need to be successful online. In J. Schoenholtz-Read (Ed.), *Handbook of online learning.* London: Sage Publications.

Parchoma, G. (2003). Learner-centered instructional design and development: Two examples of success. *Journal of Distance Education, 18*(2), 35-60.

Pascual, L., Murriello, A., & Suarez, M. A. (2000). Teaching and learning at a distance: Opinions of tutors and students. *The European Journal of Open and Distance Learning.*

Peregoy, R. (2000). Developing strategies for networked education. *Technological Horizons in Education Journal, 28*(1).

Petroski, H. (1999). *The book on the bookshelf.* Toronto: Random House.

Phipps, R., & Merisotis, J. (1999). *What's the difference: A review of contemporary research on the effectiveness of distance learning in higher education.* Washington, D.C.: The Institute for Higher Education policy.

Postle, G., & Ellerton, N. (1999). *A changing role for teachers on-line: a case study in higher education in Australia.* Toowoomba, Queensland: The University of Southern Queensland.

Reeves, T. (2003). Storm clouds on the digital education horizon. *Journal of Computing in Higher Education, 15*(1), 3-26.

Reid, D. (2001). *Knowledge retention and computer-based training.* Unpublished Masters, University of Calgary, Calgary.

Reushle, S., McDonald, J., & Lowe, W. (2003). *Bridging international boundaries-integrating and mentoring teaching roles in an online environment.* Paper

presented at the Australasian Society for Computers in Learning in Tertiary Education 2003, Adelaide.

Rowley, J. (1997). Open learning and IT skills acquisition in higher education. *British Journal of Educational Technology, 28*(January), 64-65.

Ryan, R. (2000). Student assessment comparison of lecture and online construction equipment and methods classes. *Technological Horizons in Education Journal, 27*(6).

Salmon, G. (2000). *E-Moderating: The key to teaching and learning online.* London: Kogan Page Limited.

Scagnoli, N. (2001). Student orientation for online programs. *Journal of Research on Technology in Education, 34*(1), 19-27.

Schoenfeld-Tacher, R., & Persichette, K. (2000, July). *Differential skills and competencies required of faculty teaching distance education courses.* Retrieved August 7, 2001, 2001, from http://www.ecel.uwa.edu.au/ijet/v2n1/schoenfeld-tacher/index.html

Schostak, J. (2002). *Understanding, designing and conducting qualitative research in education.* Buckingham: Open University Press.

Schrum, L., & Hong, S. (2002). From the field: Characteristics of successful tertiary online students and strategies of experienced online educators. *Education and Information Technologies, 7*(1), 5-16.

Shank, P. (2000). Not to cool for school. *Online Learning, October.*

Sherry, L., & Morse, R. (1995). An assessment of training needs in the use of distance education for instruction. *International Journal of Educational Telecommunications, 1*(1), 5-22.

Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2003). *Teaching and learning at a distance: Foundations of distance education* (2 ed.). Columbus, Ohio: Merrill Prentice Hall.

Simpson, O. (2003). *Student retention in online, open and distance learning.* London: Kogan Page.

Smith, L. (1990). Critical introduction: Wither classroom ethnography? In M. Hammersley (Ed.), *Classroom ethnography* (pp. 1-12). Milton Keynes: Open University Press.

Smith, S., Smith, S., & Boone, R. (2000). Increasing access to teacher preparation: The effectiveness of traditional instructional methods in an online learning

environment. *Journal of Special Education Technology, 15*(2), 37-46.

Spafford, C., Pesce, A., & Grosser, G. (1997). *The cyclopedic education dictionary*. Melbourne: Delmar Publishers.

Spector, J. M., & de la Teja, I. (2001). Competencies for online teaching. *ERIC Digest, December*, 4-5.

Stevens-Long, J., & Crowell, C. (2002). The design and delivery of interactive online graduate education. In J. Schoenholtz-Read (Ed.), *Handbook of online learning*. London: Sage Publications.

Sumner, J. (2000). Serving the system: a critical history of distance education. *Open Learning, 15*(3), 267-285.

Taft, R. (1988). Ethnographic research methods. In J. Keeves (Ed.), *Educational research, methodology, and measurement: An international handbook* (pp. 59-62). Sydney: Pergamon Press.

Tait, J. (2002). 'From competence to excellence': a systems view of staff development for part-time tutors at-a-distance. *Open Learning, 17*(2), 153-166.

Tam, M. (2000). Constructivism, instructional design, and technology: Implications for transforming distance learning. *Educational Technology & Society, 3*(2).

Thach, E. C. (1994). *Perceptions of distance education experts regarding the roles, outputs, and competencies needed in the field of distance education.* Unpublished PhD, Texas A&M University, College Station, Texas.

Thach, E., & Murphy, K. (1995). Competencies for distance education professionals. *Educational Technology Research and Development, 43*(1), 57-79.

Tyler, S., Green, M., & Simpson, C. (2001). Experimenting in lotus learningspace. In A. Gooley (Ed.), *Innovation in open & distance learning: Successful development of online and web-based learning* (pp. 63-75). London: Kogan Page.

Urdan, T., & Weggen, C. (2000). *Corporate elearning: exploring a new frontier*. San Francisco: WR Hambrecht + Co.

vanManen, M. (1990). *Researching lived experience: Human science for an action sensitive pedagogy*. New York: State University of New York Press.

Volery, T. (2001). Online education: an exploratory study into success factors. *Journal of Educational Computing Research, 24*(1), 77-92.

Walford, G. (2001). *Doing qualitative educational research: A personal guide to the*

research process. London: Continuum.

Wallen, N., & Fraenkel, J. (2001). *Educational research: A guide to the process* (2 ed.). London: Lawrence Erlbaum Associates.

Weaver, D. (2003). *Evolution of a staff development program in promoting quality online teaching*. Paper presented at the Australasian Society for Computers in Learning in Tertiary Education 2003, Adelaide.

Wellington, J. (2000). *Educational research: Contemporary issues and practical approaches*. London: Continuum.

Westera, W., & Sloep, P. (2001). The future of education in cyberspace. In R. Cornell (Ed.), *Cybereducation: The future of long distance learning*. New York: Mary Ann Liebert, Inc.

White, C. (2000). Students and faculty respond to online distance courses at grant macewan community college. *Technological Horizons in Education Journal, 27*(9).

White, K., & Weight, B. (2000). *The online teaching guide: A handbook of attitudes, strategies, and techniques for the virtual classroom*. Toronto: Allyn and Bacon.

Wiersma, W. (1995). *Research methods in education: An introduction* (Vol. 6). Sydney, Allyn and Bacon.

Wilson, G., & Stacey, E. (2003). *Online interaction impacts on learning: Teaching the teachers to teach online*. Paper presented at the Australasian Society for Computers in Learning in Tertiary Education 2003, Adelaide.

Wolcott, H. (1973). *The man in the principal's office: An ethnography*. New York: Holt, Rinehart and Winston.

Wolcott, H. (1988). Ethnographic research in education. In R. Jaeger (Ed.), *Complementary methods for research in education*. Washington: American Educational Research Association.

APPENDIX A

Sample of article capability list

This is a sample of the categorization of online tutor competencies in Goodyear, Salmon, Spector, Steeples & Tickner (2001). Other articles have different categorizations and competencies listed. This is meant to give the reader a sense of the amount of information available and the synthesis of knowledge which took place to create the capability categorizations to be used by this study (APPENDIX A).

Category	Capability
Process facilitator	Introducing
	Ice-breaking
	Helping learners articulate their expectations
	Familiarizing learners with expected working practices
	Familiarizing learners with the environment
	Demonstrating the value of online activity
	Maintaining rules
	Creating community
	Maintaining discourse
	Maintaining discourse
	Creating community
	Providing positive feedback
	Ensuring safe environment
	Maintaining effective groups (sharing-moderation)
	Allocating roles
	Sharing
	Listening
	Showing enthusiasm
	Establishing & maintaining motivation
	Challenge participants, but support them individually & as a group
	Tolerate ambiguity
	Respect privacy
	Summarize key points in a discussion
	Reinforce contributions from participants
	Decide when not to contribute
	Guide discussion in keeping with lesson goals and objectives
	Help learners take responsibility for their own learning
	Help the learners articulate their learning concerns and needs

	Describe clearly the risks & boundaries of the learning space Ensure active participation of all individuals Be an active listener Help establish a sense of learning community Understand student's perspective Work with group dynamics Make appropriate contributions & encourage initial participation Encouraging sharing one's own learning with students Demonstrate self-confidence & a willingness to be open Help pace the learning process Intervene to provide direction, give info, manage disagreements, & draw in participants Encourage and motivate students Establish a sense of equality Create a student-centred environment

Assessor	Use online techniques to access learning outcomes & processes Ensure authenticity of student work Appreciate ethical milieu Distribute grades & scores in keeping with legal statutes

Researcher	Evaluate the effectiveness of online programs & materials Analyze & reflect upon data, experiences, & records of online teaching to monitor & improve one's own performance Use online resources to collect information on online teaching & learning Induct online learners into your community of knowledge production & research Develop theories or models of online teaching and learning

Content Facilitator	Point to relevant learning material/resources Construct appropriate learning tasks Maintain focus on core content Summarize content of discussions Structure available to learners Model appropriate cognitive skills Monitor progress Advising

Technologist	Possess adequate technical skills Use technology at an operational level Understand the capabilities & limitations of the available technologies/platform & infrastructure tools Assess what tools can be used for in learning Make appropriate use of tools and techniques Diagnoses learners' technical milieu and challenges Select appropriate media according to intended learning outcomes

	Have knowledge about how use of different media influence different types of tutor& student behaviour Ability to edit & update distributed learning resources Respect the intellectual property rights of others

Manager – Administrator	Interface with the institution Referral of students to appropriate sources of support Effective management of time Ability to construct timetables or schedules for learning activity/courses Enable students to participate readily in the online environment

Designer	Specify activities to be performed by students Establish relevance between the activity & the desired learning outcome Select appropriate media & modalities Provide for easy access to online activities Ensure that the learning activities are consistent with the technology constraints & capabilities Establish activities with appropriate pacing-time scale Specify & create mechanisms or tools to monitor student progress Design appropriate assessment Define completion criteria

APPENDIX B

Capability Categorization used by this study cross referenced by those of other major studies.

Reid 2004 Categories	Goodyear 2001 Categories	Salmon 2000 Categories
Content Expertise	Content Facilitator	Content Expertise
Technical Knowledge	Technologist, Designer	Technical Skills
Process Facilitation	Process Facilitator, Designer, Advisor / Counsellor	Online Communication Skills, Content Expertise, Personal Characteristics
Evaluation	Assessor, Designer, Researcher	Content Expertise
Course Management	Manager - Administrator	Understanding of online process

Reid 2004 Categories	Cyrs 1997 Categories	Berge 1995 Categories
Content Expertise	Subject matter expertise	Pedagogical
Technical Knowledge	Course planning & organization	Technical
Process Facilitation	Questioning Strategies, Verbal & nonverbal presentation skills, Collaborative teamwork, Involving students & coordinating their activities at field sites	Pedagogical, Social, Managerial
Evaluation	Course planning & organization	Pedagogical
Course Management	Involving students & coordinating their activities at field sites	Managerial

APPENDIX C

Sample of Tutor Interview Schedule

Tutor Interviews

Date _____ Time ____ Site _____ Interviewee _____

Invite tutors to tell stories about their teaching which exemplify or describe their teaching beliefs and practices.

Personal Experience

1. What experience do you have with online education and education in general?
2. What lead you to become involved in this unit?

Processes of Unit

3. What is involved in tutoring this online unit?
4. How does the process of online education work?
5. Typical difficulties you have to deal with as an online tutor?

Tutoring?

6. Please name the competencies an ideal online tutor would have?
7. What skills and traits do you think are important for an online tutor to have? (Not necessarily an "ideal" tutor.)
8. What is effective online teaching (tutoring)?
9. What are factors which affect how online units are taught?

Personal Tutoring

10. Have you experienced any particularly challenging situations or incidents online? How did you respond to the incident? What was the outcome of the incident?
11. Overall, has tutoring this unit online been a fulfilling or frustrating experience?
12. In what ways was it a fulfilling experience?

13. In what ways was it a frustrating experience?
14. Would you prefer to teach another online unit? Why or why not? If yes, what would you change and what would you do the same?

Beliefs about online education

15. Overall, how do you see the dynamics of learning changing with online education regarding the roles of faculty? Roles of students?
16. What do online tutors do that f2f tutors don't do?
17. What do you see in the future for online education?
18. What are your thoughts about the study being conducted?

APPENDIX D

Sample of Student Interview Schedule

Student Interviews

Date _____ Time ____ Site _____ Interviewee _____

Invite students to tell stories about their experiences which exemplify or describe their educational beliefs and practices.

Personal Experience

19. What is your current employment?
20. What previous employment have you had?
21. What led you to become involved in this unit?
22. What was involved in studying in this online unit?
23. Have you been involved in an online unit before? If so, how did it compare with what was required for this unit?
24. Overall, has studying this unit online been a fulfilling or frustrating experience?
25. In what ways was it a fulfilling experience?
26. In what ways was it a frustrating experience?
27. Would you choose to take another online unit? Why or why not?

Tutoring?

28. Have you experienced any particularly challenging situations or incidents online? How did you respond to the incident? What was the outcome of the incident?
29. What is effective online tutoring?
30. What do online tutors do that f2f tutors don't do?
31. What skills and traits do you think are important for an online tutor to have? (Not necessarily an "ideal" tutor.)

Beliefs about online education

32. Overall, how do you see the dynamics of learning changing with online education regarding the roles of staff and students?
33. What do you see as the future for online education?

APPENDIX E

Sample of Unit Coordinator Interview Schedule

Unit Coordinator Interviews

Date _____ Time ____ Site _____ Interviewee _____

Invite to tell stories about their teaching which exemplify or describe their teaching beliefs and practices. (Test equipment in room)

Personal Experience

1. What experience do you have with online education?
2. What lead you to become involved in this unit?
3. Specifics of pedagogical basis of this unit.
4. Specifics of demographics of students

Processes of Unit

5. What is involved in coordinating this online unit?
6. How does the process of online education work?
7. Typical difficulties you have to deal with as a unit coordinator?
8. How do you evaluate your unit to determine if changes need to be made?
9. What do you consider as success for this online unit?
10. How do you evaluate your tutors?

Beliefs about tutors

11. Please name the competencies an ideal online tutor would have?
12. What skills and traits do you think are important for an online tutor to have? (Not necessarily an "ideal" tutor.)
13. What is effective online teaching (tutoring)?

Beliefs about online education

14. What are factors which affect how online units are taught?
15. How does the experience of teaching online change the teaching beliefs and practices of academics? (Changing roles of teachers.)
16. What do online tutors do that f2f tutors don't do?
17. What do you see in the future for online education?
18. What are your thoughts about the study being conducted?

APPENDIX F

Samples of Pre-Unit Online Questionnaire

Online Education Questionnaire

According to research, all of the following specific statements are presented as examples of skills and traits which could be exhibited by online tutors.

But are all these statements of equal value? Using these statements, this study attempts to discover how important tutors and students anticipate each of these statements to be.

To complete this survey, you are asked to rate each of the statements as: Most important, Important, Less important or Least important.

Please place only 5 statements on each category. At the end, you should have 5 statements you feel are Most important, 5 statements you feel are Important, 5 statements you feel are Less important and 5 statements you feel are Least important.

This is not an attempt to evaluate anyone, neither tutors nor students, but instead seeks to obtain valuable opinions so that these specific skills and traits may begin to be formulated.

The time and effort put forth by all participants is very much appreciated.

Staff or Student ID number _____

I ask for your student number to have something to compare your pre unit opinions from your post unit opinions. No attempt will be made to connect a student number to a person's actual name.

Please place an x in the appropriate blue box next to each question.

Age

less than 21 years old ☐
21-25 years old ☐
26-30 years old ☐
31-35 years old ☐
35-40 years old ☐
41-45 years old ☐
46-50 years old ☐
51-55 years old ☐
more than 55 years old ☐

Gender

Female ☐

Male	
Online Education Experience	
0 online units before	
1 online unit before	
2 online units before	
3 or more online units before	
Years of experience using computers	
Less than a years experience	
1 year of experience	
2-4 years of experience	
5-7 years of experience	
8 or more years of experience	
Are you a tutor or student in this unit?	
tutor	
student	

	Statements to categorize Please only have 5 statements in each rank. A tutor should:	Rank Most Important	Important	Less Important	Least important
1	able to trigger intellectually challenging debates by posing intriguing questions				
2	assess the effectiveness of online programs & materials.				
3	be confident in the operational understanding of software they use.				
4	be warm and caring.				
5	communicate at the level of the student.				
6	create a positive learning environment.				
7	effectively communicate their expectations to students.				
8	employ effective time management strategies when dealing with the unit.				
9	evaluate the students' experiences throughout the course.				
10	familiarize learners with the online learning environment, including protocols for communication and interaction.				

11	have a thorough knowledge of the online process.				
12	have thorough knowledge of the content.				
13	know how to troubleshoot technical problems.				
14	maintain group harmony.				
15	model appropriate online social behaviour.				
16	modify the learning process to suit the student's needs.				
17	provides help in dealing with the services of the institution.				
18	provide prompt feedback to students.				
19	refer students to valuable resources.				
20	use a variety of methods to stimulate online discussions.				
	Your total	0	0	0	0
	Please have only 5 per category				

Please make sure you have only placed 5 statements in each rank.

You should have 5 statements you feel are Critically important, 5 statements you feel are Very important, 5 statements you feel are Less important and 5 statements you feel are Marginally important.

Any additional comments you would like to make about online tutors

Thank you for your assistance.

APPENDIX G

Samples of Unit Wrap-up Online Questionnaire

Online Education Questionnaire

According to research, all of the following specific statements are presented as examples of skills and traits which could be exhibited by online tutors.

But are all these statements of equal value? Using these statements, this study attempts to discover how important tutors and students anticipate each of these statements to be.

To complete this survey, you are asked to rate each of the statements as: Most important, Important, Less important or Least important.

Please place only 5 statements on each category. At the end, you should have 5 statements you feel are Most important, 5 statements you feel are Important, 5 statements you feel are Less important and 5 statements you feel are Least important.

This is not an attempt to evaluate anyone, neither tutors nor students, but instead seeks to obtain valuable opinions so that these specific skills and traits may begin to be formulated.

The time and effort put forth by all participants is very much appreciated.

Staff or Student ID number _____

I ask for your student number to have something to compare your pre unit opinions from your post unit opinions. No attempt will be made to connect a student number to a person's actual name.

	Statements to categorize Please only have 5 statements in each rank. A tutor should:	Rank Most Important	Important	Less Important	Least Important
1	able to trigger intellectually challenging debates by posing intriguing questions				
2	assess the effectiveness of online programs & materials.				
3	be confident in the operational understanding of software they use.				

4	be warm and caring.				
5	communicate at the level of the student.				
6	create a positive learning environment.				
7	effectively communicate their expectations to students.				
8	employ effective time management strategies when dealing with the unit.				
9	evaluate the students' experiences throughout the course.				
10	familiarize learners with the online learning environment, including protocols for communication and interaction.				
11	have a thorough knowledge of the online process.				
12	have thorough knowledge of the content.				
13	know how to troubleshoot technical problems.				
14	maintain group harmony.				
15	model appropriate online social behaviour.				
16	modify the learning process to suit the student's needs.				
17	provides help in dealing with the services of the institution.				
18	provide prompt feedback to students.				
19	refer students to valuable resources.				
20	use a variety of methods to stimulate online discussions.				
	Your total	0	0	0	0
	Please have only 5 per category				

Please make sure you have only placed 5 statements in each rank.

You should have 5 statements you feel are Critically important, 5 statements you feel are Very important, 5 statements you feel are Less important and 5 statements you feel are Marginally important.

Any additional comments you would like to make about online tutors

Thank you for your assistance.

APPENDIX H

Statement of Disclosure and Informed Consent

Research Study
An examination of the competencies required by University tutors in online learning environments and the factors affecting the relative importance of these competencies.

Dear Participant,
The Internet has provided distance education with new teaching and learning opportunities. Since the Internet is a relatively new phenomenon, there have been attempts to impose older, more traditional approaches to control its use in educational settings. There are a number of sources of educational inertia including the lack of formal and informal training opportunities for online tutors. In the revolutionary situation which distance education finds itself, online tutors are acting as pathfinders in uncharted territory finding their way in cyberspace in the hope of discovering what works in this new environment. The purpose of this study is to examine the perceptions of online tutors, students and course coordinators to discover what they feel are the competencies (skills and traits) required by effective online tutors.

It is expected that through this research I will be able to discover the relative merits of various tutor competencies in online settings. The study will involve pre-surveys before any instruction takes place, followed by observations and selected interviews during the online course. As the course wraps up, there will be post- surveys and selected interviews. During this collection of data, I will be reviewing all of the information that I am presented with in order to form the basis of my research. Participation in this study will involve a time commitment of approximately an hour over the course of the study.

Your participation is sought because you are currently involved with an online course that I will be examining and by participating in this project you will gain a greater understanding and knowledge of the skills and traits needed by an effective online tutor. You will be more willing to share and ask for help in this important educational process. You will also be more likely to use technology in the learning process and you will be more willing to study in an online setting in the future. You will be directly involved in the project, your opinions and perceptions will directly influence the findings of this study. In addition, you will be adding to the validity, reliability and transparency of the online tutoring process for all stakeholders and this study will also allow for improved guidelines leading to the training of more effective online tutors. Another benefit of participating in this study is adding to the knowledge that society has in regards to online education.

Depending on your role in the study, you may be asked to participate in the following activities: online questionnaires, interviews and observations.

Thank you for participating in this research project. Could you please sign and return the following consent form.

Doug Reid
Date

Questions concerning the project
Can be directed to:
Doug Reid
Edith Cowan University
2 Bradford St
Mt Lawley WA 6050
phone [redacted]
email – d.reid@ecu.edu.au
If you have any concerns about the project or would like to talk to an independent person, you may contact Dr Paul Newhouse, on 9370 6469 or email p.newhouse@ecu.edu.au

.....

CONSENT FORM

Project Title: An examination of the competencies required by University tutors in online learning environments and the factors affecting the relative importance of these competencies.

I (the participant) _____ have read the information above (or, "have been informed about all aspects of the above research project") and any questions I have asked have been answered to my satisfaction.

I agree to participate in these activities, realising I may withdraw at any time.

I agree that the research data gathered for this study may be published provided I am not identifiable.

Participant _____ Date:

Investigator _____ Date: _____

APPENDIX I

Student Copyright Clearance

Authorisation for Copying Student Work
Dear Student,
Thank you for your response and co-corporation with this research project. There may be situations where publicly posted comments are made, such as on an electronic bulletin board, and these comments might quoted anonymously to demonstrate a point.
This form seeks your copyright permission to use your work for the following purposes:
- Research and PhD study regarding characteristics of online tutors; and
- Development of greater understanding of the factors which affect the competencies of effective online tutors;.
If you are happy for your work to be used for the above purposed,
please return this consent form via return e-mail with the following details completed.

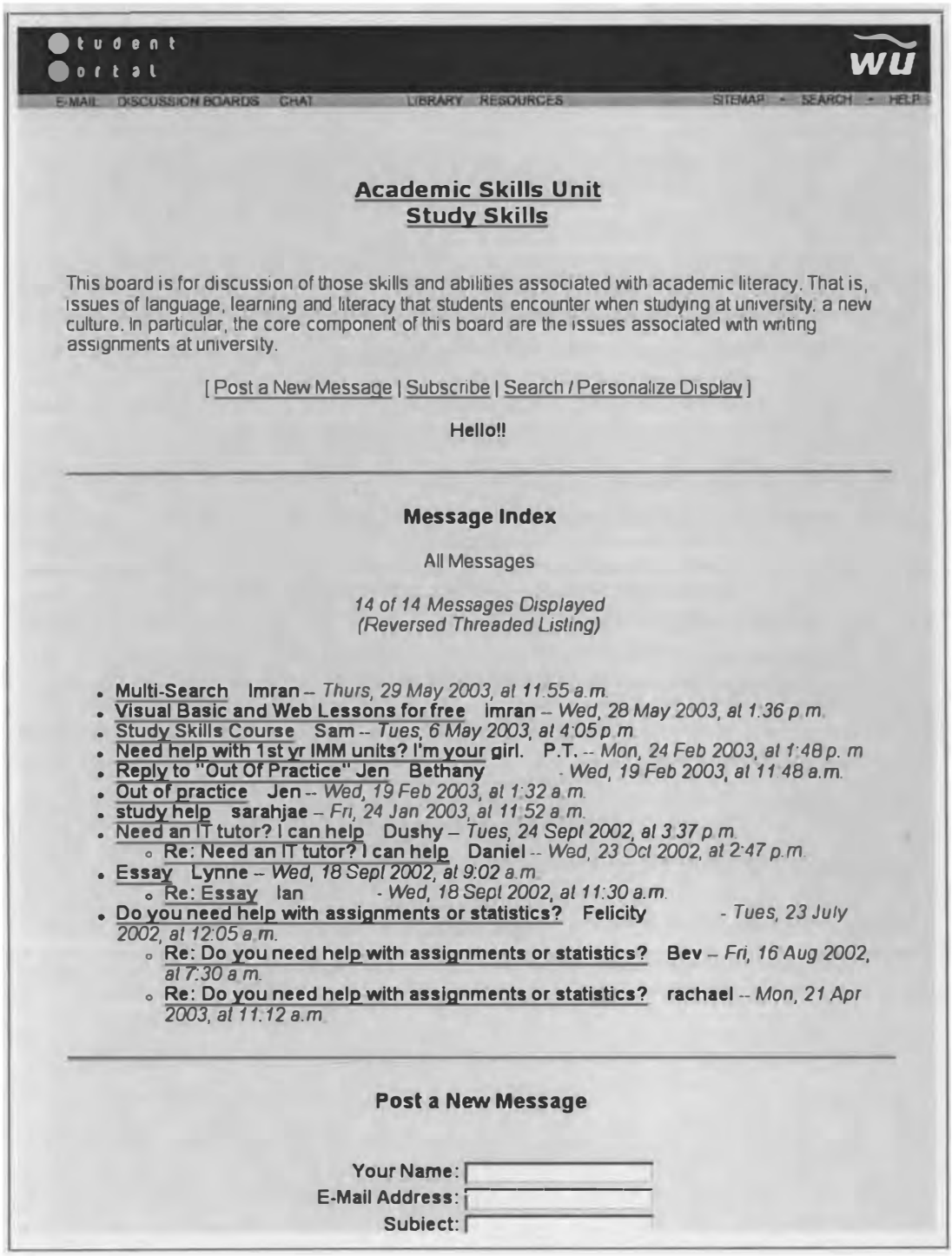
As a student of Edith Cowan University,
I declare that material publicly posted in my name is my own work.
I authorise this work or part of this work to be:
- Communicated;
- Copied electronically;
- Annotated both hardcopy and electronic;
- Published in research and PhD study;
- Accessed via a database with password protection;
- Where appropriate to be broken-up to highlight aspects of the assignment /exam requirements; and
- Viewed by staff, tutors and other students.

Note:
I understand I will retain copyright of this work.
The published works will not show your name unless you specifically indicate below:
Do not attach / attach (please indicate by deleting the inappropriate response) my name to all pieces of my work.

The following details completed and sent back via return e-mail, will represent your permission to use the above-mentioned work in the above-mentioned ways.
Full name:
Student Number:
And Contact detail: Address: Email:
Phone Number: Mobile:
Thank you for your cooperation. If you would like more information or to discus this consent form please e-mail me at d.reid@ecu.edu.au.
Doug Reid
Faculty: CSESS School: Education
Name: Doug Reid – d.reid@ecu.edu.au phone –[redacted]

APPENDIX J

Example of a Virtual Campus Bulletin Board page.



Student Portal — wu

E-MAIL DISCUSSION BOARDS CHAT LIBRARY RESOURCES SITEMAP - SEARCH - HELP

Academic Skills Unit
Study Skills

This board is for discussion of those skills and abilities associated with academic literacy. That is, issues of language, learning and literacy that students encounter when studying at university: a new culture. In particular, the core component of this board are the issues associated with writing assignments at university.

[Post a New Message | Subscribe | Search / Personalize Display]

Hello!!

Message Index

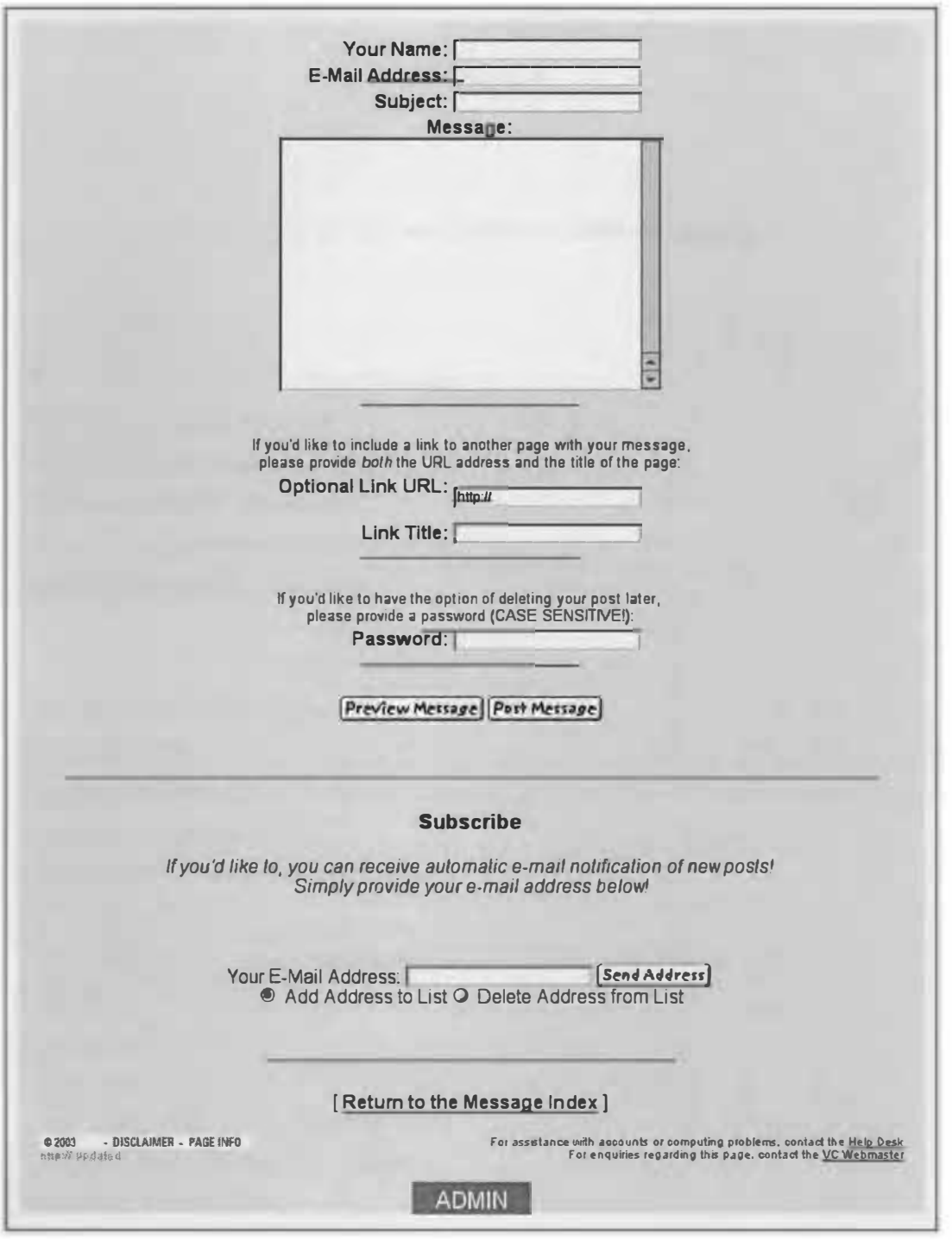
All Messages

14 of 14 Messages Displayed
(Reversed Threaded Listing)

- **Multi-Search** Imran -- *Thurs, 29 May 2003, at 11:55 a.m.*
- **Visual Basic and Web Lessons for free** Imran -- *Wed, 28 May 2003, at 1:36 p.m.*
- **Study Skills Course** Sam -- *Tues, 6 May 2003, at 4:05 p.m.*
- **Need help with 1st yr IMM units? I'm your girl.** P.T. -- *Mon, 24 Feb 2003, at 1:48 p.m.*
- **Reply to "Out Of Practice" Jen** Bethany - *Wed, 19 Feb 2003, at 11:48 a.m.*
- **Out of practice** Jen -- *Wed, 19 Feb 2003, at 1:32 a.m.*
- **study help** sarahjae -- *Fri, 24 Jan 2003, at 11:52 a.m.*
- **Need an IT tutor? I can help** Dushy -- *Tues, 24 Sept 2002, at 3:37 p.m.*
  - **Re: Need an IT tutor? I can help** Daniel -- *Wed, 23 Oct 2002, at 2:47 p.m.*
- **Essay** Lynne -- *Wed, 18 Sept 2002, at 9:02 a.m.*
  - **Re: Essay** Ian - *Wed, 18 Sept 2002, at 11:30 a.m.*
- **Do you need help with assignments or statistics?** Felicity - *Tues, 23 July 2002, at 12:05 a.m.*
  - **Re: Do you need help with assignments or statistics?** Bev -- *Fri, 16 Aug 2002, at 7:30 a.m.*
  - **Re: Do you need help with assignments or statistics?** rachael -- *Mon, 21 Apr 2003, at 11:12 a.m.*

Post a New Message

Your Name:
E-Mail Address:
Subject:



Your Name:
E-Mail Address:
Subject:
Message:

If you'd like to include a link to another page with your message, please provide *both* the URL address and the title of the page:

Optional Link URL: http://

Link Title:

If you'd like to have the option of deleting your post later, please provide a password (CASE SENSITIVE!):

Password:

Preview Message | Post Message

Subscribe

If you'd like to, you can receive automatic e-mail notification of new posts! Simply provide your e-mail address below!

Your E-Mail Address: Send Address

◉ Add Address to List ○ Delete Address from List

[Return to the Message Index]

APPENDIX K

First review of the tutor interviews draft categories.

Tutor Attributes

Understanding student viewpoint

Facilitator / encouragement

Employee restrictions, motivation

Tutors need to be there for the students (& care)

Facilitate understanding - learning process

Tutor experience

Tutor experience / belief / values

Tutor experience

Experience with tutoring

Experience, content knowledge

Students & tutors - experience with ed tech

Pedagogy -

Pedagogy

Pedagogy

Technical milieu -

Technical milieu - helping, basic standards

Technology handling, limits

Use Tech to aid content understanding

Tech milieu – access milieu

Design -

Design of unit – content of unit

Delivery -

Presentation of materials

Community -

Learning communities, collaborative

Community – student interaction

Social interactions/environment

Communication milieu – student / tutor

Communication milieu – student / tutor

Student / Tutor interaction – 18

Communication - student / tutor

Communication - tutor / students

Communication – Student / tutor

Tutor – student interaction

Tutor preparation / experience, guiding (not teaching)

Student responsibility

Students responsible for learning and contact

Student perceptions, responsibility of learning

Student Attributes

Student expectations, adapt to online environment

Motivation of students

Student engagement - motivation

Students -online ed culture

Institutional milieu

Instructional design milieu, Assignments

Institutional milieu - help desk, comm, int/ext students

Institutional management milieu

Institutional milieu

Delivery of content – access, CD / Online / broadband

APPENDIX L

Sample of compiled illustrative examples of *Student Responsibility* category.

Student Responsibility

Major Point - Student Responsibility – Benny
Major Point - Student Responsibility – Margaret
Major Point - Student responsibility – William
Minor Point - Student Responsibility – Lauchlin

Tentative Category Definition

Student Responsibility – What students are responsible for according to the tutor, the unit designer and the university. Not necessarily what the students think they are responsible for.

Examples from Tutor Interviews

Major Point - Student Responsibility – Benny Examples - students responsible for their own learning, have to engage the materials, students emailing at the last moment and not having work done, students responsible for their own learning (no more spoon feeding), new student centred learning doesn't allow for doing assignments at the last minute which involve reflection, students need to learn a new way of learning, taking responsibility for their own learning, hard to get them to take responsibility for their own learning in that environment, may have opted for an individualized learning experience, students decide what they will do and will not do, students will become more active in the construction of knowledge rather than the receivers of knowledge,

Major Point - Student Responsibility – Margaret examples - students had to sit down and learn to use web editor, student innovation in assignments, able to take initiative, to get the work done, some students just didn't do the work, had to get web editor, to study all material not just from workbook, little attempt made to use library, to have reliable computer access (hardware, software, email and access issues), to print readings or to read from the screen rather than workbooks, + some students needed a lot of extra help for software usage,

Major Point - Student responsibility – William examples - to contact tutor, to read email, DB, for own work, quality, supposed to do individual research on their own, to be more of a researcher to learn to be a student, 'be adaptable, creative and innovative in the ways of learning', have more responsibility than f2f, + frustrating - asking students to contact you and they don't contact you,

Minor Point - Student Responsibility – Lauchlin examples - student responsible to contact tutor, self-teaching, following schedule, own pace, own time and own initiative, + do students know this is their responsibility to self-teach?,

Examples from Student Interviews

Student Responsibility – Catherine student Examples – she had to download material at beginning of semester or during depending on how she choose to do it, access it at her leisure, Had to walk your way through the readings to get to the other end, No mention of ergonomic advice on website or in the unit contents so their health is there own responsibility, it seemed that it was the students responsibility to contact tutor if she was having a problem or had a question,

Student Responsibility – Margaret student Examples – Everything came in the mail and you had to sit there and read it all, made own notes to have a better level of comprehension, Time requirement – lots of sections of material to get through everyday, trying to get through chapters of work, read that, do assignments and then prepare for the exam, Only made one online tutorial, Contacted tutor about her life commitments and thought she should defer, only time she talked to the tutor was when she had a problem, Students need to become more of an aware one because of the isolated environment so students are more responsible for their own learning, Couldn't do additional reading because it was impossible to get,

Student Responsibility – AC student Examples – When you talk online you have to check and understand in a mathematical way, it's very hard to share the idea,

Student Responsibility – AC student Examples – rest of group communicating but her eyes hurt so she didn't send as many emails to them as they did, They always asked me for the response but some misunderstandings arise because they may not have thought that she was working with them,

Student Responsibility – AC student Examples – this was designed to have students participate actively, When editing other students work had to sent it to Jan by midnight but sent it to the wrong DB, Had to call Jan and explain that the work was done it had originally been posted on the wrong DB, Certain things are expected from the masters students (Maybe they have good reasons for not being that clear with their assignment instructions),

Examples from Coordinator Interviews

Student Responsibility – William's unit coordinator Examples – making sure students have all the necessary info at their fingertips (like letter saying go to this website to get info), Students don't have enough info right now about institutional things (what to do about extensions, sickness, etc),

Student Responsibility – Margaret's unit coordinator Examples – Problems this semester with accessing supplemental online material – some materials were not useful because of the circuits some students were using like low bandwidth circuits (student responsibility to have adequate bandwidth connection?),

Student Responsibility – Benny's unit coordinator Examples – typically students are working along and don't need to be reminded but some do, Students are overwhelmed by work sometimes (10 hours a week), classes online are 10 hours a week but online people think 5 hours a week is appropriate, Need a motivated student who wants to learn, good degree of self discipline, learn through their own activity, many supports going for success are critical (work of unit becomes part and parcel of their lifework), looks at quality of the assignment work,

Student Responsibility – AC's unit coordinator Examples – group work is particular in the co-construction of knowledge, Hard to get people to accept and respect all contributors – have to learn that emails might not come across the way you want them to come across, email limits the way you communicate, Need to use your social skills to become an effective group member through a virtual online Db is really hard, Deliberately puts people who can't come to the workshops (in other countries) in groups with people who can so part of the responsibility of the group members who can come share the workshop info with the absent members, There is no minimum level of IT ability required by students, My level of support is based on the belief that is reasonable in 2002 to expect that students in a post grad unit should be able to use Windows and word process and things like that plus email but there are international students who haven't had that opportunity for all sorts of reasons, Will help them learn how to use the DB and that part of it but email she helps a bit and puts them through to the help desk, She expects a certain level of technical ability from post grads,

APPENDIX M

First comparison of categories and capabilities categories.

Capabilities and Factors		
Competency	**Factor**	Explanation of relationship
Evaluation	Design / Pedagogy	Course evaluation provides feedback to the unit coordinator on how things may be improved or changed and what situations were encountered during the unit.
	Tutor Experience	It is the self assessment of the tutor to reflect on the situations which arose during the unit and how the positives may occur more often next time and how to proactively reduce the negatives. It is the learning the tutor did during the unit and how they will improve next time.
	Interaction student / tutor	This is the feedback the students receive during the unit in regard to assessments, either formal or informal. This feedback is meant to help the students achieve success in their learning and the way the message is interpreted by the student can be greatly affected by how the feedback is presented to the student.
	Teaching Processes	The assessment, monitoring and feedback portions are related to teaching processes like marking and time management. Getting feedback to the students and monitoring progress need time management and the marking to be done.

Course Management	Teaching Processes	The administrative functions of teaching like recording marks, making sure all students are enrolled, arranging for exams to be written and the like are non-instructional process which these cover.
	Institutional Milieu	Being an institutional contact is affected by the policies, procedures and supposed beliefs of the institution offering the unit.
Technical Knowledge	Technical Milieu	Both include the use of technology in the unit by both the tutor and the students, with regard to access situations and technical support.
	Tutor Experience	This is through the attitude of the tutor in regard to the delivery of the content and the communication with students. Also with the technical support and use of technology because if one student is having a problem, then more will probably be having it as well.
	Design / Pedagogy	The choice of technology comes into the design of the unit. The technology pedagogy underscores all the decisions made in the teaching of the unit online like the presentation of the unit and how the tutor acts pedagogically during the unit.
	Institutional Milieu	The technical support required of and by the tutor is affected by the policies, procedures and supposed beliefs of the institution offering the unit.
Content Expertise	Content Expertise	These both show the tutor showing an expertise in the content area, through question analysis and the like.
	Content Milieu	These both cover the finding of appropriate material for the students, and how that content was used within the unit.
	Technical Milieu	The providing of resources in an online environment is affected by technical milieu, such as access and format of materials.

Process Facilitation	Design / Pedagogy	The design of the unit can limit how the tutor can act in regard to the students and the content. Sometimes it allows the tutors to take a proactive guidance role and other times they are placed in a reactive, troubleshooting role. The pedagogy of the tutor has the tutor believing what is appropriate in this setting and affects how they can in the unit.
	Facilitation of learning	The way the tutor facilitates the unit does not have to be through direct instruction. Often, guidance or clarification is all that is needed to allow students the chance to succeed.
	Interaction student / tutor	This goes to the personal characteristics and online communication skills which are used in online education.
	Tutor Experience	The understanding of the online education process which is affected by the experience the online tutor has. The personal characteristics of the tutor can be modified depending on the experience the tutor has in this and other settings.
	Tutor Personality	The personal characteristics deal with things like the emotions, behaviours and personality of the tutor.
	Community	This setting with or without a learning community affects how the tutor can act in the unit. The understanding of the online process is affected because it might be different than what the tutor believes the community should be.
	Teaching Processes	The understanding of the online education process includes a realistic view on the amount of time is involved in tutoring an online unit. Time management skills is a teaching process which needs to be applied to the process facilitation of online education.

APPENDIX N

Sample of process determining factors which affect capabilities.

Competencies and Factors		
Capability	Factor	Connection
Technical Knowledge	Technical Milieu	Both include the use of technology in the unit by both the tutor and the students, with regard to access situations and technical support.
Technical Knowledge	Tutor Experience	This is through the attitude of the tutor in regard to the delivery of the content and the communication with students. Also with the technical support and use of technology because if one student is having a problem, then more will probably be having it as well.
Technical Knowledge	Design / Pedagogy	The choice of technology comes into the design of the unit. The technology pedagogy underscores all the decisions made in the teaching of the unit online like the presentation of the unit and how the tutor acts pedagogically during the unit.
Technical Knowledge	Institutional Milieu	The technical support required of and by the tutor is affected by the policies, procedures and supposed beliefs of the institution offering the unit.
Content Expertise	Content Expertise	These both show the tutor showing an expertise in the content area, through question analysis and the like.
Content Expertise	Content Milieu	These both cover the finding of appropriate material for the students, and how that content was used within the unit.
Content Expertise	Technical Milieu	The providing of resources in an online environment is affected by technical milieu, such as access and format of materials.
Process Facilitation	Design / Pedagogy	The design of the unit can limit how the tutor can act in regard to the students and the content. Sometimes it allows the tutors to take a proactive guidance role and other times they are placed in a reactive, troubleshooting role. The pedagogy of the tutor has the tutor believing what is appropriate in this setting and affects how they can in the unit.
Process Facilitation	Facilitation of learning	The way the tutor facilitates the unit does not have to be through direct instruction. Often, guidance or clarification is all that is needed to allow students the

		chance to succeed.
Process Facilitation	Interaction student / tutor	This goes to the personal characteristics and online communication skills which are used in online education.
Process Facilitation	Tutor Experience	The understanding of the online education process which is affected by the experience the online tutor has. The personal characteristics of the tutor can be modified depending on the experience the tutor has in this and other settings.
Process Facilitation	Tutor Personality	The personal characteristics deal with things like the emotions, behaviours and personality of the tutor.
Process Facilitation	Community	This setting with or without a learning community affects how the tutor can act in the unit. The understanding of the online process is affected because it might be different than what the tutor believes the community should be.
Process Facilitation	Teaching Processes	The understanding of the online education process includes a realistic view on the amount of time is involved in tutoring an online unit. Time management skills is a teaching process which needs to be applied to the process facilitation of online education.
Evaluation	Design / Pedagogy	Course evolution provides feedback to the unit coordinator on how things may be improved or changed and what situations were encountered during the unit.
Evaluation	Tutor Experience	It is the self assessment of the tutor to reflect on the situations which arose during the unit and how the positives may occur more often next time and how to proactively reduce the negatives. It is the learning the tutor did during the unit and how they will improve next time.
Evaluation	Interaction student / tutor	This is the feedback the students receive during the unit in regard to assessments, either formal or informal. This feedback is meant to help the students achieve success in their learning and the way the message is interpreted by the student can be greatly affected by how the feedback is presented to the student.
Evaluation	Teaching Processes	The assessment, monitoring and feedback portions are related to teaching processes like marking and time management. Getting feedback to the students and monitoring progress need time management and the marking to be done.

Course Management	Teaching Processes	The administrative functions of teaching like recording marks, making sure all students are enrolled, arranging for exams to be written and the like are non-instructional process which these cover.
Course Management	Institutional Milieu	Being an institutional contact is affected by the policies, procedures and supposed beliefs of the institution offering the unit.